

1.3.1 Institution integrated cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the curriculum.

Indira Gandhi Govt P G Collge, Vaishali Nagar, Bhilai

cross-cutting issues	Class	Subject	Paper/Unit	Remarks
Gender	Bachelor of Science 2 nd Year	Zoology	Paper 2 – unit 2,	
	Bachelor of Arts 2 nd Year	Sociology	paper 1 Unit 3,4,5	
	Bachelor of Arts 3 rd Year	Political Science Geography	paper 2 unit 5	
		Sanskrit	paper 1 Unit 1	
	B H Sc. 1 st Year	Basic Nutrition Community Development	Unit 5	
		Personal Empowerment & Computer Basic	Unit 1, 2, 3, 4	
B H Sc. 3 rd Year	Nutritional Biochemistry	Unit 1, 2, 3, 4, 5		
Environmental & Sustainability	Bachelor of Science 2 nd Year	Zoology	Paper 2 – unit 3	
		Botany	Paper 1 Unit 1,2,3,4,5	
		Industrial Micro.	Paper 1 unit 1, 2	
	Bachelor of Science 3 rd Year	Zoology	Paper 1 unit 1,2,3	
		Botany	paper 1 & Paper 2 unit 1,2,3,4,5	
	Bachelor of Arts 2 nd Year	Geography	Paper 2 unit 2	
		Sanskrit	Paper 2 Unit 2	
	Bachelor of Arts 3 rd Year	Hindi Language	paper 1 unit 2,3	
		Sanskrit	Paper 1 unit 1	
		Political science	paper 1 unit 5	
Geography		Paper 1 unit 4,5		
Economics		paper 1 unit 2,5		
Human Values	Bachelor of Arts 2 nd Year	Political Science	Paper 1 unit 1,2,3,4,5 Paper 2 unit 1,2,3,4,5	
		Sociology	Paper 2 unit 1,2,3,4,5	
		Geography	paper 1 unit 4	
	Bachelor of Arts 3 rd Year	Political Science	Paper 2 Unit 1,2,3,4,5	
		Economics	paper 1 unit 1,3	
	Bachelor of Science 2 nd Year	Zoology	Paper 2 unit 1, 4 paper 1 Unit 1,2,3,4,5	
	B H Sc 1 st Year	Basic Nutrition	Unit 1, 2, 3, 4, 5	
		Introduction to Resource Management	Unit 1, 2, 3, 4, 5	
		Introduction to Human Development	Unit 1, 2, 3, 4, 5	
		Community	Unit 1, 2, 3, 4	

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	B H Sc 2 nd Year	Development		
		Clinical Nutrition & Dietetics	Unit 1, 2, 3, 4, 5	
		Human Physiology & Community Nutrition	Unit 1, 2, 3, 4, 5	
	B H Sc 3 rd Year	Life Span Development	Unit 1, 2, 3, 4	
		Extension Education	Unit 1,2,3,4,5	
Professional Ethics	Bachelor of Com. 1 st Year	Corporate Accounting	Unit 1,2,3,4,5	
		Company Law	Unit 1,2,3,4,5	
		Cost Accounting	Unit 1,2,3,4,5	
		Principal of Business Mgmt	Unit 1,2,3,4,5	
		Business Statistics	Unit 1,2,3,4,5	
		Fundamental of Entrepreneurship	Unit 1,2,3,4,5	
	Bachelor of Com. 2 nd Year	Corporate Accounting	Unit 1,2,3,4,5	
		Company Law	Unit 1,2,3,4,5	
		Cost Accounting	Unit 1,2,3,4,5	
		Principal of Business Mgmt	Unit 1,2,3,4,5	
		Business Statistics	Unit 1,2,3,4,5	
		Fundamental of Entrepreneurship	Unit 1,2,3,4,5	
	Bachelor of Com. 3 rd Year	Corporate Accounting	Unit 1,2,3,4,5	
		Company Law	Unit 1,2,3,4,5	
		Cost Accounting	Unit 1,2,3,4,5	
		Principal of Business Mgmt	Unit 1,2,3,4,5	
		Business Statistics	Unit 1,2,3,4,5	
		Fundamental of Entrepreneurship	Unit 1,2,3,4,5	
	Bachelor of Arts 2 nd Year	Economics	Paper 1 Unit 1,2,3,4,5 paper 2 Unit 1,2,3,4,5	
	Bachelor of Science 1 st Year	Physics	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
		Maths	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
		Computer Science	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
	Bachelor of Science 2 nd Year	Zoology	Paper 2 unit 5	
		Physics	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
		Maths	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
		Computer Science	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
	Bachelor of Science 3 rd Year	Physics	Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5	
Maths		Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5		
Computer Science		Paper 1 - Unit 1,2,3,4,5 & Paper 2 - Unit 1,2,3,4,5		

			2 - Unit 1,2,3,4,5	
B H Sc 1 st Year				
	Textile & Clothing		Unit 1, 2, 3, 4, 5	
	Personal Empowerment & Computer Basic		Unit 5	
B H Sc 2 nd Year				
	Textiles & Fiber Science		Unit 1, 2, 3, 4, 5	
	Communication Process		Unit 1, 2, 3, 4, 5	
	Life Span Development		Unit 5	
	Consumer Economics		Unit 1, 2, 3, 4, 5	
B H Sc 3 rd Year				
	Food Preservation		Unit 1, 2, 3, 4, 5	
	Early Childhood Education		Unit 1, 2, 3, 4, 5	
	Foundation & Art & Design		Unit 1, 2, 3, 4, 5	
	Apparel Making		Unit 1, 2, 3, 4, 5	


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 Vaishali Nagar, Bhitai

B. Sc Part 1



हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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क्र. 1460 /अका./2019
प्रति,

दुर्ग, दिनांक 05/07/2019

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर भाग-एक के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-एक के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2019-20 से लागू किये जाते हैं:-

1. बी.ए. - आधार पाठ्यक्रम-हिन्दी भाषा, हिन्दी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, मानवविज्ञान, संस्कृत, सांख्यिकी, प्राचीन भारतीय इतिहास, भूगोल, मनोविज्ञान, लाइब्रेरी साईंस
2. बी.एस-सी. - आधार पाठ्यक्रम-हिन्दी भाषा, जीव विज्ञान, मानवविज्ञान, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, गणित, भौतिक शास्त्र, प्राणीशास्त्र, सूक्ष्मजीव विज्ञान, वनस्पतिशास्त्र, भूविज्ञान, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3. बी.एस.सी- (गृह विज्ञान) - आधार पाठ्यक्रम - हिन्दी भाषा एवं गृह विज्ञान।
4. विधि - एल.एल.बी.
5. प्रबंध - बी.बी.ए.

उपरोक्त विषयों को शिक्षा सत्र 2019-20 से संशोधित रूप में स्नातक स्तर भाग-एक के लिए लागू किया जाता है स्नातक स्तर भाग दो एवं तीन के पाठ्यक्रम यथावत रहेंगे।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार।

कुलसचिव

B. Sc. Part-I

विषय-सूची

1. Revised Ordinance No. 21
2. Scheme of Examination
3. Environmental Studies
4. Foundation Course : आधार पाठ्यक्रम
प्रथम हिन्दी
द्वितीय - अंग्रेजी भाषा
Physics (भौतिक शास्त्र)
6. Chemistry (रासायन शास्त्र)
7. Zoology (प्राणी शास्त्र)
8. Botany (वनस्पति शास्त्र)
9. Mathematics (गणित)
10. Microbiology (सूक्ष्म जीव विज्ञान)
11. Geology (भू - विज्ञान)
12. Anthropology (मानव विज्ञान)
13. Statistics (सांख्यिकी)
14. Defense Studies (रक्षा अध्ययन)
15. Industrial Chemistry (औद्योगिक रसायन)
16. Computer Science
17. Electronics Equipment Maintenance
18. Electronics
19. Information Technologies
20. Industrial Microbiology
21. Bio Chemistry
22. Biotechnology

REVISED ORDINANCE NO. 21

BACHELOR OF SCIENCE

The three year course has been broken up into three Parts. Part-I known as B.Sc. Part-I examination at the end of the first year, Part-II known as B.Sc. Part-II examination at the end of the second year and Part-III known as B.Sc. Part-III examination at the end of the third year.

2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of C.G. Board of Secondary Education Bhopal or any other Examination recognized by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated College or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.Sc. Part-I examination.
3. A candidate who, after passing the B.Sc.-I examination of the University or any other examination recognized by the University as equivalent thereto, has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-II examination.
4. A candidate who, after passing the B.Sc. Part-II examination of the University, has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-III examination.
5. Besides regular students, subject to their compliance with this Ordinance ex-student and non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular student at any of the University Teaching Department or College.
6. Every candidate appearing in B.Sc. Part-I, Part-II and Part-III examination shall be examined in-
 - (i) Foundation Course:
 - (ii) Any one of the following combinations of three subjects:-
 1. Physics, Chemistry & Mathematics.
 2. Chemistry, Botany & Zoology.
 3. Chemistry, Physics & Geology.
 4. Chemistry, Botany & Geology.
 5. Chemistry, Zoology & Geology.
 6. Geology, Physics & Mathematics.
 7. Chemistry, Mathematics & Geology.
 8. Chemistry, Botany & Defense Studies.
 9. Chemistry, Zoology & Defense Studies
 10. Physics, Mathematics & Defense Studies.
 11. Chemistry, Geology & Defense Studies

12. Physics, Mathematics & Statistics
13. Physics, Chemistry & Statistics
14. Chemistry, Mathematics & Statistics.
15. Chemistry, Zoology & Anthropology.
16. Chemistry, Botany & Anthropology.
17. Chemistry, Geology & Anthropology.
18. Chemistry, Mathematics & Statistics.
19. Chemistry, Anthropology & Defense Studies.
20. Geology, Mathematics & Statistics.
21. Mathematics, Defense Studies & Statistics
22. Anthropology, Mathematics & Statistics
23. Chemistry, Anthropology & Applied Statistics
24. Zoology, Botany & Anthropology
25. Physics, Mathematics & Electronics.
26. Physics, Mathematics & Computer Application
27. Chemistry, Mathematics & Computer Application
28. Chemistry, Bio-Chemistry & Pharmacy
29. Chemistry, Zoology & Fisheries.
30. Chemistry, Zoology & Agriculture
31. Chemistry, Zoology & Sericulture
32. Chemistry, Botany & Environmental Biology
33. Chemistry, Botany & Microbiology
34. Chemistry, Zoology & Microbiology
35. Chemistry, Industrial Chemistry & Mathematics
36. Chemistry, Industrial Chemistry & Zoology
37. Chemistry, Biochemistry, Botany
38. Chemistry, Biochemistry, Zoology
39. Chemistry, Biochemistry, Microbiology
40. Chemistry, Biotechnology, Botany
41. Chemistry, Biotechnology, Zoology
42. Geology, Chemistry & Geography
43. Geology, Mathematics & Geography
44. Mathematics, Physics & Geography
45. Chemistry, Botany & Geography

(iii) Practical in case prescribed for core subjects.

7. Any candidate who has passed the B.Sc. examination of the University shall be allowed to present himself for examination in any of the additional subjects prescribed for the B.Sc. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.Sc. Part-I examination in the subjects which he proposes to offer and then the B.Sc. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

8. In order to pass at any part of the three year degree course examination an examinee must obtain not less than 33% of the total marks in each subject/ group of subjects. In subject/ group of subjects where both theory and practical examination are provided an examinee must pass in both theory and practical parts of the examination separately.
9. Candidate will have to pass separately at the Part-I, Part-II and Part-III examinations. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the division of the final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken in to account. Provided in case of candidate who has passed the examination through supplementary examination having failed in one subject/ group only, the total aggregate marks being carried over for determining the division shall include actual marks obtained in the subject/ group in which he appeared at the supplementary examination.
10. Successful examinee at the Part-III examination obtaining 60% or more marks shall be places in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.

Part - I

SYLLABUS FORENVIRONMENTAL STUDIES AND HUMAN RIGHTS
(Paper code-0828)

MM. 75

इन्चायरमेंटल साईसेस के पाठ्यक्रम को स्नातक स्तर भाग-एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003-2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न-पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक - 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

- (अ) लघु प्रश्नोंत्तर - 25 अंक
(ब) निबंधात्मक - 50 अंक

Field Work- 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं केसमान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा केसाथ किया जाएगा। पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग-एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33: (तींतीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग-एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधीक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, Scope and

Importance Natural Resources:

Renewable and Nonrenewable Resources

- (a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.
- (b) Water resources: Use and over-utilization of surface and ground water, floods drought, conflicts over water, dams benefits and problems and relevant Act.
- (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.
- (d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.
- (e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.
- (f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of and ecosystem

- Producers, consumers and decomposers.
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

(b) Biodiversity and its Conservation

- Introduction - Definition: genetic, species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use, Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

(12Lecture)

UNIT- III

(a) Causes, effect and control measures of

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

(12Lecture)

(b) Environmental Management

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, water shed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights.
Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948.
Convention on the Elimination of all forms of Discrimination against women.
Convention on the Rights of the Child, 1989.

UNIT-V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India.
Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India.
Fundamental Duties under the Constitution of India.

संशोधित पाठ्यक्रम
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.
भाग - एक (आधार पाठ्यक्रम)
प्रश्न पत्र- प्रथम (हिन्दी भाषा)
(पेपर कोड -0101)

पूर्णांक- 75

नोट :-

1. प्रश्न पत्र 75 अंक का होगा।
2. प्रश्न पत्र अनिवार्य होगा।
3. इसके अंक श्रेणी निर्धारण के लिए जोड़े जायेंगे।
4. प्रत्येक इकाई के अंक समान होंगे।

पाठ्य विषय :-

इकाई-1

- क. पल्लवन, पत्राचार, अनुवाद, पारिभाषिक शब्दावली एवं हिंदी में पदनाम
ख. ईदगाह (कहानी) - मुंशी प्रेमचंद

इकाई-2

- क. शब्द शुद्धि, वाक्य शुद्धि, शब्द ज्ञान-पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द एवं मुहावरे-लोकोक्तियाँ
ख. भारत वंदना (कविता)- सूर्यकान्त त्रिपाठी निराला

इकाई-3

- क. देवनागरी लिपि - नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषताएँ, हिंदी अपठित गद्यांश, संक्षेपण, हिंदी में संक्षिप्तीकरण
ख. भोलाराम का जीव (व्यंग्य) - हरिशंकर परसाई

इकाई-4

- क. कम्प्यूटर का परिचय एवं कम्प्यूटर में हिंदी का अनुप्रयोग
ख. शिकागो से स्वामी विवेकानंद का पत्र

} professional
Ethics

इकाई-5

- क. मानक हिन्दी भाषा का अर्थ, स्वरूप, विशेषताएँ, मानक, उपमानक, अमानक भाषा
ख. सामाजिक गतिशीलता - प्राचीन काल, मध्यकाल, आधुनिक काल

मूल्यांकन योजना :-

प्रत्येक इकाई से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 8 एवं 7 होंगे। प्रश्न-पत्र का पूर्णांक 75 निर्धारित है।

FOUNDATION COURSE
PAPER - II
ENGLISH LANGUAGE
(Paper code - 0792)

M.M. 75

Professional Ethics
UNIT-1 Basic Language skills : Grammar and Usage.

Grammar and Vocabulary based on the prescribed text.
To be assessed by objective / multiple choice tests.

(Grammar - 20 Marks
Vocabulary - 15 Marks)
05

UNIT-2 Comprehension of an unseen passage.

This should simply not only (a) an understanding of the passage in question, but also.

(b) a grasp of general language skills and issues with reference to words and usage within the passage and (c) the Power of short independent composition based on themes and issues raised in the passage.

To be assessed by both objective multiple choice and short answer type tests.

UNIT-3 Composition : Paragraph writing

10

UNIT-4 Letter writing (The formal and one Informal)

10

Two letters to be attempted of 5 marks each. One formal and one informal.

UNIT-5 Texts :

15

Professional Ethics
Short prose pieces (Fiction and not fiction) short poems, the pieces should cover a range of authors, subjects and contexts. With poetry if may sometimes be advisable to include pieces from earlier periods, which are often simpler than modern examples. In all cases, the language should be accessible (with a minimum of explanation and reference to standard dictionaries) to the general body of students schooled in the medium of an Indian language.

Students should be able to grasp the contents of each piece ; explain specific words, phrases and allusions; and comment on general points of narrative or argument. Formal Principles of Literary criticism should not be taken up at this stage.

To be assessed by five short answers of three marks each.

BOOKS PRESCRIBED -

English Language and Indian Culture - Published by M.P. Hindi Grant Academy Bhopal.

Dr. M. C. Chakraborty

Dr. S. Gupta

DR. MERILY ROY

Session 2019-20

PHYSICS

B.Sc. Part-I
Paper-I

Professional Ethics

MECHANICS, OSCILLATIONS AND PROPERTIES OF MATTER
(Paper code 0793)

Unit-1 Cartesian, Cylindrical and Spherical coordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications. Motion under a central force, Kepler's laws. Effect of Centrifugal and Coriolis forces due to earth's rotation, Center of mass (C.M.), Lab and C.M. frame of reference, motion of C.M. of system of particles subject to external forces, elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference, Conservation of linear and angular momentum, Conservation of energy.

Unit-2 Rigid body motion, rotational motion, moments of inertia and their products, principal moments & axes, introductory idea of Euler's equations. Potential well and Periodic Oscillations, case of harmonic small oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations: spring and mass system, simple and compound pendulum, torsional pendulum.

Unit-3 Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, damped harmonic oscillator, case of different frequencies. Power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance.

Unit-4 E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as deflecting field- CRO sensitivity, Transverse B field, 180° deflection, mass spectrograph, curvatures of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields: velocity selector, its resolution. Parallel E and B fields, positive ray parabolas, discovery of isotopes, elements of mass spectrography, principle of magnetic focusing lens.

Unit-5 Elasticity: Strain and stress, elastic limit, Hooke's law, Modulus of rigidity, Poisson's ratio, Bulk modulus, relation connecting different elastic constants, twisting couple of a cylinder (solid and hollow), Bending moment, Cantilever, Young modulus by bending of beam.

Viscosity: Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation, Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law, Coefficient of viscosity, Stoke's law, Surface tension and molecular interpretation of surface tension, Surface energy, Angle of contact, wetting.

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Session 2019-20

PHYSICS

Paper-II

ELECTRICITY, MAGNETISM AND ELECTROMAGNETIC THEORY

professional ethics

Unit-1 Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field, and their geometrical interpretation, line, surface and volume integrals, flux of a vector field. Gauss's divergence theorem, Green's theorem and Stoke's theorem and their physical significance. Kirchoff's law, Ideal Constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem, Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem.

Unit-2 Coulomb's law in vacuum expressed in Vector forms, calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in a electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Relation between Electric potential and Electric field, torque on a dipole in a uniform electric field and its energy, flux of the electric field.

Gauss's law and its application: E due to (1) an Infinite Line of Charge, (2) a Charged Cylindrical Conductor, (3) an Infinite Sheet of Charge and Two Parallel Charged Sheets, capacitors, electrostatic field energy, force per unit area of the surface of a conductor in an electric field, conducting sphere in a uniform electric field.

Unit-3 Dielectric constant, Polar and Non Polar dielectrics, Dielectrics and Gauss's Law, Dielectric Polarization, Electric Polarization vector P, Electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity, Polarizability and mechanism of Polarization, Lorentz local field, Clausius Mossotti equation, Debye equation,

Ferroelectric and Paraelectric dielectrics, Steady current, current density J, non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits, complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor.

Unit-4 Magnetization Current and magnetization vector M, three magnetic vectors and their relationship, Magnetic permeability and susceptibility, Diamagnetic, paramagnetic and ferromagnetic substances. B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss.

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Biot-Savart's Law and its applications: B due to (1) a Straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole). Ampere's Circuital law (Integral and Differential Forms).

Unit-5 Electromagnetic induction, Faraday's law, electromotive force, integral and differential forms of Faraday's law Mutual and self inductance, Transformers, energy in a static magnetic field. Maxwell's displacement current, Maxwell's equations, electromagnetic field energy density. The wave equation satisfied by E and B , plane electromagnetic waves in vacuum, Poynting's vector.

TEXT AND REFERENCE BOOKS:

1. Berkeley Physics Course, Electricity and Magnetism, Ed. E.M. Purcell (Mc Graw - Hill).
2. Halliday and Resnik, Physics, Vol. 2.
3. D J Griffith, Introduction to Electrodynamics (Prentice-Hall of India).
4. Raitz and Milford, Electricity and Magnetism (Addison-Wesley).
5. A S Mahajan and A A Rangwala, Electricity and Magnetism (Tata Mc Graw-hill).
6. A M Portis, Electromagnetic fields.
7. Pugh & Pugh, Principles of Electricity and Magnetism (Addison-Wesley).
8. Panofsky and Phillips, Classical Electricity and Magnetism, (India Book House).
9. S S Atwood, Electricity and Magnetism (Dover).

M. J. B.

P. S. M.

Q. S. H.
J. M.

Environment studies

B.Sc.-I (BOTANY) PAPER -II

(BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALAEOBOTANY)

UNIT -I

BRYOPHYTA: General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in *Riccia*, *Marchantia*, *Pellia*, *Anthoceros*, *Funaria*. Vegetative reproduction in Bryophytes, Evolution of sporophytes.

UNIT-II

PTERIDOPHYTES: General characteristics, affinities, economic importance and classification, Heterospory and seed habit, stellar system in Pteridophytes, Aposory and apogamy, Telome theory, *Azolla* as Biofertilizer.

UNIT-III

Systematic position, occurrence. Morphology, anatomy and reproductive structure of *Psilotum*, *Lycopodium*, *selaginella*, *Equisetum*, *Marsilea*.

UNIT-IV

Gymnosperm: General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in *Cycas*, *Pinus* and *Ephedra*.

UNIT-V

PALAEOBOTANY: Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms: *Lygenopteris*

Books Recommended:

- Parihar, N.S. *The Biology and Morphology of Pteridophytes*, Central Book Depot, Allahabad.
Parihar, N.S. *An introduction to Bryophyta Vol.I: Bryophytes* Central Book Depot, Allahabad.
Sambamurty, AVSS, *A textbook of Bryophytes, Pteridophytes, Gymnosperms and Palaeobotany*, IK International Publishers.

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MATHEMATICS

There shall be three compulsory papers. Each paper of 50 marks is divided into five units and each unit carry equal marks.

B.Sc. Part-I MATHEMATICS

PAPER - I ALGEBRA AND TRIGONOMETRY

professional

Ethics

- UNIT-I** Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, eigenvectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.
- UNIT-II** Application of matrices to a system of linear (both homogeneous and nonhomogeneous) equations. Theorems on consistency of a system of linear equations. Relation between the roots and coefficients of general polynomial equations in one variable. Transformation of equations. Descartes's rule of signs. Solutions of cubic equations (Cardan's method), Biquadratic equation.
- UNIT-III** Mappings, Equivalence relations and partitions. Congruence modulo n . Definition of a group with examples and simple properties. Subgroups, generation of groups, cyclic groups, coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems. Normal subgroups. Quotient group, Permutation groups. Even and odd permutations. The alternating groups A_n . Cayley's theorem.
- UNIT-IV** Homomorphism and Isomorphism of groups. The fundamental theorems of homomorphism. Introduction, properties and examples of rings, Subrings, Integral domain and fields Characteristic of a ring and Field.
- TRIGONOMETRY :**
- UNIT-V** De-Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of trigonometrical functions. Gregory's series. Summation of series.

TEXT BOOK :

1. I.N. Herstein, Topics in Algebra, Wiley Eastern Ltd., New Delhi, 1975
2. K.B. Datta, Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd. New Delhi, 2000.
3. Chandrika Prasad, Text-Book on Algebra and Theory of equations, Pothishala Private Ltd., Allahabad.
4. S.L. Loney, Plane Trigonometry Part II, Macmillan and Company, London.

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B.Sc. Part-I
MATHEMATICS
PAPER - II
CALCULUS

*Professional
ethics*

DIFFERENTIAL CALCULUS :

- UNIT-I** $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of discontinuities. Differentiability. Successive differentiation. Leibnitz theorem. Maclaurin and Taylor series expansions.
- UNIT-II** Asymptotes. Curvature. Tests for concavity and convexity. Points of inflexion. Multiple points. Tracing of curves in cartesian and polar coordinates.

INTEGRAL CALCULUS:

- UNIT-III** Integration of transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.

ORDINARY DIFFERENTIAL EQUATIONS :

- UNIT-IV** Degree and order of a differential equation. Equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x , y , p . Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.
- UNIT-V** Linear differential equations of second order. Transformation of the equation by changing the dependent variable/the independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.

TEXT BOOK :

1. Gorakh Prasad, Differential Calculus, Pothishala Private Ltd. Allahabad.
2. Gorakh Prasad, Integral Calculus, Pothishala Private Ltd. Allahabad.
3. D.A. Murray Introductory Course in Differential Equations, Orient Longman (India), 1976.

REFERENCES :

1. Gabriel Klambauer, Mathematical Analysis, Marcel Dekkar, Inc. New York, 1975.
2. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum's outline series, Schaum Publishing Co. New York.
3. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
4. P.K. Jain and S.K. Kaushik, An Introduction to Real Analysis, S. Chand & Co. New Delhi, 2000.
5. G.F. Simmons, Differential Equations, Tata Mc Graw Hill, 1972.
6. E.A. Codington, An Introduction to Ordinary Differential Equations, Prentics Hall of India, 1961.
7. H.T.H. Piaggio, Elementary Treatise on Differential Equations and their Applications, C.B.S. Publishe & Distributors, Dehli, 1985.
8. W.E. Boyce and P.O. Diprima, Elementary Differential Equations and Boundary Value Problems, John Wiley, 1986.
12. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley and Sons, 1999.

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B.Sc. Part-I
MATHEMATICS
PAPER - III
VECTOR ANALYSIS AND GEOMETRY

*Professional
ethics*

VECTOR ANALYSIS :

- UNIT-I** Scalar and vector product of three vectors. Product of four vectors. Reciprocal Vectors. Vector differentiation. Gradient, divergence and curl.
- UNIT-II** Vector integration. Theorems of Gauss, Green, Stokes and problems based on these.
- UNIT-III** General equation of second degree. Tracing of conics. System of conics. Confocal conics. Polar equation of a conic.
- UNIT-IV** Sphere. Cone. Cylinder.
- UNIT-V** Central Conicoids. Paraboloids. Plane sections of conicoids. Generating lines. Confocal Conicoids. Reduction of second degree equations.

TEXT BOOKS :

1. N. Saran and S.N. Nigam, Introduction to vector Analysis, Pothishala Pvt. Ltd. Allahabad.
2. Gorakh Prasad and H.C. Gupta, Text Book on Coordinate Geometry, Pothishala Pvt. Ltd., Allahabad.
3. R.J.T. Bell, Elementary Treatise on Coordinate Geometry of three dimensions, Machmillan India Ltd. 1994.

REFERENCES :

1. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Company, New York.
2. Murray R. Spiegel, Vector Analysis, Schaum Publishing Company, New York.
3. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons, 1999.
4. Shanti Narayan, A Text Book of Vector Calculus, S. Chand & Co., New Delhi.
5. S.L. Loney, The Elements of Coordinate Geometry, Macmillan and Company, London.
6. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of two Dimensions, Wiley Eastern Ltd., 1994.
7. P.K. Jain and Khalil Ahmad, A Text Book of Analytical Geometry of three Dimensions, Wiley Eastern Ltd., 1999.
8. N. Saran and R.S. Gupta, Analytical Geometry of three Dimensions, Pothishala Pvt. Ltd. Allahabad.

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B. SC. PART - I
COMPUTER SCIENCE
PAPER - I
COMPUTER FUNDAMENTALS
PAPER CODE - 0805

MAX MARKS - 50

Note:- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

Professional

UNIT-I CLASSIFICATION AND ORGANISATION OF COMPUTERS

ethics

History of computer, Generation of computer, calculator vs computer. Digital and Analogue computers and its evolution. Major components of digital computers, Memory addressing capability of CPU. Word length and processing speed of computers, Microprocessors, Single chip Microcomputer, Large and small computers, Users interface, hardware, software and firmware, multiprogramming multiuser system, Dumb smart and intelligent terminals, computers Network and multiprocessing LAN parallel processing, Finn's classification of computers control flow and data flow computers.

UNIT-II CENTRAL PROCESSING UNIT

Parts of CPU-ALU control unit, Registers; Architecture of Intel 8085 microprocessor, Instruction for Intel 8085 microprocessor, Instruction Word size, Various addressing mode, Interrupts some special control signals, Instruction cycle fetch and execute operation, Timing Diagram, Instruction flow and data flow.

UNIT-III MEMORY

Memory hierarchy, Primary and Secondary Memory, Cache memory, Virtual Memory, Direct Access storage devices (DASD) Destructive and Non-destructive Readout, Program and data memory, Memory Management Unit (MMU) PCMCIA cards and Slots.

UNIT-IV I/O DEVICE

I/O devices-KeyBoard, Mouse, Monitor, Impact and Non-Impact Printers, Plotters, Scanner, other Input/output devices: Scan method of Display, Raster Scan, Vector Scan, Bit Mapped Scan, CRT Controller, I/O Port, Programmable and Non Programmable I/O port, Inbuilt I/O ports, Parallel and Serial ports, USB, IEEE 1394, AGP, Serial data transfer scheme, Microcontroller, Signal Processor, I/O processor, Arithmetic Processor.

UNIT-V SOFTWARE AND PROGRAMMING TECHNIQUES

Application and System Software: Introduction, Example, Difference etc. Introduction to Open Source Software such as Unix/Linux (Ubuntu), Liber office etc. Introduction to Machine Language Assembly Language and High Level Language; Programming Techniques, Stack Subroutine, Debugging of programs, Macro Program Design Software Development, Flow Chart, Multiprogramming, Multiuser, Multitasking Protection, Operating system and Utility programs Application packages

Alhama
19/10/19

P. R.
19/10/19

M. S.
19/10/19

K. D. D. D.
19/10/19

H. S.
19/10/19

G. S.
19/10/19

B. SC. PART - I
COMPUTER SCIENCE
PAPER - II
PROGRAMMING IN C LANGUAGE
PAPER CODE - 0806

MAX MARKS - 50

Note :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

Professional ethics

UNIT-I

Fundamentals of C Programming - Overview of C : History of 'C', Structure of 'C' program. Keywords, Tokens, Datatypes, Constants, Literals and Variables, Operators and Expressions: Arithmetic operators, Relational operator, Logical operators, Expressions, Operator: operator precedence and associativity, Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar(), getche(), getc(), putc(), putchar().

UNIT-II

Control Constructs: If-else, conditional operators, switch and break, nested conditional branching statements, loops: For, do.while, while, for, Nested loops, break and continue, goto and label, exit function.

Functions:-Definition, function components: Function arguments, return value, function call statement, function prototype. Type of function Scope and lifetime of variable. Call by value and call by reference. Function using arrays, function with command line argument. User defined function: maths and character functions, Recursive function.

UNIT-III

Array:-Array declaration, one and two dimensional numeric and character arrays. Multidimensional arrays.

String:-String declaration, initialization, and string manipulation with/without using library function.

Structure, Union & Enum- Structure: Basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure; passing structure to function, function returning structure. **Union:** basics, declaring union and union variable, **Enum:** declaring enum and enum variable.

UNIT-IV

Pointers: Definition of pointers, Pointer declaration, Using & and * operators. Void pointer, Pointer to pointer, Pointer in math expression, Pointer arithmetic, Pointer comparison, Dynamic memory allocation functions—malloc, calloc, realloc and free, Pointers vs. Arrays, Arrays of pointer, pointer to array, Pointers to functions, Function returning pointer, Passing function as Argument to function, Pointer to structure, Dynamic array of structure through pointer to structure.

UNIT-V

File Handling and Miscellaneous Features-File handling: file pointer, File accessing functions, :fopen, fclose, fputc, fgetc, sprintf, fscanf, fread, fwrite, eof, fflush, rewind, fseek, ferror. File handling through command line argument. Introduction to C preprocess or #include, #define, conditional compilation directives: #if, #else, #elif, #endif, #ifndef etc.

abnana
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P.L.
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K. D. Dubey
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P. S. S.
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Professional
Ethics

INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	General Microbiology, Tools and Techniques	3 hrs.	50
Second	Molecular Biology, Biochemistry and Microbial Genetics	3 hrs.	50
	PRACTICAL (including sessionals)	4 hrs.	50 (40+10)

PAPER -

GENERAL MICROBIOLOGY, TOOLS AND TECHNIQUES

M.M.50

I (paper code - 0826)

- UNIT-1** History and development of Industrial Microbiology. Contributions of Antony von Leeuwenhoek, Louis Pasteur, Robert Koch, Edward Jenner, Wakman, Alexander Fleming.
- UNIT-2** General characteristics and structure of Bacteria, Cyanobacteria, Fungi, Actinomycetes, Mycoplasmas, Viruses.
- UNIT-3** Microscopy - Invention of Microscope, Compound microscope, Dark field, Fluorescent, Phase contrast and Electron microscope.
- UNIT-4** Method of sterilization, culture media and isolation techniques. Methods of preservation of microbial cultures.
- UNIT-5** Basic principles and usage - pH meter, Densitometer, Colorimeter, Spectrophotometry, Fluorimetry, Centrifugation - Principles and applications. Usage of Fermentation.

PRACTICALS

The Practical works will, in general be based on the prescribed syllabus in theory and the candidates will be required to show the knowledge of the following :

1. Preparation of media, autoclaving and sterilization of glassware.
2. Isolation of Phytopathogens.
3. Isolation of Microorganisms from soil and water : Bacteria, Fungi, and Algae.
4. Purification of microbial cultures.
5. Camera Lucida Drawing.
6. Standard Plate count.
7. Haemocytometer.
8. Chromatographic techniques : Separation of amino acids by paper and thin layer chromatography.
9. Measurement of pH of fruit juice.
10. Estimation of carbohydrate by colorimeter.

BOOK RECOMMENDED :

1. General Microbiology, Vol. II by Power and Dagainawala.
2. Microbiology by Pelczar, Reid and Chan.
3. General Microbiology by Davis and Harper.
4. A Treatise on Media and Methods Used in Bacteriological Techniques by V. Iswari.
5. Introductory Mycology by C.J. Alexopoulos & Mims.
6. Microbiology by P.D. Sharma.

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Professional Ethics

PAPER - II MOLECULAR BIOLOGY, BIOCHEMISTRY AND MICROBIAL GENETICS (paper code - 0827)

M.M. 50

UNIT-1 Nucleic Acids - Structure of DNA and RNA(s), Replication of DNA, Synthesis of RNAs and their types, Genetic code, Concept of genes.

UNIT-2 Molecular Biology - Translation and Protein Synthesis, Operon Concept, CAMP CAP (Catabolic activator protein), Gene expression in Prokaryotes, Lac-Operon. Gene regulation in Eukaryotes (Britton-Davison Model of Gene Expression).

UNIT-3 Genetic recombination in Bacteria - Transformation, Transduction and conjugation, Genetic Mapping, Extrachromosomal genetic material, Plasmids, Cosmids, Transposons, Overlapping genes, Silent genes and their evolutionary significance. Mutation -Molecular mechanism of mutation, Chemical and Physical Mutagens, Repair of Mutation Damage.

UNIT-4 Biochemistry - Classification of carbohydrates, Chemical structure and property of starch, Cellulose, Glycogen, Synthesis of Purines & Pyrimidine. Lipids - Saturated and unsaturated fatty acids, Biosynthesis of fatty acids, Distribution and functions of lipids in microorganisms, Degradation of lipids by α -oxidation and Co oxidation, Lipid peroxidation.

UNIT-5 Enzymes - Classification. Co-enzymes, Cofactors, Mechanism of enzyme action, Competitive and non-competitive inhibition. Allosteric regulations of enzymes, isoenzymes, factors contributing to catalytic efficiency of enzymes.

Amino acids - Classification of essential amino acids based on polarity. Acid-base properties and solubilities. Amino acid sequencing of proteins; Primary, Secondary and Tertiary structure.

PRACTICAL

The Practical work will, in general, be based on the syllabus prescribed in theory and the candidates will be required to show the knowledge of the following -

1. Isolation of antibiotic resistant bacteria.
2. Estimation of alkaline phosphatase activity.
3. Measurement of α -amylase activity in extra-cellular fraction of microbial cultures.
4. Estimation of glycogen in bacterial cells.
5. Measurement of cellulase activity by Viscometric technique.
6. Determination of cellulase and amylase activity by reducing sugar assay test.
7. Isolation of DNA.

DAJ 21/7/12
D. S. 22/7/12

II yr. BSc.



हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

ई मेल : academic@durguniversity.ac.in

वेब साइट : www.durguniversity.ac.in

दूरभाष : 0788-2359400

दुर्ग, दिनांक 10/9/2020

क्र. 2960/A /अका./2020

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर भाग-दो के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

—00—

विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-दो के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2020-21 से लागू किये जाते हैं:-

1. बी.ए. - आधार पाठ्यक्रम-हिन्दी भाषा, हिन्दी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, मानवविज्ञान, संस्कृत, सांख्यिकी प्राचीन भारतीय इतिहास, भूगोल, मनोविज्ञान
2. बी.एस-सी.- आधार पाठ्यक्रम-हिन्दी भाषा, जीव विज्ञान, मानवविज्ञान, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, गणित, भौतिक शास्त्र, प्राणीशास्त्र, सूक्ष्मजीव विज्ञान, वनस्पतिशास्त्र, भूविज्ञान, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3. बी.ए./बी.एस.सी.(गृह विज्ञान) - आधार पाठ्यक्रम - हिन्दी भाषा एवं गृह विज्ञान।

उपरोक्त विषयों को शिक्षा सत्र 2020-21 से संशोधित रूप में स्नातक स्तर भाग-दो के लिए लागू किया जाता है स्नातक स्तर भाग-एक हेतु सत्र 2019-20 में लागू पाठ्यक्रम मान्य होंगे एवं भाग - तीन के पाठ्यक्रम यथावत रहेंगे।

टीप:- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय के परीक्षा विभाग एवं वेबसाइट पर प्रकाशित करने हेतु वेबसाइट प्रभारी को उपलब्ध करा दी गई है।

कुलसचिव

क्र. 2961/A /अका./2020
प्रतिलिपि:-

दुर्ग, दिनांक 10/9/2020

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 परिपेक्ष्य में सूचनार्थ।
2. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।

सहा. कुलसचिव (अका.)

REVISED ORDINANCE NO. 21
BACHELOR OF SCIENCE

1. The three year course has been broken up into three Parts. Part-I known as B.Sc. Part-I examination at the end of the first year, Part-II known as B.Sc. Part-II examination at the end of the second year and Part-III known as B.Sc. Part-III examination at the end of the third year.
2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of C.G. Board of Secondary Education Bhopal or any other Examination recognised by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated College or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.Sc. Part-I examination.
3. A candidate who, after passing the B.Sc.-I examination of the University or any other examination recognised by the University as equivalent thereto, has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-II examination.
4. A candidate who, after passing the B.Sc. Part-II examination of the University, has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-III examination.
5. Besides regular students, subject to their compliance with this Ordinance ex-student and non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular student at any of the University Teaching Department or College.
6. Every candidate appearing in B.Sc. Part-I, Part-II and Part-III examination shall be examined in-
 - (i) Foundation Course:
 - (ii) Any one of the following combinations of three subjects:-
 1. Physics, Chemistry & Mathematics.
 2. Chemistry, Botany & Zoology.
 3. Chemistry, Physics & Geology.
 4. Chemistry, Botany & Geology.
 5. Chemistry, Zoology & Geology.
 6. Geology, Physics & Mathematics.
 7. Chemistry, Mathematics & Geology.
 8. Chemistry, Botany & Defence Studies.
 9. Chemistry, Zoology & Defence Studies.
 10. Physics, Mathematics & Defence Studies.
 11. Chemistry, Geology & Defence Studies.

12. Physics, Mathematics & Statistics
 13. Physics, Chemistry & Statistics
 14. Chemistry, Mathematics & Statistics.
 15. Chemistry, Zoology & Anthropology.
 16. Chemistry, Botany & Anthropology.
 17. Chemistry, Geology & Anthropology.
 18. Chemistry, Mathematics & Statistics.
 19. Chemistry, Anthropology & Defence Studies.
 20. Geology, Mathematics & Statistics.
 21. Mathematics, Defence Studies & Statistics
 22. Anthropology, Mathematics & Statistics
 23. Chemistry, Anthropology & Applied Statistics
 24. Zoology, Botany & Anthropology
 25. Physics, Mathematics & Electronics.
 26. Physics, Mathematics & Computer Application
 27. Chemistry, Mathematics & Computer Application
 28. Chemistry, Bio-Chemistry & Pharmacy
 29. Chemistry, Zoology & Fisheries.
 30. Chemistry, Zoology & Agriculture
 31. Chemistry, Zoology & Sericulture
 32. Chemistry, Botany & Environmental Biology
 33. Chemistry, Botany & Microbiology
 34. Chemistry, Zoology & Microbiology
 35. Chemistry, Industrial Chemistry & Mathematics
 36. Chemistry, Industrial Chemistry & Zoology
 37. Chemistry, Biochemistry, Botany
 38. Chemistry, Biochemistry, Zoology
 39. Chemistry, Biochemistry, Microbiology
 40. Chemistry, Biotechnology, Botany
 41. Chemistry, Biotechnology, Zoology
 42. Geology, Chemistry & Geography
 43. Geology, Mathematics & Geography
 44. Mathematics, Physics & Geography
 45. Chemistry, Botany & Geography
- (iii) Practical in case prescribed for core subjects.

7. Any candidate who has passed the B.Sc. examination of the University shall be allowed to present himself for examination in any of the additional subjects prescribed for the B.Sc. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.Sc. Part-I examination in the subjects which he proposes to offer and then the B.Sc. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

8. In order to pass at any part of the three year degree course examination an examinee must obtain not less than 33% of the total marks in each subject/ group of subjects. In subject/ group of subjects where both theory and practical examination are provided an examinee must pass in both theory and practical parts of the examination separately.
9. Candidate will have to pass separately at the Part-I, Part-II and Part-III examinations. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the division of the final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken in to account. Provided in case of candidate who has passed the examination through supplementary examination having failed in one subject/ group only, the total aggregate marks being carried over for determining the division shall include actual marks obtained in the subject/ group in which he appeared at the supplementary examination.
10. Successful examinee at the Part-III examination obtaining 60% or more marks shall be places in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.

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संशोधित पाठ्यक्रम
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.
भाग - दो, आधार पाठ्यक्रम
प्रश्न पत्र - प्रथम (हिन्दी भाषा) (पेपर कोड - 0171)

पूर्णांक- 75

खण्ड - क निम्नलिखित 5 लेखकों के पाठ शामिल होंगे -

अंक-35

- | | | |
|------------------------|---|--------------------------|
| 1. महात्मा गांधी | - | चोरी और प्रायश्चित |
| 2. आचार्य नरेंद्र देव | - | युवकों का समाज में स्थान |
| 3. वासुदेव शरण अग्रवाल | - | मातृभूमि |
| 4. हरि ठाकुर | - | डॉ. खूबचंद बघेल |
| 5. पं. माधवराव सप्रे | - | सम्भाषण-कुशलता |

खण्ड-ख हिन्दी भाषा और उसके विविध रूप

अंक-16

- | | | |
|------------------------------|---|--------------------------------|
| 1. कार्यालयीन भाषा | } | <i>Professional
Ethics</i> |
| 2. मीडिया की भाषा | | |
| 3. वित्त एवं वाणिज्य की भाषा | | |
| 4. मशीनी भाषा | | |

खण्ड-ग हिन्दी की व्याकरणिक कोटियों

अंक-24

संज्ञा, सर्वनाम, विशेषण, क्रिया विशेषण,
समास, संधि एवं संक्षिप्तियां
अनुवाद व्यवहार : अंग्रेजी से हिन्दी में अनुवाद

इकाई विभाजन-

- | | |
|---------|---|
| इकाई- 1 | चोरी और प्रायश्चित : महात्मा गांधी / कार्यालयीन भाषा, मीडिया की भाषा |
| इकाई- 2 | युवकों का समाज में स्थान : आचार्य नरेन्द्र देव / वित्त एवं वाणिज्य की भाषा, मशीनी भाषा |
| इकाई- 3 | मातृभूमि: वासुदेवशरण अग्रवाल / संज्ञा सर्वनाम, विशेषण, क्रिया विशेषण |
| इकाई- 4 | डॉ. खूबचंद बघेल : हरि ठाकुर/समास, संधि, |
| इकाई- 5 | सम्भाषण-कुशलता : पं. माधवराव सप्रे, / अनुवाद - अंग्रेजी से हिन्दी में अनुवाद, संक्षिप्तियां |

मूल्यांकन योजना -

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक इकाई को दो-दो खण्डों (क्रमशः 'क' और 'ख' में) विभक्त करते हुए निर्धारित पाठ से 8 एवं शेष पाठ्य सामग्री से 7 अंक के प्रश्न होंगे। इस प्रकार पूरे प्रश्न-पत्र के पूर्णांक 75 होंगे।

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Session 2019-20

PHYSICS

B.Sc. Part-II
Paper-I

Professional Ethics

THERMODYNAMICS, KINETIC THEORY AND STATISTICAL PHYSICS

Unit-1 The laws of thermodynamics : The Zeroth law, first law of thermodynamics, internal energy as a state function, reversible and irreversible change, Carnot's cycle, Carnot theorem, second law of thermodynamics. Clausius theorem inequality. Entropy, Change of entropy in simple cases (i) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Concept of entropy, Entropy of the universe. Entropy change in reversible and irreversible processes, Entropy of Ideal gas, Entropy as a thermodynamic variable, S-T diagram, Principle of increase of entropy. The thermodynamic scale of temperature, Third law of thermodynamics, Concept of negative temperature.

Unit-2 Thermodynamic functions, Internal energy, Enthalpy, Helmholtz function and Gibb's free energy, Maxwell's thermodynamical equations and their applications, TdS equations, Energy and heat capacity equations Application of Maxwell's equation in Joule-Thomson cooling, adiabatic cooling of a system, Van der Waals gas, Clausius-Clapeyron heat equation. Blackbody spectrum, Stefan-Boltzmann law, Wien's displacement law, Rayleigh-Jean's law, Planck's quantum theory of radiation.

Unit-3 Maxwellian distribution of speeds in an ideal gas: Distribution of speeds and velocities, experimental verification, distinction between mean, rms and most probable speed values. Doppler broadening of spectral lines. Transport phenomena in gases: Molecular collisions mean free path and collision cross sections. Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure.
Behaviour of Real Gases: Deviations from the Ideal Gas Equation. The Virial Equation. Andrew's Experiments on CO₂ Gas. Critical Constants.

Unit-4 The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibb's ensemble, accessible and inaccessible states. Concept of phase space, γ phase space and μ phase space. Equilibrium between two systems in thermal contact, probability and entropy, Boltzmann entropy relation. Boltzmann canonical distribution law and its applications, law of equipartition of energy.

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Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one-dimensional box and one-dimensional harmonic oscillator.

Unit-5 Indistinguishability of particles and its consequences, Bose-Einstein & Fermi-Dirac conditions, Concept of partition function, Derivation of Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac Statistics, Limits of B-E and F-D statistics to M-B statistics. Application of B-E statistics to black body radiation, Application of F-D statistics to free electrons in a metal.

TEXT AND REFERENCE BOOKS:

1. B.B. Laud, "Introduction to Statistical Mechanics" (Memillan 1981)
2. F. Reif: "Statistical Physics" (Mcgraw-Hill, 1998).
3. K, Haug : "Statistical Physics" (Wiley Eastern, 1988).
4. Thermal and statistical Physics: R.K. Singh, Y.M. Gupta and S. Sivraman.
5. Statistical Physics: Berkeley Physics Course, Vol. 5
6. Physics (Part-2): Editor, Prof. B.P. Chandra, M.P. Hindi Granth Academy.
7. Heat and Thermodynamics: K.W. Zeemansky.
8. Thermal Physics: B.K. Agarwal.
9. Heat and Thermodynamics: Brij Lal and N. Subramanyam.
10. Heat and Thermodynamics: Dayal, Verma and Pandey.
11. A Treatise on Heat: M.N. Saha and B.N. Srivastava.

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Session 2019-20

PHYSICS

Paper-II

WAVES, ACOUSTICS AND OPTICS

Professional
Ethics

Unit-1 Waves in media: Speed of transverse waves on uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves. Waves over liquid surface: gravity waves and ripples. Group velocity and phase velocity and relationship between them. Production and detection of ultrasonic and infrasonic waves and applications.

Reflection, refraction and diffraction of sound : Acoustic impedance of a medium, percentage reflection & refraction at a boundary, impedance matching for transducers, diffraction of sound, principle of a sonar system, sound ranging.

Unit-2 Fermat's Principle of extremum path, the aplanatic points of a sphere and other applications. Cardinal points of an optical system, thick lens and lens combinations. Lagrange equation of magnification, telescopic combinations, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates, aplanatic points, oil immersion objectives, meniscus lens. Optical instruments: Entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces. (Ramsdon and Hygen's eyepieces).

Unit-3 Interference of light: The principle of superpositions, two slit interference, coherence requirement for the sources, optical path retardations, Conditions for sustained interference, Theory of interference, Thin films. Newton's rings and Michelson interferometer and their applications, its application for precision determinations of wavelength, wavelength difference and the width of spectral lines. Multiple beam interference in parallel film and Fabry-Perot interferometer. Rayleigh refractometer, Twyman-Green interferometer and its uses.

Unit-4 Diffraction, Types of Diffraction, Fresnel's diffraction, half-period zones, phasor diagram and integral calculus methods, the intensity distribution, Zone plates, diffraction due to straight edge, Fraunhofer diffraction due to a single slit and double slit, Diffraction at N-Parallel slit, Plane Diffraction grating, Rayleigh criterion, resolving power of grating, Prism, telescope.

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Polarized light and its mathematical representation, Production of polarized light by reflection, refraction and scattering, Polarization by double refraction and Huygen's theory, Nicol prism, Retardation plates, Production and analysis of circularly and elliptically polarized light. Optical activity and Fresnel's theory, Biquartz polarimeter.

Unit-5 Laser system: Basic properties of Lasers, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion, Types of Laser : Ruby and He-Ne laser and Applications of laser : Application in communication, Holography and Basics of non linear optics and Generation of Harmonic.

TEXT AND REFERENCE BOOKS:

1. A.K. Ghatak, 'Physical Optics'
2. D.P. Khandelwal, 'Optical and Atomic Physics' (Himalaya Publishing House, Bombay, 1988)
3. K.D. Moltev; 'Optics' (Oxford University Press)
4. Sears: 'Optics'
5. Jenkins and White: 'Fundamental of Optics' (McGraw-Hill)
6. B.B. Laud: 'Lasers and Non-linear Optics' (Wiley Eastern 1985)
7. Smith and Thomson: 'Optics' (John Wiley and Sons)
8. Berkely Physics Courses: Vol.-III, 'Waves and Oscillations'
9. I.G. Main, 'Vibrations and Waves' (Cambridge University Press)
10. H.J. Pain: 'The Physics of Vibrations and Waves' (MacMillan 1975)
11. Text Book of Optics: B.K. Mathur
12. B.Sc. (Part III) Physics: Editor: B.P. Chandra, M.P. Hindi Granth Academy.
13. F. Smith and J.H. Thomson, Manchester Physics series: optics (John wiley, 1971)
14. Born and Wolf: 'Optics'.
15. Physical Optics: B. K. Mathur and T. P. Pandya.
16. A textbook of Optics: N. Subrahmanyam, Brijlal and M. N. Avadhani.
17. Geometrical and Physical Optics: Longhurst.
18. Introduction to Modern Optics: G. R. Fowels.
19. Optics: P. K. Srivastav.

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MATHEMATICS

There shall be three compulsory papers. Each paper of 50 marks is divided into five units and each unit carry equal marks.

B.Sc. Part-II Paper-I ADVANCED CALCULUS

Professional

- UNIT-I Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion. Series of non-negative terms. Comparison tests, Cauchy's integral test, Ratio tests, Raabe's, Logarithmic, De Morgan and Bertrand's tests. Alternating series, Leibnitz's theorem. Absolute and conditional convergence.
- UNIT-II Continuity, Sequential continuity, Properties of continuous functions, Uniform continuity, Chain rule of differentiability, Mean value theorems and their geometrical interpretations. Darboux's intermediate value theorem for derivatives, Taylor's theorem with various forms of remainders.
- UNIT-III Limit and continuity of functions of two variables. Partial differentiation. Change of variables. Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables. Jacobians.
- UNIT-IV Envelopes, evolutes. Maxima, minima and saddle points of functions of two variables. Lagrange's multiplier method.
- UNIT-V Beta and Gamma functions, Double and triple integrals, Dirichlet's integrals, Change of order of integration in double integrals.

REFERENCES :

1. Gabriel Klaumber, Mathematical Analysis, Marcel Dekkar, Inc. New York, 1975.
2. T.M. Apostol, Mathematical Analysis, Narosa Publishing House, New Delhi, 1985.
3. R.R. Goldberg, Real Analysis, Oxford & I.B.H. Publishing Co., New Delhi, 1970.
4. D. Soma Sundaram and B. Choudhary, A First Course in Mathematical Analysis, Narosa Publishing House, New Delhi, 1997.
5. P.K. Jain and S.K. Kaushik, An introduction to Real Analysis, S. Chand & Co., New Delhi, 2000.
6. Gorakh Prasad, Differential Calculus, Pothishala Pvt. Ltd., Allahabad.
7. Murray R. Spiegel, Theory and Problems of Advanced Calculus, Schaum Publishing Co., New York.
8. Gorakh Prasad, Integral Calculus, Pothishala Pvt. Ltd., Allahabad.
9. S.C. Malik, Mathematical Analysis, Wiley Eastern Ltd., New Delhi.
10. O.E. Stanaitis, An Introduction to Sequences, Series and Improper Integrals, Holden-Dey, Inc., San Francisco, California.
11. Earl D. Rainville, Infinite Series, The Macmillan Company, New York.
12. Chandrika Prasad, Text Book on Algebra and Theory of Equations, Pothishala Pvt. Ltd., Allahabad.
13. N. Piskunov, Differential and Integral Calculus, Peace Publishers, Moscow.
14. Shanti Narayan, A Course of Mathematical Analysis, S.Chand and Company, New Delhi.

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20/5/19

B.Sc. Part-II
Paper-II
DIFFERENTIAL EQUATIONS

Professional

- UNIT-I Series solutions of differential equations- Power series method, Bessel and Legendre functions and their properties-convergence, recurrence and generating relations, Orthogonality of functions, Sturm-Liouville problem, Orthogonality of eigen-functions, Reality of eigen values, Orthogonality of Bessel functions and Legendre polynomials.
- UNIT-II Laplace Transformation- Linearity of the Laplace transformation, Existence theorem for Laplace transforms, Laplace transforms of derivatives and integrals, Shifting theorems. Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
- UNIT-III Partial differential equations of the first order. Lagrange's solution, Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
- UNIT-IV Partial differential equations of second and higher orders, Classification of linear partial differential equations of second order, Homogeneous and non-homogeneous equations with constant coefficients, Partial differential equations reducible to equations with constant coefficients, Monge's methods.
- UNIT-V Calculus of Variations- Variational problems with fixed boundaries- Euler's equation for functionals containing first order derivative and one independent variable, Extremals, Functionals dependent on higher order derivatives, Functionals dependent on more than one independent variable, Variational problems in parametric form, invariance of Euler's equation under coordinates transformation.
- Variational Problems with Moving Boundaries- Functionals dependent on one and two functions, One sided variations.
- Sufficient conditions for an Extremum- Jacobi and Legendre conditions, Second Variation. Variational principle of least action.

REFERENCES :

1. Erwin Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons, Inc., New York, 1999.
2. D.A. Murray, Introductory Course on Differential Equations, Orient Longman, (India), 1967.
3. A.R. Forsyth, A Treatise on Differential Equations, Macmillan and Co. Ltd., London.
4. Lan N. Sneddon, Elements of Partial Differential Equations, McGraw-Hill Book Company, 1988.
5. Francis B. Hilderbrand, Advanced Calculus for Applications, Prentice Hall of India Pvt. Ltd., New Delhi, 1977.
6. Jane Cronin, Differential equations, Marcel Dekkar, 1994.
7. Frank Ayres, Theory and Problems of Differential Equations, McGraw-Hill Book Company, 1972.
8. Richard Bronson, Theory and Problems of Differential Equations, McGraw-Hill, Inc., 1973.
9. A.S. Gupta, Calculus of variations with-Applications, Prentice-Hall of India, 1997.
10. R. Courant and D. Hilbert, Methods of Mathematical Physics, Vols. I & II, Wiley-Interscience, 1953.
11. I.M. Gelfand and S.V. Fomin, Calculus of Variations, Prentice-Hill, Englewood Cliffs (New Jersey), 1963.
12. A.M. Arthurs, Complementary Variational Principles, Clarendon Press, Oxford, 1970.
13. V. Kornkov, Variational Principles of Continuum Mechanics with Engineering Applications, Vol. I, Reidel Publ. : Dordrecht, Holland, 1985.
14. T. Oden and J.N. Reddy, Variational Methods in Theoretical Mechanics, Springer-Verlag, 1976.

Reddy

19/10/19

B.Sc. Part-II
Paper-III
MECHANICS

Professional

STATICS

- UNIT-I Analytical conditions of Equilibrium, Stable and unstable equilibrium. Virtual work, Catenary.
UNIT-II Forces in three dimensions, Poinso's central axis, Null lines and planes.

DYNAMICS

- UNIT-III Simple harmonic motion. Elastic strings. Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.
UNIT-IV Kepler's laws of motion, velocities and acceleration in tangential and normal directions, motion on smooth and rough plane curves.
UNIT-V Motion in a resisting medium, motion of particles of varying mass, motion of a particle in three dimensions, acceleration in terms of different co-ordinate systems.

REFERENCES :

1. S.L. Loney, Statics, Macmillan and Company, London.
2. R.S. Verma, A Text Book on Statics, Pothishala Pvt. Ltd., Allahabad.
3. S.L. Loney, An Elementary Treatise on the Dynamics of a particle and of rigid bodies, Cambridge University Press, 1956.

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B.Sc.-II (BOTANY) PAPER-I

(PLANT TAXONOMY, ECONOMIC BOTANY, PLANT ANATOMY AND EMBRYOLOGY)

UNIT-I

Bentham and Hooker system of classification, Binomial Nomenclature, International Code of Nomenclature for Algae, Fungi, and plants (IUCN), Typification, numerical Taxonomy and chemotaxonomy. Preservation of Plant material and Herbarium techniques. Important botanical gardens and herbaria of India, Kew Botanical garden, England.

UNIT-II

Systematic position, distinguishing characters and economic importance of the following families, Ranunculaceae, Magnoliaceae, Brassicaceae, Rosaceae, Papaveraceae, Caryophyllaceae, Rutaceae, Cucurbitaceae, Apiaceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Malvaceae, Convolvulaceae, Orchidaceae, Acanthaceae, verbenaceae, Lamiaceae, Asteraceae, Fabaceae, Euphorbiaceae, Poaceae and Liliaceae.

UNIT-III

Economic Botany: Botanical name, family, part used and uses of the following economically important plants, fiber yielding plants; Cotton, jute, sun, hemp, coir. Timber yielding plants: Sal, Teak, Shisham and Pine. Medicinal plants: Kalmegh, Ashwagandha, Ghritkumari, Giloy, Brahmi, sargandha, ---of medicinal plants of C.G. Food plants: Pearl millet, Buck of wheat, Sorghum, Soyabean, gram, Ground nut, Sugarcane and Potato. Fruit plants: Pear, Peach, Litchi. Spices: Cinnamon, Turmeric, Ginger, Asafoetida and Cumin. Beverages : Tea, Coffee Rubber Cultivation of important flowers: Chrysanthemum, Dahelia, Biodiesel plants Jatropha, Pongamia Ethnobotany in context of Chhattisgarh.

UNIT-IV

Plant Anatomy: Root and shoot apical meristems theories of root and shoot apex organization, permanent tissues, anatomy of root, stem and leaf of dicot and monocot, secondary growth in root and stem, Anatomical anomalies in the primary structure of stems (Nyctanthes, Boerhaavia, Casuarina), Anamolous secondary growth in Dracaena, Bignonia, Laptadenia.

UNIT-V

Embryology: Flower as a reproductive organ, anther, microsporogenesis, types of ovules, megasporogenesis, development of male and female gametophyte, pollination, mechanisms, self incompatibility, fertilization, endosperm, embryo, polyembryonoy, apomixes and parthenocarpy.

Books Recommended:

Amal
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Ravi
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Shruti
13.6.19

Sum
13.6.19

EVS

**B.Sc.-II (BOTANY) PAPER-II
(ECOLOGY AND PLANT PHYSIOLOGY)**

UNIT-I

Introduction and scope of ecology, environmental and ecological factors, Soil formation and soil profile, Liebig's law of minimum, Shelford's law of tolerance, morphological and anatomical adaptations in hydrophytes, xerophytes and epiphytes.

UNIT-II

Population and community characteristics, Raunkiaer's life forms, population interactions (e.g. Symbiosis, Amensalism etc.), succession, ecotone and edge effect, ecological niches, ecotypes, ecads, keystone species

Concept of ecosystem, trophic levels, flow of energy in ecosystem, food chain and food web, concept of ecological pyramids

Biogeochemical cycles: carbon cycle, nitrogen cycle and phosphorus cycle

UNIT-III

Plant water relations: Diffusion, permeability, osmosis, imbibitions, plasmolysis, osmotic potential and water potential, Types of soil water, water holding capacity, wilting, Absorption of water, theories of Ascent of sap, Mineral nutrition and absorption, Deficiency symptoms, Transpiration, stomatal movement, significance of transpiration, Factors affecting transpiration, guttation.

UNIT-IV

Photosynthesis: Photosynthetic apparatus and pigments, light reaction mechanism of ATP synthesis. C₃, C₄ CAM pathway of carbon reduction, photorespiration, factors affecting photosynthesis.

Respiration: Aerobic and anaerobic respiration, Glycolysis, Krebs's cycle, factors affecting respiration, R.Q.

UNIT-V

Plant growth hormones: Auxin, Gibberellin, Cytokinin, Ethylene and Abscisic acid. Physiology of flowering, Florigen concept, Photoperiodism and Vernalization. Seed dormancy and germination, plant movement.

Books Recommended:

Koromondy, E.J. *Concepts of Ecology*, Prentice Hall, USA

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Hemchand Yadav Vishwavidyala, Durg (C.G.)

Zoology

B.Sc. Part – II (2019-20)

Paper – I

(Anatomy and Physiology)

Comparative Anatomy of various organ systems of vertebrates:

Health

Unit: I

- Integument and its derivatives: structure of scales, hair and feathers
- Alimentary canal and digestive glands in vertebrates
- Respiratory organs : Gills and lung , air-sac in birds

Unit: II

- Endoskeleton: (a) Axial Skeleton- Skull and Vertebrae, (b) Appendicular Skeleton Limbs and girdles
- Circulatory System: Evolution of heart and aortic arches
- Urinogenital System: Kidney and excretory ducts

Health / Human Values.

Unit: III

- Nervous System: General plan of brain and spinal cord
- Ear and Eye: structure and function
- Gonads and genital ducts

Unit: IV

- Digestion and absorption of dietary components
- Physiology of heart, cardiac cycle and ECG
- Blood Coagulation
- Respiration: mechanism and control of breathing

Unit: V

- Excretion: Physiology of excretion, osmoregulation
- Physiology of muscle contraction
- Physiology of nerve impulse, Synaptic transmission

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Zoology
B.Sc. Part – II (2019-20)

Paper-II
**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

Unit: I

- Structure and function of Endocrine glands
- Hormone receptor
- Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones
- Endocrine disorder of pituitary, thyroid, adrenal and pancreas

Unit:II

- Reproductive cycle in vertebrates
- Menstruation, lactation and pregnancy
- Mechanism of parturition
- Hormonal regulation of gametogenesis

Unit: III

- Evidences of organic evolution.
- Theories of organic evolution.
- Variation, Mutation, Isolation and Natural selection.
- Evolution of Horse

Unit:IV

- Introduction to Ethology: Branches and concept of ethology.
- Patterns of Behaviour, Taxes, Reflexes, Drives and Stereotyped behaviour.
- Reproductive behavioural patterns.
- Drugs and behavior, Hormones and behaviour

Unit:V

- Prawn Culture
- Sericulture
- Apiculture
- Pisciculture
- Poultry keeping
- Elements of Pest Control: Chemical & Biological Control

Health/Hormones values

Gender issues

Environment

Human values/behaviour

Professional Ethics

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B.SC.-II
COMPUTER SCIENCE
PAPER - I
COMPUTER HARDWARE
(PAPER CODE - 0855)

MAX. MARKS 50

DURATION 3 HOURS

AIM - The emphasis is on the design concepts & organisational details of the common PC, learning the complicated electronics of the system of the computer Engineers.

OBJECT OF THE COURSE -

1. To introduce the overall organisation of the microcomputers.
2. To introduce the common peripheral devices used in computers.
3. To introduce the hardware components, use of micro processor and function of various chips used in microcomputer.

N.B. : Since the computer organisation study is very vast & complicated, so the study is restricted to only the description and understanding part, hence the paper setter is requested to keep this important factor in mind.

UNIT-I CLASSIFICATION AND ORGANIZATION OF COMPUTERS

Digital and analog computers and its evolution. Major components of digital computers; Memory addressing capability of CPU; word length and processing speed of computers. Microprocessors single chip microcomputers; large and small computers. User interface Hardware software and firmware. multi programming multi user system. Dumb smart and intelligent terminals computer network and multi processing, LAN parallel processing. Flinn's classification of computers. Computer flow and data flow computers.

UNIT-II CENTRAL PROCESSING UNIT.

CPU organization, ALU control unit registers. Instructions for INTEL 8085, Instruction word size, Various addressing mode interrupts and exceptions, some special Control signals and I/O devices. Instruction cycle fetch and execute operation, time Diagram, data flow.

UNIT-III MEMORY OF COMPUTERS.

Main memory secondary memory, backup memory, cache memory; real and virtual Memory Semiconductor memory. Memory controller and magnetic memory; RAM; disks, optical disks Magnetic bubble memory; DASD, destructive and non destructive. readout. Program of data Memory and MMU.

UNIT-IV I/O DEVICES.

I/O devices of micro controller; processors. I/O devices, printer, plotter, other output devices, I/O port serial data transfer scheme, Micro controller, signal processor, I/O processor I/O processor arithmetic processor.

UNIT-V SYSTEM SOFTWARE AND PROGRAMMING TECHNIQUE.

ML, AL, HLL, stac subroutine debugging of programs macro, micro programming, Program Design, software development, flow & chart multi programming, multiuser, multi tasking Protection, operating system and utility program, application package.

RECOMMENDED BOOKS :

1. Computer Fundamentals : Architecture and Organization - By B. Ram (Wilwy Eastern Ltd.)
2. Computers Today - By Donal H. Sanders
3. Computers Fundamental - By Rajaraman.
4. IBM PC - XT Clones - By Govinda Rajalu

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B.Sc.-II
PAPER - II
SOFTWARE
(Paper Code - 0856)

AIM - Introduction to the web-language-HTML & problem solving through the concept of object oriented programming.

Professional

OBJECT OF THE COURSE -

1. To introduce the internet & web related technology & learn the intricacies of web-pagedesigning using HTML.
2. To introduce the object oriented programming concept using C++ language.
3. To introduce the problem solving methodology using the C++ programming features.

N.B. : Examiners are requested to prepare unit-wise Questions papers.

UNIT-I HTML BASICS & WEB SITE DESIGN PRINCIPLES

Concept of a Web Site, Web Standards, What is HTML? HTML Versions, Naming Scheme for HTML Documents, HTML document/file, HTML Editor, Explanation of the Structure of the homepage, Elements in HTML Documents, HTML Tags, Basic HTML Tags, Comment tag in HTML, Viewing the Source of a web page, How to download the web page source? XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet language (XSL), Some tips for designing web pages, HTML Document Structure. HTML Document Structure-Head Section, Illustration of Document Structure, <BASE> Element, <ISINDEX> Element, <LINK> Element, META, <TITLE> Element, <SCRIPT> Element, Practical Applications, HTML Document Structure-Body Section: -Body elements and its attributes: Background; BackgroundColor; Text; Link; Active Link (ALINK); Visited Link (VLINK); Left margin; Top margin, Organization of Elements in the BODY of the document: Text Block Elements; Text Emphasis Elements; Special Elements — Hypertext Anchors; Character-Level Elements; Character References, Text Block Elements: HR (Horizontal Line); Hn (Headings); P (Paragraph); Lists; ADDRESS; BLOCKQUOTE; TABLE; DIV (HTML3.2 and up); PRE (Preformatted); FORM, Text Emphasis Elements, Special Elements — Hypertext Anchors, Character-Level Elements: line breaks (BR) and Images (IMG), Lists, ADDRESS Element, BLOCKQUOTE Element, TABLE Element, COMMENTS in HTML, CHARACTER Emphasis Modes, Logical & Physical Styles, Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER.

UNIT-II IMAGE, INTERNAL AND EXTERNAL LINKING BETWEEN WEBPAGES

Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER Insertion of images using the element IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT (Alternative), ALIGN), IMG (In-line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchor, Internal and External Linking between Web Pages Hypertext Anchors, HREF in Anchors, Link to a Particular Place in a Document, NAME attribute in an Anchor, Targeting NAME Anchors, TITLE attribute, Practical IT Application Designing web pages links with each other, Designing Frames in HTML. Practical examples.

UNIT-III INTRODUCTION TO OOP

Advantages of OOP, The Object Oriented Approach, Characteristics of object oriented languages- Object, Classes, Inheritance, Reusability, Polymorphism and C++.
Function: Function Declaration, Calling Function, Function Defines, Passing Argument to function, Passing Constant, Passing Value, Reference Argument, returning by reference, Inline Function, Function Overloading, Default Arguments in function.

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M. J.
17/11/17

S. K. Dubey
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H. C.
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P. P.
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INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	Environmental Microbiology and Biostatistics	3 hrs.	50
Second	Microbial Physiology and Immunobiotechnology	3 hrs.	50
	PRACTICAL Examination (including sessionals)	4 hrs.	50 (40+10)

Note : During Two months Summer Vacation, students will visit some Industries. He/She will submit "Summer Job-Training Report" in B.Sc. IIRD Year Viva Voce Exam.

PAPER - I ENVIRONMENTAL MICROBIOLOGY AND BIOSTATISTICS

(Paper Code - 0876)

M.M.50

- EV2 {
- UNIT-1 Our environment : Soil, water and air. Concept of environment in relation to microbes. Environment included physiological adaptations in microorganisms. Nature of microbial population in soil, water and air. Biogeochemical cycling - Carbon, Nitrogen, Sulphur and Phosphorus.
 - UNIT-2 Population interactions : Neutralism, Commensalism, Synergism, Mutualism, Antagonistic relationships. Mycorrhizal associations. VAM and its importance.
 - UNIT-3 Nitrogen fixation by symbiotic and non-symbiotic microorganisms. Use of microorganisms as biofertilizers. Mass cultivation of Rhizobium and Azotobacter. Use of blue-green algae as biofertilizers.
 - UNIT-4 Liquid waste disposal. Nature of domestic and municipal waste and sewage. Sewage treatment. Solid waste disposal. Methods of disposal of Agricultural waste.
 - UNIT-5 Basic idea of probability, normal, binomial and poisson distribution. Mean, Mode and Median. Chi-Square test. Exponential and Logarithmic Functions.

PRACTICALS

1. Isolation of Microorganisms from Air.
2. Isolation of Microorganisms from Water.
3. Isolation of Microorganisms from soil.
4. Determination of MPN of faecal contaminants in water.
5. Measurement & confirmation of E. coli in water sample.
6. Biochemical tests for identification of enteric bacteria.
7. Study of Rhizobium from root nodules.
8. Study of symbiotic and non-symbiotic blue-green algae.
9. Problems based on the determination of Mean, Median and Mode.
10. Problems on Chi-Square Test.
11. Experiments to demonstrate Symbiotic, Antagonistic activities and relations amongst microbes and their interactions with plants.

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D.K.G. 21/7/17
V.V.V. 21/7/17

B.Sc. III

दुर्ग विश्वविद्यालय, दुर्ग (छ.ग.)



पाठ्यक्रम

परीक्षा – 2017-18

बी.एससी. भाग-3
B.Sc. Part-3

(Approved by Board of Studies)
Effective from July 2017

B.Sc.Part-III

विषय-सूची

1. Revised Ordinance No. 21	3
2. Scheme of Examination	5
3. Foundation Course: आधार पाठ्यक्रम	7
4. Chemistry : रसायन शास्त्र	9
5. Physics : (भौतिक शास्त्र)	15
6. Mathematics	19
7. Botany (वनस्पति शास्त्र)	26
8. Zoology (प्राणी शास्त्र)	29
9. Microbiology(सूक्ष्म जीव विज्ञान)	32
10. Geology(भूविज्ञान)	35
11. Statistics(सांख्यिकी)	38
12. Defence Studies(रक्षाअध्ययन)	41
13. Industrial Chemistry(औद्योगिक रसायन)	44
14. Computer Science	48
15. Informatin Technology	53
16. Industrial Microbiology	55
17. Electronics(इलेक्ट्रानिक्स)	57
18. Anthropology (मानव विज्ञान)	60
19. Electronic Equipment maintenance	63
20. Biotechnology	60
21. Biochemistry	68

PHYSICS

Objectives :

Present course is aimed to provide ample knowledge of basics of Physics which are relevant to the understanding of modern trends in higher physics.

The first paper is aimed at preparing the back ground of modern physics which includes the relativistic and quantum ideas mainly concerned with atomic, molecular and nuclear physics. It consists an essential pre-requisite for better understanding of any branch of physics.

The second paper is mainly concerned with Solid State Physics, Solid State Devices and Electronics. This course is quite important from the applicational aspects of modern electronic devices. It also forms the basis of advance electronics including communication technology to be covered at higher level.

The experiments are based mostly on the contents of the theory papers so as to provide comprehensive insight of the subject.

Scheme of Examination :

1. There shall be two theory papers of 3 hours duration each and one practical paper of 4 hours duration. Such paper shall carry 50 marks.
2. Each theory paper will comprise of 5 units. Two questions will be in each unit and the student will have the choice to answer one out of the two.
3. Numerical problems of about 30 percent will compulsorily be asked in each theory paper.
4. In practical paper each student has to perform two experiments during examination.
5. Practical examination will be of 4 hours duration. The distribution of practical marks will be as follows.

Experiments : $15 + 15 = 30$, Viva-voce

:10 Internal Assessment - 10.



Professional

Ethics

PAPER - I (Paper Code-0893)

RELATIVITY, QUANTUM MECHANICS, ATOMIC MOLECULAR
AND NUCLEAR PHYSICS.

UNIT-I Reference systems, inertial frames, Galilean invariance and conservation laws, propagation of light, Michelson-Morley experiment, search for ether. Postulates for the special theory of relativity, Lorentz transformations, length contraction, time dilation, velocity addition theorem, variation of mass with velocity, mass-energy equivalence, particle with zero rest mass, Compton effect.

UNIT-II Origin of the quantum theory : Failure of classical physics to explain the phenomena such as black-body spectrum, photoelectric effect. Wave-particle duality and uncertainty principle : de Broglie's hypothesis for matter waves : the concept of wave and group velocities, evidence for diffraction & interference of particles, experimental demonstration of matter waves. Davisson and Germer's experiment. Consequence of de Broglie's concepts, quantisation in hydrogen atom, energies of a particle in a box, wave packets. Consequence of the uncertainty relation : gamma ray microscope, diffraction at a slit.

UNIT-III Quantum Mechanics : Schrodinger's equation. Postulatory basis of quantum mechanics, operators, expectation values, transition probabilities, applications to particle in a one-and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier. Hydrogen atom : natural occurrence of n , and m quantum numbers, the related physical quantities.

UNIT-IV Spectra of hydrogen, deuterium and alkali atoms spectral terms, doublet fine structure, screening constants for alkali spectra for s, p, d and f states, selection rules. Discrete set of electronic energies of molecules, quantisation of vibrational and rotational energies, determination of internuclear distance, pure rotational and rotation vibration spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic vibration spectra. Raman effect, Stokes and anti-Stokes lines, complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.

UNIT-V Interaction of charged particles and neutrons with matter, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chambers, spark chamber, emulsions. Structure of nuclei, basic properties (Z, A, μ, Q and binding energy), deuteron binding energy, $p-p$ and $n-p$ scattering and general concepts of nuclear forces, Beta decay, range of alpha particle Geiger-Nuttall law. Gamow's explanation of beta decay, alpha decay and continuous and discrete spectra. Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model & liquid drop model, fission and fusion (concepts), energy production in stars by $p-p$ and carbon cycles (concepts).

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Professional Ethics

PAPER-II (Paper Code-0894)

SOLID STATE PHYSICS, SOLID STATE DEVICES AND ELECTRONICS

UNIT-I Amorphous and crystalline solids, Elements of symmetry, seven crystal system, Cubic lattices, Crystal planes, Miller indices, Laue's equation for X-ray diffraction, Bragg's Law. Bonding in solids, classification. Cohesive energy of solid.

Madelung constant, evaluation of Parameters.

Specific heat of solids, classical theory (Dulong-Petit's law). Einstein and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin Zone.

UNIT-II Free electron model of a metal, Solution of one dimensional Schrodinger equation in a constant potential. Density of states. Fermi Energy, Energy bands in a solid (Kronig-Penny model without mathematical details). Metals, Insulator and Semiconductors. Hall effect.

Dia, Para and Ferromagnetism. Langevin's theory of dia and para-magnetism. Curie-Weiss's Law. Qualitative description of Ferromagnetism (Magnetic domains), B-H. curve and Hysteresis loss.

UNIT-III Intrinsic semiconductors, carrier concentration in thermal equilibrium, Fermi level, Impurity semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emitting diode, solar cell, Bipolar transistors, pnp and npn transistors, characteristics of transistors, different configurations, current amplification factor, FET.

UNIT-IV Half and full wave rectifier, rectifier efficiency ripple factor, Bridge rectifier, Filters, Inductor filter, T and N filters, Zener diode, regulated power supply. Applications of transistors. Bipolar Transistor as amplifier.

Single stage and CE small signal amplifiers, Emitter followers, Transistor as power amplifier, Transistor as oscillator, Wein-Bridge Oscillator and Hartley oscillator.

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MATHEMATICS

There shall be three theory papers. Two compulsory and one optional Each paper carrying 50 marks is divided into five units and each unit carry equal marks.

PAPER - I (Paper Code-0898)

ANALYSIS

Professional Ethics

REAL ANALYSIS

UNIT-I Series of arbitrary terms. Convergence, divergence and Oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real-valued functions of two variables. Schwarz and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.

UNIT-II Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of integral calculus. Mean value theorems of integral calculus.

Improper integrals and their convergence, Comparison tests. Abel's and Dirichlet's tests. Frullani's integral. Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.

COMPLEX ANALYSIS

UNIT-III Complex numbers as ordered pairs. Geometric representation of Complex numbers. Stereographic projection. Continuity and differentiability of Complex functions. Analytic functions. Cauchy-Riemann equations. Harmonic functions. Elementary functions. Mapping by elementary functions. Mobius transformations. Fixedpoints, Cross ratio. Inverse points and critical mappings. Conformal mappings.

METRIC SPACES

UNIT-IV Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences, Completeness, Cantor's intersection theorem. Contraction principle, Construction of real numbers as the completion of the incomplete metric space of rationals. Real numbers as a complete ordered field.

UNIT-V Dense subsets. Baire Category theorem. Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity, Isometry and homeomorphism. Equivalent metrics. Compactness, Sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and compact sets, Connectedness, Components, Continuous functions and connected sets.

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PART - II (Paper Code-0899)
ABSTRACT ALGEBRA

Professional Ethics

UNIT-I Group-Automorphisms, inner automorphism. Automorphism groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for Group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow subgroup, Structure theorem for finite Abelian groups.

UNIT-II Ring theory-Ring homomorphism. Ideals and Quotient Rings. Field of Quotients of an Integral Domain, Euclidean Rings, Polynomial Rings, Polynomials over the Rational Field. The Eisenstien Criterion, Polynomial Rings over Commutative Rings, Unique factorization domain. R unique factorisation domain implies so is $R[x_1, x_2, \dots, x_n]$ Modules, Submodules, Quotient modules, Homomorphism and Isomorphism theorems.

UNIT-III Definition and examples of vector spaces. Subspaces. Sum and direct sum of subspaces, Linear span. Linear dependence, independence and their basic properties. Basis. Finite dimensional vector spaces. Existence theorem for bases. Invariance of the number of elements of a basis set. Dimension. Existence of complementary subspace of a subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.

UNIT-IV Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space. Bidual space and natural isomorphism. Adjoint of a linear transformation. Eigenvalues and eigenvectors of a linear transformation. Diagonalisation. Annihilator of a subspace. Bilinear, Quadratic and Hermitian forms.

UNIT-V Inner Product Spaces-Cauchy-Schwarz inequality. Orthogonal vectors. Orthogonal Complements. Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces. Gram-Schmidt Orthogonalization process.

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PAPER - III - (OPTIONAL)

(II) DISCRETE MATHEMATICS (Paper Code-0901)

*Professional
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UNIT-I Sets and Propositions - Cardinality, Mathematical Induction, Principle of Inclusion and exclusion.

Computability and Formal Languages - Ordered Sets, Languages, Phrase Structure Grammars, Types of Grammars and Languages, Permutations, Combinations and Discrete Probability.

UNIT-II Relations and Functions - Binary Relations, Equivalence Relations and Partitions, Partial Order Relations and Lattices, Chains and Antichains, Pigeon Hole Principle. **Graphs and Planar Graphs** - Basic Terminology, Multigraphs, Weighted Graphs, Paths and Circuits, Shortest Paths, Eulerian Paths and Circuits, Travelling Salesman Problem, Planner Graphs.

TREES.

UNIT-III Finite State Machines - Equivalent Machines, Finite State Machines as Language Recognizers, Analysis of Algorithms - Time Complexity.

Complexity of Problems, Discrete Numeric Functions and Generating Functions.

UNIT-IV 1 Recurrence Relations and Recursive Algorithms - Linear Recurrence Relations with Constant Coefficients, Homogeneous Solutions, Particular Solution, Total Solution, Solution by the Method of Generating Functions. Brief review of Groups and Rings.

UNIT-V Boolean Algebras - Lattices and Algebraic Structures, Duality, Distributive and Complemented Lattices, Boolean Lattices and Boolean Algebras, Boolean Functions and Expressions, Propositional Calculus, Design and Implementation of Digital Networks, Switching Circuits.

REFERENCES :

C.L. Liu, Elements of Discrete Mathematics, (Second Edition), McGraw Hill, International Edition, Computer Science Series, 1986.

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Environmental & Sustainability

BOTANY

PAPER-I (Paper Code-0915)

PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

M.M. : 50

UNIT-I Plant-water relations : Importance of water to plant life ; physical properties of water; diffusion and osmosis; absorption, transport of water and transpiration ; physiology of stomata.
Mineral nutrition : Essential macro and micro-elements and their role ; mineral uptake; deficiency and toxicity symptoms.

UNIT-II Transport of organic substances : Mechanism of phloem transport ; source-sink relationship ; factors affecting translocation.
Basic of enzymology : Discovery and nomenclature ; characteristics of enzymes ; concept of holoenzyme apoenzyme, coenzyme and cofactors ; regulation of enzyme activity, mechanism of action.
Photosynthesis : Significance ; historical aspects ; photosynthetic pigments ; action spectra and enhancement effects ; concept of two photosystems; Z-scheme ; photo-phosphorylation ; Calvin cycle ; C4 pathway ; CAM plants ; photorespiration.

UNIT-III Respiration : ATP - the biological energy currency ; aerobic and anaerobic respiration; Kreb's cycle; electron transport mechanism (chemi-osmotic theory) ; redox potential; oxidative phosphorylation ; pentose phosphate pathway.

Nitrogen and lipid metabolism : Biology of nitrogen fixation ; importance of nitrate reductase and its regulations ; ammonium assimilation ; structure and function of lipids; fatty acid biosynthesis ; Beta-oxidation ; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.

UNIT-IV Growth and development : Definitions ; phases of growth and development ; kinetics of growth, seed dormancy, seed germination and factors of their regulation ; plant movements ; the concept of photoperiodism ; physiology of flowering ; florigen concept; biological clocks ; physiology of senescence, fruit ripening ; plant hormones auxins, gibberellins, cytokinins, abscisic acid and ethylene, history of their discovery, biosynthesis and mechanism of action; photomorphogenesis ; phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.

UNIT-IV Genetic engineering : Tools and techniques of recombinant DNA technology ; cloning vectors ; genomic and cDNA library ; transposable elements ; techniques of gene mapping and chromosome walking.
Biotechnology : Functional definition ; basic aspects of plant tissue culture ; cellular totipotency, differentiation and morphogenesis ; biology of Agrobacterium ; vectors for gene delivery and marker genes ; salient achievements in crop biotechnology.

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PAPER-II
(Paper Code-0916)

ECOLOGY AND UTILIZATION OF PLANTS M.M. : 50

UNIT-I Plants and environment : Atmosphere (gaseous composition), water (properties of water cycle), light (global radiation, photosynthetically active radiation), temperature, soil (development, soil profiles, physico-chemical properties), and biota.

Morphological, anatomical and physiological responses of plants to water (hydro-phytes and xerophytes), temperature (thermoperiodicity), light (photoperiodism, heliophytes and sciophytes) and salinity.

UNIT-II Community Ecology : Community characteristics, frequency, density, cover, life forms biological spectrum ; ecological succession.

Ecosystems : Structure, abiotic and biotic components ; food chain, food web, ecological pyramids, energy flow ; biogeochemical cycles of carbon, nitrogen and phosphorus.

UNIT-III Population ecology : Growth curves ; ecotypes ; ecads.
Biogeographical regions of India.

Vegetation types of India : Forests and grasslands.

UNIT-IV Utilization of Plants

Food plants : Rice, wheat, maize, potato, sugercane.

Fibres : Cotton and jute.

Vegetable oils : Groundnut, mustard and coconut

General account of sources of firewood, timber and bamboos.

UNIT-V Spices : General account.

Medicinal plants : General account

Beverages : Tea and coffee.

Rubber.

PRACTICAL SCHEME M.M. 50

01. Physiology	08
02. Ecology	08
03. Utilization of Plants	05
04. Biochemistry / Biotechnology	05
05. Spotting (1-5 spots)	10
06. Project work	04
07. Viva V.	05
08. Sessional	05
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Environmental

ZOOLOGY

Paper-I (Paper Code-0917)

Ecology, Environmental-biology ; Toxicology ; Microbiology and Medical Zology.

2. Attempting one question from each unit will be compulsory. 100% chice be given.

UNIT-I (ECOLOGY)

- EVS*
1. Aims and scopes of Ecology.
 2. Major ecosystems of the world-Brief intruduction
 3. Population- Characteristics and regualtion of densities.
 4. Communities and Ecosystems.
 5. Biogeochemical cycles
 6. Air and water pollution
 7. Ecological succession

UNIT-II (ENVIRONMENTAL BIOLOGY)

- EVS*
1. Laws of limiting factors
 2. Food chain in a freshwater ecosystem.
 3. Energy flow in ecosystem-Trophic levels
 4. Conservation of Natural resources
 5. Environmental impact Assessment

UNIT-III (TOXICOLOGY)

1. Definition of Toxicity
2. Classification of toxicants
3. Principle of systematic toxicology
4. Toxic agents and their action- Metallic and inorganic agents
5. Animal poisons - Snake-venom, Scorpion and bee poisoning
6. Food pisoning

UNIT-IV (MICROBIOLOGY)

1. General and Applied microbiology.
2. Microbiology of Domestic water and sewage.
3. Microbiology of milk and milk products.
4. Industrial microbiology.

UNIT-V (MEDICAL MICROBIOLOGY)

1. Brief introduction to pathogenic micro-organisurs, Rickettsia, Spirochaetes and Bacteria.
2. Brief account of life-history and pathogenicity of the following pathogens with reference to man ; Prophylaxis and treatment -
 - (a) Pathogenic Protozoans - Entamoeba, Trypanosoma, and Giardia
 - (b) Pathogenic helminths - Schistosoma
 - (c) Nematode Pathogenic parasites of man
3. Vector insects

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PAPER-II
(Paper Code-0918)

(GENETIC'S, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND BIOTECHNIQUES)

Note : Attempting one question from each unit will be compulsory, 100% choice be given.

UNIT-I (GENETIC'S)

1. Linkage and Linkage maps
2. Varieties of gene expression - Multiple alleles ; lithogenesis ; Pleiotropic genes; gene interaction ; epistasis.
3. Sexchromosome systems, and sex-linkage.
4. Mutation and chromosomal alterations ; meiotic consequences.
5. Human genetics - chromosomal and single gene disorders (somatic cell genetics)

UNIT-II(CELL PHYSIOLOGY)

1. General idea about pH and Buffer.
2. Transport across membrane - cell membrane; Mitochondria and Endoplasmic reticulum.
3. Active transport and its mechanism; Active transport in Mitochondria and Endoplasmic reticulum.
4. Hydrolytic enzymes - Their chemical nature, Activation and specificity.

UNIT-III (BIOCHEMISTRY)

1. Amino acids and Peptides - Basic structure and biological function.
2. Carbohydrate and its metabolism - Glycogenesis; Gluconeogenesis; glycolysis, Glycogenolysis; Cofi-cycle.
3. Lipid metabolism - Oxidation of glycerol; oxidation of fatty acid.
4. Protein metabolism - Deamination, Transamination, Transmethylation; Biosynthesis of Protein;

UNIT-IV (BIOTECHNOLOGY)

1. Biotechnology - Scope and importance.
2. Recombinant DNA and Gene cloning.
3. Cloned genes and other tools of biotechnology.
4. Applications of biotechnology in (i) Pharmaceutical industry, and (ii) Food processing industry.

UNIT-V (BIOTECHNIQUE)

Principles and techniques about the following

1. pH meter
2. Colorimeter
3. Microscopy-Light microscopes, Phase contrast and Electron microscopes.
4. Centrifugation
5. Separation of biomolecules by chromatography, and Electrophoresis
6. Histrochemical methods for determination of Protein, Lipids, and carbohydrate

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2. **An Introduction to the various as :**

- (a) General understanding of different μP or CPU :
Intel 8088, 286, 386, 486, 586 Pentium, P54C, MMX P55C;
Motorola 6800 & 88100 series; CYRIX & AMD CPUs.
- (b) The Registers of CPU : (Give Example of P-8088) Register organisation of 8088, Scratch pad segment, pointer, Index and Flag, Registers.
- (c) Memory addressing modes of P-8088 : Segment offset; Data addressing modes; Addressing for branch instructions.
- (d) I/O Addressing with P-8088 : Memory mapped I/O & I/O mapped I/O.

UNIT-2 : SYSTEM HARDWARE ORGANISATION OF COMPUTERS :

1. **Hardware Organisation of the Personal Computer :**

- (a) Block diagram with various parts of PC.
- (b) The Mother Board of General P.C. : 8088 CPU; ROM & RAM; Keyboard & its interface; System timer/counters; Hardware interrupt vectoring; DMA controller & channels; Interfacing to audio speaker; Bus slots & facture cards.
- (c) The Serial I/O ports, COM-1 & COM-2.
- (d) The parallel Port for Printer.
- (e) Expansion Slots for RAM.
- (f) Disk Controllers : For floppy, Hard disk, CD-ROM & Cassetts drives.

2. **The Video Display of PCs :**

- (a) Video Monitors; Monochrome and colour.
- (b) Video Display Adapters & Their Video Modes; Monochrome & colour graphics adapters.
- (c) Video Control Through ANSI-SYS.
- (d) Video Control Through ROM-BOIS : INT 10H.
- (e) Direct Video Control; Monochrom & colour graphics adapters.
- (f) Installing Customized Character Sets.

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UNIT-3 : ORGANISATION OF OPERATING SYSTEM WITH SYSTEM HARDWARE :

1. The ROM-BIOS Services :

- (a) Introduction to UNIX, ENIX, SUN, solaris, DOS & MAC. with special reference to DOS & Windows, its ver., as DOS becomes more popular than others in PCs.
- (b) The ROM-BIOS Diskette Services, INT 13H.
- (c) The ROM-BIOS Serial Port Services, INT 14H.
- (d) The ROM-BIOS Keyboard Services, INT 16H.
- (e) The ROM-BIOS Printer Services, INT 17H.
- (f) Miscellaneous Service Provided by the ROM-BIOS : INT 05H, INT 11H, INT 12H, INT 18H, INT 19H, INT 1AH.

2. The fundamental of Operating System viz. DOS/WINDOWS :

- (a) The loading of DOS & Its Basic Structure ; ROM bootstrap, IO.SYS, DOS.SYS & Command.COM.
- (b) The Execution of the programs under DOS ; EXEC functions, program segment prefix; Features of COM & EXE program files.
- (c) Device Handling by Dos ; FDD, HDD, CON, Keyboard, PRN, AUX, CLOCK and NUL devices; Block devices; Character devices; Driver installation sequence.
- (d) File Structures of DOS ;
- (e) The DOS Interrupts : INT 20H-2FH
- (f) The DOS functions through INT 21H; Discuss only the understanding part of various other DOS function to handle hard & softwares.
- (g) Installation of windows : Important system files in windows.

UNIT-4 : ORGANIZATION & HANDLING BY OPERATING SYSTEMS :

1. Disk and Files under DOS :

- (a) Logical Structure of a Disk : Organisation of disk for use; Boot record ; FAT files; disk or root directory.
- (b) File Organisation on a DOS disk : Logical volumes ; Sub directories; Volume lables.
- (c) Manipulating Files under DOS : File attributes ; date and time, file Access; FCB functions.

2. Memory Allocation, Program Loading and Execution :

- (a) Memory Management under DOS : EXEC loader; Memory Management & its functions; Modifying a Program's memory allocation.

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(b) Loading and Executing Programs under DOS : The EXEC function ;
Memory considerations; parameter blocks; calling & returning from
EXEC.

(c) Loading the program overlays through EXEC.

UNIT-5 : ORGANISATION OF HARDWARE BY OPERATING SYSTEM :

1. Interrupt Handling through DOS :

- (a) Types of interrupts.
- (b) Interrupt Vector Table in PC.
- (c) Interrupt Service Routines.
- (d) Special Interrupts in PC : Clock Interrupt; The -C or Break Interrupt
; DOS reserved interrupt INT 28H ; Patching memory resident
routines.

2. Filters for DOS :

- (a) Filters in operating systems.
- (b) Redirection of I/O under DOS.
- (c) The Filters Supplied with DOS.
- (d) Writing Filters to run under DOS.

3. Handling of Various Versions of Windows O.S. :

- (a) Setup Installation
- (b) Trouble shooting
- (c) Networking features

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Text Book :

- 1. Hardware and Software of Personal Computers.
By Sanjay K. Bose. (Wiley Eastern Ltd. New Delhi).

Supporting Text Books :

- 1. Digital System from Gates to Microprocessor.
By Sanjay K. Bose. (Wiley Eastern Ltd. New Delhi).
- 2. Computer Fundamentals ; Architecture & Organisation.
By B. Ram.. (Wiley Eastern Ltd. New Delhi).

Reference Books :

- 1. IBM PC-XT and Clones : By Govinda Rajalu.
- 2. Microprocessor and interfacing : By Douglas Hall.
- 3. Insight the IBM-PC : Peter Norton.
- 4. Microprocessor System : 8086/8088 family architecture, programming &
design : By Liu and Gibson.

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- (c) Security : Management of Roles, Changing Password, Granting Roles & Privilege, with drawing privileges.
- (d) PL/SQL : Block Structure in PL/SQL, Variable and constants, Running PL/SQL in the SQL*PLUS, Data base Access with PL/SQL, Exception Handling, Record Data type in PL/SQL, Triggers in PL/SQL.

UNIT-4 : G.U.I. PROGRAMMING

- (a) Introduction to Visual Basic : Event Driven Programming, IDE, Introduction to Object, Controlling Objects, Models and Events, Working with Forms, MDI Form Working with standard Controls.
- (b) Overview of Variables, Declaring, Scope, Arrays, User defined data types, Constants, Working with procedures : Function, Subroutine, and Property. Working with Data, Time, Format, String, and Math's Function. Controlling Program Execution: Comparison and Logical Operators, If...Then statements, Select Case Statement, Looping Structures, Exiting a loop. Error Trapping and Debugging.
- (c) File Organization : Saving data to file, Sequential and Random access file, the desing and coding.

UNIT-5 : V DATA BASE PROGRAMMING IN VB

- (a) Introduction :- Concept of DAO, RDO, ADO, input validation : field & form level validation, ADO object model : the ADO object Hierarchy, the connection object, the command object, record set object, parameter object, field object, record object, stream object, Error object, parameter object.
- (b) Using Bound control to Present ADO data : Using the ADO data control, ADO data control properties, binding simple controls : Data list, data combo, Data Grid, Data Form Wizard : single form wizard, Grid form, master/Detail form.
Programming the ADO data control : Refresh method, Event, Hierarchical flex Grid control.
- (c) Data Environment & Data Report : Creating connection, Using command object in the data Environment, Data Environment option and operation, Binding Form to the data Environment, ADO Events in the Data report, Print Preview, Print, Export, Data report in code : Data reports Events, Binding data reports Directly.

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II yr BA



हेमचंद्र यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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दूरभाष : 0788-2352400

क्र. 2960/A /अका./2020

दुर्ग, दिनांक 10/9/2020

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद्र यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर भाग-दो के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-दो के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2020-21 से लागू किये जाते हैं:-

1. बी.ए. - आधार पाठ्यक्रम-हिन्दी भाषा, हिन्दी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, मानवविज्ञान, संस्कृत, सांख्यिकी प्राचीन भारतीय इतिहास, भूगोल, मनोविज्ञान
2. बी.एस-सी.- आधार पाठ्यक्रम-हिन्दी भाषा, जीव विज्ञान, मानवविज्ञान, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, गणित, भौतिक शास्त्र, प्राणीशास्त्र, सूक्ष्मजीव विज्ञान, वनस्पतिशास्त्र, भूविज्ञान, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3. बी.ए./बी.एस.सी (गृह विज्ञान) - आधार पाठ्यक्रम - हिन्दी भाषा एवं गृह विज्ञान।

उपरोक्त विषयों को शिक्षा सत्र 2020-21 से संशोधित रूप में स्नातक स्तर भाग-दो के लिए लागू किया जाता है स्नातक स्तर भाग-एक हेतु सत्र 2019-20 में लागू पाठ्यक्रम मान्य होंगे एवं भाग - तीन के पाठ्यक्रम यथावत रहेंगे।

टीप:- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय के परीक्षा विभाग एवं वेबसाइट पर प्रकाशित करने हेतु वेबसाइट प्रभारी को उपलब्ध करा दी गई है।

कुलसचिव

क्र. 2961/A /अका./2020

दुर्ग, दिनांक 10/9/2020

प्रतिलिपि:-

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 परिपेक्ष्य में सूचनार्थ।
2. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद्र यादव विश्वविद्यालय, दुर्ग।
3. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद्र यादव विश्वविद्यालय, दुर्ग।

सह. कुलसचिव (अका.)

REVISED ORDINANCE NO.11

(As per State U.G.C. Scheme)

BACHELOR OF ARTS

1. The three year course have been broken up into three Parts.
Part-I Examination : at the end of the first year.
Part-II Examination : at the end of the second year and
Part-III Examination : at the end of the third year.
2. A candidate who after passing (10+2) or Intermediate Examination of C.G. Board of Secondary Education, Raipur or any other examination recognised by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.A. Part-I examination.
3. A candidate who after passing B.A. Part-I examination of the University or any other examination recognised by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part II Examination.
4. A candidate who after passing B.A. Part II examination of the University has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part-III examination.
5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate candidates shall be eligible for admission to the examination as per provisions of Ordinance N. 6 relating to Examinations (General). Provided that non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular students at any of the University Teaching Department or College.

6. Every candidate for the Bachelor of arts examination shall be examined in :
- A. Foundation Course:
- I - Group - Hindi Language
 - II - Group - English Language
- B. Three Course subjects : One subject from any three groups out of the following six groups :
1. Sociology/Ancient Indian History Culture and Anthropology.
 2. Political Science/Home Science / Drawing & Painting / Vocational Course.
 3. Hindi Literature/Sanskrit Literature /Urdu Literature/Mathematics
 4. Economics/Music/Defence studies / Linguistics.
 5. Philosophy/Psychology/Geography/Education/Management.
 6. History/English Literature/Statistics.
 7. Practicals (if necessary) for each core subject.
7. Any candidate who has passed the B.A. examination of the University shall be allowed to present himself for examination in any of additional subjects prescribed for the B.A. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.A. Part I examination in the subject which he proposes to offer and then the B.A. Part II and Part III examination in the same subject. Successful candidate will be given a certificate to that effect.
8. In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total marks in each subject/group of subjects. In subject/group of subjects, where both theory and practical examination are provided, an examinee must pass in both theory and practical parts of the examination separately.
9. Candidate will have to pass separately at the Part-I, Part II and part-III examination. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the division of the Final examination, total marks obtained by the examinees, in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part I Examination.

Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject only the total aggregate marks being carried over for determining the division shall include the actual marks obtained in the subject in which he appeared at the supplementary examination.

10. Successful examinees at the Part-III examination obtaining 60% or more marks shall be placed in the First division, those obtaining less than 60% but not less than 45% marks in the Second division and other successful examinees in the third division.

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बी. ए. भाग 2 B. A. Part II

राजनीति विज्ञान Political Science

प्रथम प्रश्नपत्र : राजनीतिक चिन्तन Paper I : Political Thought

- इकाई 1 : प्लेटो : आदर्श राज्य - न्याय, शिक्षा, साम्यवाद, दार्शनिक शासक ।
अरस्तू : राज्य, दासप्रथा, नागरिकता, क्रान्ति ।
- Unit 1 : Plato : Ideal State : Justice, Education, Communism , Philosopher King.
Aristotle : State, Slavery, Citizenship , Revolution.
- इकाई 2 : मैकियावेली : युग का शिशु, धर्म व नैतिकता, राजा के कर्तव्य और आचरण ।
हॉब्स : सामाजिक समझौता सिद्धान्त - लेवियाथन । लॉक : सामाजिक समझौता सिद्धान्त ।
रुसो : सामाजिक समझौता सिद्धान्त , सामान्य इच्छा ।
- Unit 2 : Machiavelli : Child of his times, Religion and Morality, Duties and Conduct of King. Hobbes :
Social Contract Theory: Leviathan. Locke : Social Contract Theory. Rousseau : Social Contract
Theory and General Will.
- इकाई 3 : बेंथम : उपयोगितावाद । मिल : उपयोगितावाद में संशोधन, स्वतंत्रता और प्रतिनिधि शासन ।
ग्रीन : राजनीतिक विचार । मार्क्स : राजनीतिक विचार ।
- Unit 4 : Bentham : Utilitarianism. Mill : Amendment in Utilitarianism. Liberty and Representative
Government. Green : Political Thoughts. Marx : Political Thoughts.
- इकाई 4 : आदर्शवाद, व्यक्तिवाद, उदारवाद, समाजवाद, फासीवाद : विशेषताएं और आलोचना ।
- Unit 4 : { Idealism, Individualism, Liberalism, Socialism, Fascism : Features and
Hu Criticism.
- इकाई 5 : मनु और कौटिल्य : सप्तांग सिद्धान्त, राजा और राजपद, प्रशासकीय व्यवस्था, राज्यमण्डल ।
गांधी : सत्य, अहिंसा, सत्याग्रह एवं राजनीतिक विचार । अम्बेडकर : राजनीतिक एवं सामाजिक विचार
दीनदयाल उपाध्याय : एकात्ममानववाद ।
- Unit 5 : { Manu and Kautilya : Saptang Theory, King and Kingship, Administrative
System, Rajyamandal.
Gandhi : Truth , Non violence , Satyagrah and Political thoughts.
Ambedkar : Political and Social thoughts.
Deen Dayal Upadhyay : Akatmamanavvad.

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बी. ए. भाग 2 B. A. Part II

राजनीति विज्ञान Political Science

द्वितीय प्रश्नपत्र : तुलनात्मक शासन एवं राजनीति

Paper II : Comparative Government and Politics

- इकाई 1 : ब्रिटिश संविधान : विकास, विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका ।
- Unit 1 : British Constitution : Evolution, Sallent Features, Executive, Legislature and Judiciary.
- इकाई 2 : संयुक्त राज्य अमेरिका का संविधान : विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका, शक्ति पृथक्करण व नियंत्रण संतुलन का सिद्धान्त ।
- Unit 2 : Constitution of United States of America : Sallent Features, Executive, Legislature and Judiciary. Theory of Separation of Powers and checks and balances.
- इकाई 3 : स्विटजरलैण्ड का संविधान : विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका, प्रत्यक्ष प्रजातन्त्र । Unit 3 : Constitution of Switzerland : Salient Features, Executive, Legislature and Judiciary. Direct Democracy.
- इकाई 4 : चीन का संविधान : विशेषताएं, कार्यपालिका, व्यवस्थापिका, न्यायपालिका, साम्यवादी दल ।
- Unit 4 : Constitution of China : Salient Features, Executive, Legislature and Judiciary. Communist Party.
- इकाई 5 : तुलनात्मक राजनीति : अर्थ, परिभाषा, ईस्टन का व्यवस्था सिद्धान्त, आमण्ड का संरचनात्मक-प्रकार्यात्मक उपागम । राजनीतिक विकास, राजनीतिक समाजीकरण, राजनीतिक संस्कृति की अवधारणा ।
- Unit 5 : Comparative Politics : meaning, Definition. System Theory of David Easton, Structural -functional Approach of Almond. Concept of Political Development, Political Socialisation, Political Culture

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Human value

Revised syllabus

SOCIOLOGY . 2019 - 2020

B.A. PART-II

PAPER - I

SOCIOLOGY OF TRIBAL SOCIETY

(Paper Code-0185)

- UNIT-I Tribes: Concepts, Characteristics, Tribes and Schedule Tribes, Distinction between Tribe and Caste.
- UNIT-II Classification of Tribal people: Food gatherers and hunters, Shifting cultivates, Nomads, Peasant settled Agriculturists and Artisans.
- Gender issue { UNIT-III Socio-cultural Profile; Kinship, Marriage, Family, Religion and belief cultural traditions.
- { UNIT-IV Tribal sensitization: Tribal Mobility, Schemes of Tribal Development, Various Tribal Movements.
- Gender issue { UNIT-V Problems of Tribal People: Poverty, Illiteracy, Indebtedness, Agrarian issues, Exploitation study of tribal communities in Chhattisgarh with special reform to Particularly Venerable Tribal Groups (PVTG).

ESSENTIAL READINGS :-

- 1 Vidyarthi, L.P. 1965. Cultural Counters of Tribal Bihar, Punthi Pustak, Calcutta.
- 2 Bose, N.K. 1971. Tribal Life in India, National Book Trust, New Delhi.
- 3 Das, R.K. 1988. The Tribal Social Structure, Inter India Publications, New Delhi.
- 4 Dubey, S.C.. 1977. Tribal Heritage of India, Ethnicity, Identity and Interaction, Vol.1, Vikash Publishing House, Delhi.
- 5 Elwin, Varrier. 1989. The Tribal World of Verrier Elwin: An Autobiography, Oxford, New Delhi.
- 6 Russell, R.V. and Hira Lal. 1916. The Tribes and Castes of Central Province of India, 4 Vols. Cosmo Publications, New Delhi.

Shobhasti
10/6/2019

Shankar
10.06.2019

Mishra
10-6-19

Human
Value

Revised syllabus
SOCIOLOGY 2019-2020

B.A. PART-II.

PAPER-II

CRIME AND SOCIETY

(Paper Code-0186)

- UNIT-I **Concept of Crime:** Meaning, Characteristics and Types.
School of Crime: Classical, Sociological and Psychological.
- UNIT-II **Structure of Crime:** Anomie, Criminality and Suicide, Organized Crime, White Collar Crime and Cyber Crime
- UNIT-III **Social Evils and Crime:** Alcoholism, Drug Addiction, Dowry and Beggary.
- UNIT-IV **Punishment:** Meaning, Characteristics, Objectives and Types,
Major Theories of Punishment.
- UNIT-V **Correctional Process:** Role of Police and Judiciary in India, Development of Jail reforms in India and Modern correctional concepts- Probation, Parole and after care Programme.

ESSENTIAL READINGS :-

1. Mike, & Maguire. (2007). *The Oxford Hand Book of Criminology*. London: Oxford University Press.
2. Haster, S., & Eglin, P. (1992). *A Sociology of Crime*. London: Routledge Publishers.
3. Mead, G. H. (1934). *Mind Self and Society*. Chicago: Chicago University Press
4. Gottfredson, Michael, R., Hirschi, & Travis. (1990). *A General Theory of Crime*. London: Stanford University Press.
5. Sutherland, & Edwin, H. (1924). *Principles of Criminology*. Chicago: Chicago University Press.
6. Sutherland, Edward, H., & White, C. (1949). *Crime*. New York, Holt, Rinehart: Winston Press, New York.

Shubhash
10/6/2019

Pratik
10/06/2019

M. S. D. S.
10-6-19

HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)

*Professional
Ethics*

REVISED SYLLBUS

B.A. Part- II (Economics)

Subject : Macro Economics, Paper-I (Code: 0181)

UNIT 1

National Income: Concept and measurement of national income, Economic welfare and national income, Social accounting. Circular flow of income, National income accounting, Green accounting Classical theory of employment, Say's law of market Keynesian theory of employment.

UNIT 2

Consumption Function - Average and marginal propensity to consume, Keynes's psychological law of consumption. Determinants of the consumption function. The saving function. The investments multiplier and its effectiveness, The investment Function - marginal efficiency of capital, Autonomous and induced investment. Saving and investment equality.

UNIT 3

Nature and Characteristics of trade cycle, Theories of trade cycle: Hawtrey's monetary theory, Hayek's over investment theory, Keynes's view on trade cycles, Schumpeter's theory of innovation, Samuelson and Hicks multiplier accelerator model, Control of trade cycle.

UNIT 4

International Trade - Inter-regional and international trade, Comparative advantage cost theory, Opportunity cost theory and Heckscher Ohlin theory, International trade and economic development, Tariffs & import quotas, Concept of optimum tariff. Balance of trade & balance of payment., Concept & components of BOP, Equilibrium & disequilibrium in BOP, Relative merits & demerits of devaluation, Foreign trade multiplier.

UNIT 5

Functions and objectives of international monetary fund, World Bank and World Trade Organization, International monetary reforms and India, Foreign trade in

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India recent change in the composition and direction of foreign trade, India's balance of payment, Export promotion and import substitution in India. Multinational Corporation and India.

BASIC READING LIST -

- Ackley, G. (1976) - "Macro Economics; Theory and Policy," Mcmillan Publishing Company, Newyork.
 - Day, A.C.L. (1960) - "Outline of Monetary Economics," Oxford University Press Oxford.
 - Gupta, S.B. (1994)- "Monetary Economics," S. Chand and Co., Delhi
 - Heijdra, B.J. and F.V. Ploeg (2001) - "Foundations of Modern Macro-economics," Oxford University Press, Oxford.
 - Lewis, M.K. and P.D. Mizan (2000) -" Monetary Economics, " Oxford University Press, New Delhi.
 - Shapiro, E. (1996) - "Macroeconomic Analysis," Galgotia Publications, New Delhi .
- READING LIST - -** Ackley, G. (1976)," Macroeconomics : Theory and Policy", Macmillan Publishing Company, New York. -
- Day, A.C.L. (1960) -" Outline of Monetary Economics," Oxford University Press Oxford.
- Gupta, S.B. (1994)- "Monetary Economics," S. Chand and Co., Delhi
 - Heijdra, B.J. and F.V. Ploeg (2001) -" Foundations of Modern Macro-economics, " Oxford University Press, Oxford.
 - Lewis, M.K. and P.D. Mizan (2000) - Monetary Economics, Oxford University Press, New Delhi.
 - Shapiro, E. (1996) - "Macroeconomic Analysis," Galgotia Publications, New Delhi.
 - Dillard, D. (1960)- "The Economics of John Mayanand Keynes, "Crossby Lockwood and Sons, London.
 - Hanson, A.H. (1953), "A Guide to Keynes, " McGraw Hill, New York.
 - Higgins, B. (1963), "Economic Development; Principles, Problems and Policies, " Central Book Depot, Allahbad.
 - Keynes, J.M. (1936), "The General Theory of Employment, Interest and Money," Macmillan, London.
 - Kindleberger, C.P. (1958), "Economic Development," McGraw Hill Book company, New York.
 - Powelson, J.P.C. (1960), " National Income and Flow of Funds Analysis," McGraw Hill, New York.

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HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)

REVISED SYLLBUS

B.A. Part- II (Economics)

Subject : Money, Banking and Public Finance, Paper-II (Code: 0182)

Professional ethics

UNIT 1

Basic concepts : Money - meaning and functions, Gresham's law; Quantity theory of money- Cash transaction and cash balance approaches; Value of Money, Inflation, deflation and reflation, types, causes and effects on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, Concept of demonetization.

UNIT 2

Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation, purpose and limitations; Liabilities and assets of banks; Evolution of commercial banking in India after independence; A critical appraisal of the progress of commercial banking after Nationalization, Functions of a central bank; Quantitative and qualitative methods of credit control; Bank rate policy; Open market operations; Variable reserve ratio and selective methods. Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.

UNIT 3

Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The Principle of maximum social advantage; Role of the government in economic activities ; Public expenditure - Meaning, classification and principles of public expenditure; Trends in public expenditure and causes of growth of public expenditure in India.

UNIT 4

Sources of Public revenue; taxation - Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes; Taxable capacity; Effects of taxation; Characteristics of a good tax

Wade

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26/8/19

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system; Equity and Justice in Taxation, Major trends in tax revenue of the Central and State Government in India.

UNIT 5

Public debt and financial administration: Sources of public borrowing, Effects of public debt. Methods of debt redemption. The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.

READING LIST -

- Ackley G. (1978), "Macroeconomics : Theory and Policy," Macmillan Publishing Co., New York.
- Bhargavas B.H. (1981), "The Theory and Working of Union Finance in India," Chaitanya Publishing House Allaybad.
- Gupta, S.B. (1994), "Monetary Economics", S. Chand & Company, New Delhi.
- Houghton. E.W. (Ed.) (1988), "Public Finance." Pengum, Battinore - Jha R. (1998), Modern Public Economics. Routledge, London.
- Mithani, D.M. (1981), "Modern Public Finance," Himalaya Publishing House, Mumbai.
- Musgrave, R.A. and P.B. Musgrave (1976), "Public Finance in Theory and Practice", McGraw Hill, Kogakusha, Tokyo.
- Shapiro, E. (1996), "Macroeconomics Analysis," Galgotia Publications, New Delhi.

ADDITIONAL READING LIST

- Day, A.C.L. (1960), "Outline of Monetary Economics, " Oxford University Press, Oxford.
- De Kock, M.H. (1960), "Central Banking." Staples Press, London.
- Due, J.E. (1963), "Government Finance," Irwin, Homewood.
- Government of India, "Economic Survey" (Annual), New Delhi
- Halm, G.N. (1955), "Monetary Theory," Asia Publishing House, New Delhi

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B.A. /B.Sc. Part II

PAPER - I

ECONOMIC AND RESOURCES GEOGRAPHY

Max. Marks: 50

(Paper Code-0187)

- Unit I** Meaning, scope and approaches to economic geography; Main concepts of economic geography; Resource: concept and classification; Natural resources: soil, forest and water.
- Unit II** Mineral resources: iron ore and bauxite; Power resources: coal, petroleum and hydro electricity; Resource conservation; Principal crops: wheat, rice, sugarcane and tea
- Unit III** Agricultural regions of the world (Derwent Whittlesey); Theory of agricultural location (Von Thunen); Theory of industrial location (Weber); Major industries: iron and steel, textiles, petrochemical and sugar; industrial regions of the world.
- Unit IV** World transportation: major trans-continental railways, sea and air routes; International trade: patterns and trends; Major trade blocks: LAFTA, EEC, ASEAN; Effect of globalization on developing countries. *Human Value*
- Unit V** Conservation of resources; evolution of the concept, principles, philosophy, and approach to conservation, resources conservation and practices. Policy making and sustainable development. *Professional Ethics Environment*

Books Recommended:

1. Alexander, J. W. (1988): Economic Geography. Prentice-Hall, New Delhi.
2. Bryson, J., Henry, N., Keeble, D. and Martin, R. (eds.) (1999): The Economic Geography Reader: Producing and Consuming Global Capitalism. John Wiley and Sons, Inc, New York.
3. Clark, G. L., Gertler, M. S. and Feldman, M. P. (eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, USA.
4. Coe, N. (2007): Economic Geography: A Contemporary Introduction. Blackwell Publishers, Inc., Massachusetts.
5. Gautam, A. (2006): *Aarthik Bhugol Ke Mool Tattava*, Sharda Pustak Bhawan, Allahabad.
6. Guha, J. S. and Chatteraj, P.R. (2002): A New Approach to Economic Geography: A Study of Resources. The World Press Private Limited, Kolkata.
7. Hanink, D. M. (1997): Principles and Applications of Economic Geography: Economy, Policy, Environment. John Wiley and Sons, Inc, New York.
8. Hartshorne, T. A. and Alexander, J. W. (1988): Economic Geography (3rd revised edition) Englewood Cliff, New Jersey, Prentice Hall
9. Hudson, R. (2005): Economic Geographies: Circuits, Flows and Spaces. Sage Publications, London.
10. Knowles, R, Wareing, J. (2000): Economic and Social Geography Made Simple, Rupa and Company, New Delhi.

Dr. S. K. Das
27.5.19

Ashish Das
27.5.19

P. S. Das
27.5.19
DR. R. R. Das

VS 27/05/19

B.A. /B.Sc. Part II

PAPER - II
GEOGRAPHY OF INDIA

Max. Marks: 50
(Paper Code-0188)

- Unit I** Physical Features: Structure, Relief, Climate, Physiographic Regions, Drainage, Climate-origin and mechanism of monsoon, and regional and Seasonal variation.
- Unit II** Natural Resources: Soils - types, their distribution and characteristics. Water Resources (major irrigation and hydel power projects); Forests-types, distribution, economic significance and conservation. Mineral and Power resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non conventional sources of energy.
- Unit III** Cultural Features : Population - Growth, Density and Distribution. Agriculture - Major crops, impact of Green Revolution and Agricultural regions.
- Unit IV** Industries Localization, Development & Production - Iron and steel, Cotton Textile, Cement, Sugar, Transport, Foreign Trade. Industrial Region.
- Unit V** Detailed Study of the following regions of India : Kashmir Valley, North- East Region, Chhota Nagpur Plateau, Thar Desert, Islands of India.

Enviro
ment
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Ethics

Books Recommended:

1. Chauhan, P.R. and Prasad, M. (2003): *Bharat Ka Vrihad Bhugol*, Vasundhara Prakashan, Gorakhpur.
2. Farmer, B.H. (1983): *An Introduction to South Asia*. Methuen, London
3. Gautam, A. (2006): *Advanced Geography of India*, Sharda Pustak Bhawan, Allahabad
4. Johnson, B.L.C. (1963): *Development in South Asia*. Penguin Books, Harmondsworth
5. Krishnan, M.S. (1982): *Geology of India and Burma*, CAS Publishers and Distributors, Delhi.
6. Khullar, D.R. (2007): *India: A Comprehensive Geography*, Kalyani Publishers, New Delhi
7. Nag, P. and Gupta, S. S. (1992): *Geography of India*, Concept Publishing Company, New Delhi.
8. Rao, B.P. (2007): *Bharat ke Bhaugolik Sameeksha*, Vasundhara Prakashan, Gorakhpur.
9. Sharma, T.C. and Coutinho, O. (2003): *Economic and Commercial Geography of India*, Vikas Publishing House Private Ltd. New Delhi.
10. Singh, J. (2003): *India: A Comprehensive Systematic Geography*. Gyanodaya Prakashan, Gorakhpur
11. Singh, J. (2001): *Bharat: Bhaugolik Aadhar Avam Ayam*, Gyanodaya Prakashan, Gorakhpur.
12. Singh, R.L. (ed.) (1971): *India: A Regional Geography*. National Geographical Society of India, Varanasi.
13. Spate, O.H. K., Learmonth A. T. A. and Farmer, B. H. (1996): *India, Pakistan and Sri Lanka*. Methuen, London, 7th edition.
14. Sukhwai, B.L. (1987): *India: Economic Resource Base and Contemporary Political Patterns*. Sterling Publication, New Delhi
15. Tiwari, R.C. (2007): *Geography of India*, Prayag Pustak Bhawan, Allahabad.
16. Wadia, D. N. (1959): *Geology of India*. Mac-Millan and Company, London and student edition, Madras.

Dr. S. K. Das
27.5.19

Dr. S. K. Das
27.5.19

Dr. R. Sharma
27.5.19

27/05/19

बी.ए./बी.एस.सी. -द्वितीय वर्ष

प्रश्न पत्र-प्रथम

आर्थिक एवं संसाधन भूगोल

Environment

(कोड क्रमांक 0187)

अधिकतम अंक: 50

इकाई-1 : आर्थिक भूगोल का अर्थ, विषय क्षेत्र एवं उपागम; आर्थिक भूगोल की आधारभूत संकल्पनाये; संसाधन : संकल्पनायें एवं वर्गीकरण; प्राकृतिक संसाधन : मिट्टी, वन एवं जल ।

इकाई-2 : खनिज संसाधन : लौह अयस्क एवं बाक्सईट; शक्ति संसाधन कोयला, पेट्रोलियम एवं जल विद्युत; संसाधन संरक्षण ; प्रमुख फसले: गेहूँ, चावल, गन्ना, एवं चाय ।

इकाई-3 : विश्व के कृषि प्रदेश (डिटलसी के अनुसार); कृषि अवस्थिति के सिद्धान्त (वॉन थ्यूनेन); औद्योगिक स्थानीयकरण का सिद्धान्त (वेबर); प्रमुख उद्योग : लौह एवं इस्पात, वस्त्र उद्योग, शैलरासायनिक एवं शक्कर; विश्व के औद्योगिक प्रदेश ।

इकाई-4 : विश्व परिवहन : प्रमुख ट्रांस महाद्वीपीय रेलवे, समुद्र एवं वायु मार्ग; अंतर्राष्ट्रीय व्यापार प्रतिरूप एवं प्रवृत्तियाँ; प्रमुख व्यापार संघ : लैटिन अमेरिकी स्वतंत्र व्यापार संघ (LAFTA), यूरोपीय साझा बाजार (EEC), दक्षिणी-पूर्वी एशियाई राष्ट्रों का संघ (ASEAN), विकासशील देशों पर भूमण्डलीकरण का प्रभाव ।

इकाई-5 : संसाधनों का संरक्षण; संकल्पनाओं का उद्भव, सिद्धान्त, दर्शन एवं संरक्षण के उपागम, संसाधन संरक्षण एवं प्रवृत्तियाँ, अक्षय विकास एवं नीति निर्माण ।

Books Recommended:

1. Alexander, J. W. (1988): Economic Geography. Prentice-Hall, New Delhi.
2. Bryson, J., Henry, N., Keeble, D. and Martin, R. (eds.) (1999): The Economic Geography Reader: Producing and Consuming Global Capitalism. John Wiley and Sons, Inc, New York.
3. Clark, G. L., Gertler, M. S. and Feldman, M. P. (eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, USA.
4. Coe, N. (2007): Economic Geography: A Contemporary Introduction. Blackwell Publishers, Inc., Massachusetts.
5. Gautam, A. (2006): Aarthik Bhugol Ke Mool Tattava, Sharda Pustak Bhawan, Allahabad.
6. Guha, J. S. and Chatteraj, P.R. (2002): A New Approach to Economic Geography: A Study of Resources. The World Press Private Limited, Kolkata.
7. Hanink, D. M. (1997): Principles and Applications of Economic Geography: Economy, Policy, Environment. John Wiley and Sons, Inc, New York.
8. Hartshorne, T. A. and Alexander, J. W. (1988): Economic Geography (3rd revised edition) Englewood Cliff, New Jersey, Prentice Hall
9. Hudson, R. (2005): Economic Geographies: Circuits, Flows and Spaces. Sage Publications, London.
10. Knowles, R, Wareing, J. (2000): Economic and Social Geography Made Simple, Rupa and Company, New Delhi.

Dr. S. K. Das
27.5.19

Dr. S. K. Das
27.5.19

DR. R. Sharma
27.5.19

सत्र 2019-20 से प्रस्तावित
वी.ए. द्वितीय वर्ष
संस्कृत साहित्य
द्वितीय प्रश्नपत्र
नाटक, व्याकरण और अनुवाद

पूर्णांक - 75
अंक - 15

- इकाई -1 रघुवंशमहाकाव्यम् (द्वितीय सर्गः)
दो श्लोकों की व्याख्या अंक - 15
- इकाई -2 रघुवंशमहाकाव्य के समीक्षात्मक प्रश्न
नीतिशतकम् (भर्तृहरिकृत) अंक - 15
- इकाई -3 दो श्लोकों की व्याख्या
साहित्येतिहासः अंक - 15
- इकाई -4 नाटक, महाकाव्य तथा गद्यकाव्य -
अभिज्ञानशाकुन्तल, उत्तररामचरित, वेंणीसंहार, मुद्राराक्षस, मृच्छकटिक,
रघुवंश, कुमारसंभव, बुद्धचरित, सौन्दरनन्द, पद्मचूडामणि, सुग्रीववध,
किरातार्जुनीय, भट्टिकाव्य, जानकीहरण, शिशुपालवध, नैषधीयचरित,
हरविजय, नवसाहसांकचरित, विक्रमांकदेवचरित, राजतरंगिणी ।
वासवदत्ता, दशकुमारचरित, कादम्बरी, हर्षचरित, तिलकमंजरी, गद्यचिन्तामणि,
शिवराजविजय । अंक - 15
- इकाई -5 साहित्येतिहासः
गीतिकाव्य, मुक्तक तथा कथा साहित्य -
शतकत्रय (भर्तृहरि), ऋतुसंहार, मेघदूत, अमरुकशतक, गीतगोविन्द,
भामिनीविलास, पंचलहरी, नलचम्पू, रामायणचम्पू, भारतचम्पू,
वरदाम्बिकापरिणय, पंचतंत्र, हितोपदेश, बेतालपंचविंशति, शुकसप्तति,
कथासरित्सागर, बृहत्कथामंजरी, कथामुक्तावली, इक्षुगन्धा ।
(उल्लिखित रचनाओं एवं रचनाकारों का सामान्य परिचय अपेक्षित है ।)

अनुशंसित ग्रन्थ -

1. रघुवंशमहाकाव्य - कालिदास, प्रकाशक - मोतीलाल बनारसीदास
2. नीतिशतकम् - भर्तृहरि, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
3. संस्कृत साहित्य का इतिहास - आचार्य बलदेव उपाध्याय
4. संस्कृत साहित्य का अभिनव इतिहास - डा. राधावल्लभ त्रिपाठी, वि.सि. प्रकाशन, सागर, म.प्र.

31/05/19

सत्र 2019-20 से प्रस्तावित
बी.ए. द्वितीय वर्ष
संस्कृत साहित्य
टीप - बी.ए. द्वितीय वर्ष में संस्कृत साहित्य के दो प्रश्न-पत्र होंगे एवं दोनों प्रश्न-पत्र
75-75 अंकों के होंगे ।

प्रथम प्रश्नपत्र
नाटक, व्याकरण तथा रचना

पूर्णांक - 75

- | | | |
|---------|--|----------|
| इकाई -1 | नागानन्द नाटकम् (हर्षवर्धनकृत) | अंक - 15 |
| | 1. एक ससन्दर्भ व्याख्या | |
| | 2. दो सूक्तियों की व्याख्या | अंक - 15 |
| इकाई -2 | नागानन्द नाटकम् - समीक्षात्मक प्रश्न | अंक - 15 |
| इकाई -3 | व्याकरण (लघुसिद्धान्तकौमुदी) | |
| | कर्तृवाच्य, कर्मवाच्य, भाववाच्य | अंक - 15 |
| इकाई -4 | व्याकरण (लघुसिद्धान्तकौमुदी) | |
| | समास प्रकरण | अंक - 15 |
| इकाई -5 | वाक्यरचना | |
| | व्याकरण के अधीत अंश पर आधारित छह संस्कृत शब्दों से वाक्यरचना | |

अनुशासित ग्रन्थ -

1. नागानन्द नाटक - हर्षवर्धन, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
2. रचनानुवाद कौमुदी - डा. कपिलदेव द्विवेदी
3. संस्कृत में अनुवाद कैसे करें - उमाकान्त मिश्र शास्त्री, प्रकाशक - भारती भवन
4. लघु सिद्धान्त कौमुदी - श्रीधरानन्द शास्त्री
5. लघु सिद्धान्त कौमुदी - श्री महेश सिंह कुशवाहा, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
6. शीघ्रबोधव्याकरणम् - डा. पुष्पा दीक्षित, पाणिनीय शोध संस्थान, तेलीपारा, बिलासपुर

31/05/19

बी.ए. प्रथम वर्ष
संस्कृत साहित्य
द्वितीय प्रश्नपत्र
गद्य, कथा एवं साहित्येतिहास

पूर्णांक - 75

Ethical
values.]

इकाई -1	शुकनासोपदेश: - व्याख्या	अंक - 15
इकाई -2	हितोपदेश: (मित्रलाभ): - व्याख्या	अंक - 15
इकाई -3	शुकनासोपदेश एवं हितोपदेश के समीक्षात्मक प्रश्न	अंक - 15
इकाई -4	वैदिक एवं पौराणिक साहित्य का सामान्य परिचय (वेद, ब्राह्मण, आरण्यक, उपनिषद्, वेदांगों एवं पुराणों का संक्षिप्त परिचय)	अंक - 15
इकाई -5	निम्नलिखित कवियों का परिचय - महाकवि कालिदास, भारवि, माघ, श्रीहर्ष, विशाखदत्त, बाणभट्ट, शूद्रक, विशाखदत्त, भवभूति ।	अंक - 15

अनुशंसित ग्रन्थ -

1. शुकनासोपदेश - प्रकाशक - मोतीलाल बनारसीदास, वाराणसी
2. हितोपदेश (मित्रलाभ) - प्रकाशक - मोतीलाल बनारसीदास, वाराणसी
3. वैदिक साहित्य और संस्कृति - आचार्य बलदेव उपाध्याय
4. संस्कृत साहित्य का इतिहास - आचार्य बलदेव उपाध्याय
5. संस्कृत साहित्य का अभिनव इतिहास - डा. राधावल्लभ त्रिपाठी, वि.वि. प्रकाशन,
सागर, म.प्र.

31/05/19

बी.ए. प्रथम वर्ष
संस्कृत साहित्य
प्रथम प्रश्नपत्र

टीप - बी.ए. प्रथम वर्ष में संस्कृत साहित्य के दो प्रश्न-पत्र होंगे एवं दोनों प्रश्न-पत्र 75-75 अंकों के होंगे ।

नाटक, व्याकरण और अनुवाद

पूर्णांक - 75

- इकाई -1 स्वप्नवासवदत्तम् - व्याख्या अंक - 15
 इकाई -2 स्वप्नवासवदत्तम् - समीक्षात्मक प्रश्न अंक - 15
 इकाई -3 1. सुबन्त (शब्दरूप) - अंक - 15
 राम, मुनि, भानु, पितृ, करिन्, कर्तृ, आत्मन्, लता, मति, नदी,
 धेनु, मातृ, फल, वारि, सर्व, तद्, एतद्, यद्, इदम्, अस्मद्, युष्मद् ।
 2. तिङन्त (धातुरूप) -
 भ्वादि, दिवादि, तुदादि, चुरादि गण के अतिरिक्त अस् एवं कृ
 धातुओं के लट्, लृट्, लङ्, लोट् एवं विधिलिङ् लकारों के रूप
 3. अपठित गद्यांश पर आधारित प्रश्न

नोट- शब्द रूप एवं धातु रूप के विकल्प के रूप में अपठित गद्यांश पर आधारित प्रश्न भी पूछे जा सकते हैं ।

- इकाई -4 प्रत्याहार, संज्ञा, सन्धि और विभक्त्यर्थ अंक - 15
 इकाई -5 हिन्दी से संस्कृत में अनुवाद अंक - 15

अनुशासित ग्रन्थ -

1. रचनानुवाद कौमुदी - डा. कपिलदेव द्विवेदी
2. संस्कृतस्य व्यावहारिकस्वरूपम् - डा. नरेन्द्र, श्री अरविन्द आश्रम
3. संस्कृतव्याकरण - श्रीधर वसिष्ठ
4. संस्कृत में अनुवाद कैसे करें - उमाकान्त मिश्र शास्त्री, प्रकाशक - भारती भवन
5. लघु सिद्धान्त कौमुदी - श्री महेश सिंह कुशवाहा, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी

21/05/19

बी.ए. अन्तिम वर्ष

संस्कृत साहित्य

टीप - बी.ए. अन्तिम वर्ष में संस्कृत साहित्य के दो प्रश्न-पत्र होंगे एवं दोनों प्रश्न-पत्र 75-75 अंकों के होंगे ।

प्रथम प्रश्नपत्र

नाटक, छन्द तथा व्याकरण

पूर्णांक - 75

अंक - 15

Environmental + Gender Issues

- इकाई -1 अभिज्ञानशाकुन्तलम् (नाटक)
दो श्लोकों की व्याख्या
(प्रथम, चतुर्थ, पंचम तथा सप्तम अंक से व्याख्या, शेष द्रुतपाठ)
अंक - 15
- इकाई -2 अभिज्ञानशाकुन्तलम् - समीक्षात्मक प्रश्न
अंक - 15
- इकाई -3 निर्धारित छन्दों के लक्षण तथा उदाहरण
अनुष्टुप्, इन्द्रवज्रा, उपेन्द्रवज्रा, उपजाति, वंशस्थ, आर्या, मालिनी,
शिखरिणी, वसन्ततिलका, शार्दूलविक्रीडित, स्त्रग्धरा, मन्दाक्रान्ता ।
व्याकरण - लघुसिद्धान्तकौमुदी
कृदन्त प्रकरण
तव्यत्, अनीयर, यत्, क्यप्, ण्यत्, शतृ, शानच्, क्त्वा, ल्यप्,
तुमुन्, क्त, क्तवतु, ण्वुल्, तृच्, ल्युट्, अण् ।
अंक - 15
- इकाई -4 व्याकरण - लघुसिद्धान्तकौमुदी
कृदन्त प्रकरण
तव्यत्, अनीयर, यत्, क्यप्, ण्यत्, शतृ, शानच्, क्त्वा, ल्यप्,
तुमुन्, क्त, क्तवतु, ण्वुल्, तृच्, ल्युट्, अण् ।
अंक - 15
- इकाई -5 व्याकरण - लघुसिद्धान्तकौमुदी
1. तद्धितप्रत्यय -
अण्, ढक्, ष्यञ्, त्व, तल्, इमनिच्, ठक्, इञ्, मतुप्
इनि, इतच्, ईयसुन्, इष्टन्, तरप्, तमप्, ण्ययञ्
2. स्त्रीप्रत्यय -
टाप्, डीप्, डीष्, डीन् ।

अनुशंसित ग्रन्थ -

1. अभिज्ञानशाकुन्तलम् - कालिदास, प्रकाशक - मोतीलाल बनारसीदास, वाराणसी
2. छन्दोमंजरी - प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
3. लघु सिद्धान्त कौमुदी - श्रीधरानन्द शास्त्री
4. लघु सिद्धान्त कौमुदी - श्री महेश सिंह कुशवाहा, प्रकाशक - चौखम्बा विद्याभवन, वाराणसी
5. शीघ्रबोधव्याकरणम् - डा. पुष्पा दीक्षित, पाणिनीय शोध संस्थान, तेलीपारा, बिलासपुर
6. संस्कृत हिन्दी कोश - वामन शिवराम आप्टे, प्रकाशक - मोतीलाल बनारसीदास,

10/6/2021
डॉ. दिव्या देव

डॉ सुषमा तिवारी

10.06.2021
श्री एम. के. अलेन्द्र

BA III

दुर्ग विश्वविद्यालय, दुर्ग (छ.ग.)



पाठ्यक्रम

परीक्षा - 2017-18

बी.ए. भाग-3

B.A. Part-III

B.A./B.A. (CLASSICS) PART-III
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REVISED ORDINANCE NO.11

(As per State U.G.C. Scheme)

BACHELOR OF ARTS

1. The three year course have been broken up in to three Parts.
Part-I Examination : at the end of the first year.
Part-II Examination : at the end of the second year and
Part-III Examination : at the end of the third year.
2. A candidate who after passing (10-2) or intermediate examination of C.G. Board of Secondary Education, Raipur or any other examination recognised by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.A. Part-I examination.
3. A candidate who after passing B.A. Part-I examination of the University or any other examination recognised by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part II Examination.
4. A candidate who after passing B.A. Part II examination of the University has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part-III examination.
5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate candidates shall be eligible for admission to the examination as per provisions of Ordinance N. 6 relating to Examinations (General). Provided that non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular students at any of the University Teaching Department or College.
6. Every candidate for the Bachelor of Arts examination shall be examined in : A.
Foundation Course :
 - i) Group B - Hindi Language
 - ii) Group C - English LanguageB. Three Core subjects : One subject from any three groups out of the following six groups :
 1. Sociology/Ancient Indian History/Anthropology.
 2. Political Science/Home Science/Vocational Course.

3. Hindi Literature/Sanskrit Literature/Urdu Literature/Math.
 4. Economics/Music/Linguistics/Defence studies.
 5. Philosophy/Psychology/Geography/Education/Management.
 6. History/English Literature/Statistics.
 7. Practicals (if necessary) for each core subject.
7. Any candidate who has passed the B.A. examination of the University shall be allowed to present himself for examination in any of additional subjects prescribed for the B.A. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.A. Part I examination in the subject which he proposes to offer and then the B.A. Part II and Part III examination in the same subject. Successful candidate will be given a certificate to that effect.
8. In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total marks in each subject/group of subjects. In subject/group of subjects, where both theory and practical examination are provided, an examinee must pass in both theory and practical parts of the examination separately.
9. Candidate will have to pass separately at the Part-I, Part II and part-III examination. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the division of the Final examination, total marks obtained by the examinees, in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part I Examination. Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject only the total aggregate marks being carried over for determining the division shall include the actual marks obtained in the subject in which he appeared at the supplementary examination.
10. Successful examinees at the Part-III examination obtaining 60% or more marks shall be placed in the First division, those obtaining less than 60% but not less than 45% marks in the Second division and other successful examinees in the third division.

हिन्दी भाषा
(पेपर कोड-0231)
प्रथम प्रश्न पत्र

पूर्णांक - 75

(बी.ए., बी.एस.सी., बी.एच.एस.सी., बी.काम., तृतीय वर्ष के पुनरीक्षण एकीकृत आधार पाठ्यक्रम एवं पाठ्य सामग्री का संयोजन 2000-2001 से लागू है)

॥ सम्प्रेषण कौशल, हिन्दी भाषा और सामान्य ज्ञान ॥

आधार पाठ्यक्रम की संरचना और अनिवार्य पाठ्य पुस्तक-हिन्दी भाषा एवं समसामयिकी- का संयोजन इस तरह किया गया है कि सामान्य ज्ञान की विषय वस्तु- विकासशील देशों की समस्याओं- के माध्यम, आधार और साथ-साथ हिन्दी भाषा का ज्ञान और उसमें सम्प्रेषण कौशल अर्जित किया जा सके। इसी प्रयोजन से व्याकरण की अन्तर्वस्तु को विविध विधाओं की संकलित रचनाओं और सामान्य ज्ञान की पाठ्य सामग्री के साथ अन्तर्गुर्फित किया गया है। अध्ययन-अध्यापन के लिए पूरी पुस्तक की पाठ्य सामग्री है और अभ्यास के लिये विस्तृत प्रश्नावली है। यह प्रश्नपत्र भाषा का है अतः पाठ्य सामग्री कर व्याख्यात्मक या आलोचनात्मक अध्ययन अपेक्षित नहीं है। पाठ्यक्रम अरैर पाठ्य सामग्री का संयोजन निम्नलिखित पांच इकाइयों में किया जाता है। प्रत्येक इकाई दो भागों में विभक्त किया गया है।

- इकाई -1 (क) भारत माता : सुमित्रानंदन पंत, परशुराम की प्रतीज्ञा : रामधारी सिंह दिनकर, बहुत बड़ा सवाल : मोहन राकेश, संस्कृति और राष्ट्रीय एकीकरण : योगेश अटल
- Environmental [इकाई -2 (ख) कथन की शैलियां : रचनागत उदाहरण और प्रयोग।
(क) विकासशील देशों की समस्यायें, विकासात्मक पुनर्विचार, और प्रौद्योगिकी एवं नगरीकरण।
- Environment [इकाई-3 (ख) विभिन्न संरचनाएं।
(क) आधुनिक तकनीकी सभ्यता, पर्यावरण प्रदूषण तथा धारणीय विकास।
- Human value [इकाई-4 (ख) कार्यालयीन पत्र और आलेख।
(क) जनसंख्या : भारत के संदर्भ में और गरीबी तथा बेरोजगारी।
- इकाई-5 (ख) अनुवाद।
(क) ऊर्जा अरैर शक्तिमानता का अर्थशास्त्र।
(ख) घटनाओं, समारोहों आदि का प्रतिवेदलन और विभिन्न प्रकार के निमंत्रण-पत्र।

मूल्यांक योजना : प्रत्येक इकाई से एक-एक प्रश्न पूछा जायेगा। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक इकाई दो-दो खण्ड (क्रमशः 'क' और 'ख' में) विभक्त है, इसलिए प्रत्येक प्रश्न के भी दो भाग, (क्रमशः 'क' और 'ख' में) होंगे। 'क' अर्थात् पाठ एवं सामान्य ज्ञान से संबद्ध प्रश्न के अंक 8 एवं 'ख' अर्थात् भाषा एवं सम्प्रेषण कौशल से संबद्ध प्रश्न के अंक 7 होंगे। इस प्रकार पूरे प्रश्न के पूर्णांक 75 होंगे।

राजनीति विज्ञान
प्रश्न नत्र-प्रथम
अंतर्राष्ट्रीय राजनीति
(पेपर कोड- 0244)

पूर्णांक - 75

- Herman value*
- इकाई -1 अंतर्राष्ट्रीय राजनीति का अर्थ, प्रकृति, क्षेत्र, अंतर्राष्ट्रीय राजनीति के अध्ययन के उपागम।
- इकाई-2 अंतर्राष्ट्रीय राजनीति के विभिन्न सिद्धांत - शक्ति, परिभाषा, तत्व। शक्ति संघर्ष, शक्ति संचय, शक्ति वृद्धि, शक्ति प्रदर्शन।
- इकाई-3 शक्ति सन्तुलन की अवधारणा - सैद्धांतिक लाभ एवं मुल्यांकन। शांति एवं सुरक्षा की आवधारणा - सामूहिक सुरक्षा का सिद्धांत।
- इकाई -4 राजनय परिभाषा, प्रकार, कार्य, उद्देश्य एवं साधन निःशस्त्रीकरण - अर्थ, परिभाषा एवं विकास, निःशस्त्रीकरण के मार्ग की बाधाएं एवं निराकरण।
- invigilant*
- इकाई-5 अंतर्राष्ट्रीय राजनीति के नए प्रतिमान :
1. पर्यावरणवाद,
2. वैश्वीकरण,
3. मानव अधिकार,

संदर्भ ग्रन्थ -

1. महेन्द्र कुमार - अन्तर्राष्ट्रीय राजनीति के सैद्धांतिक पत्र।
2. विजय कुमार अरोरा - अन्तर्राष्ट्रीय राजनीति
3. दीनानाथ वर्मा - अन्तः संबंध - ज्ञानदर प्रकाशन, दिल्ली
4. मथुरालाल शर्मा - अन्तः संबंध - 1945 से, कॉलेज बुक डिपो, जयपुर
5. डी.सी. चतुर्वेदी - अन्तः संबंध - 1945 से, वर्तमान तक, रस्तोगी प्रकाशन, मेरठ
6. रमेश भारद्वाज - नवीन विश्व व्यवहार और भारती विदेश नीति
7. पंत एवं जैन - अन्तर्राष्ट्रीय संबंध, मीनाक्षी प्रकाशन, मेरठ
8. बी.के. खन्ना एवं अरोरा - भारतीय विदेशनीति के नये आयाम, डी. के. प्रकाशन, नई दिल्ली
9. Palmar and Prkins - International Relations.
10. R. Aron - Peace & war - A theory of International Relations, London.
11. Organski - World Politics
12. C.P. Schliccher - International Relations, Co-operation and Competition.
13. J. Frankel - The making of Foreign policy, london, 1963.
14. H.J. Morgenthau - Politics Among Nations, 6th adition, New York, 1985.
15. K.N. Waltz - Theory of International Politics, Addison - Wesley, 1979.

Human Value

प्रश्न पत्र- द्वितीय
लोक प्रशासन

(पेपर कोड - 0245)

पूर्णांक - 75

- इकाई -1 लोकप्रशासन का अर्थ, प्रकृति एवं क्षेत्र
एक अनुशासन के रूप में लोक प्रशासन का मुल्यांकन लोक प्रशासन एवं व्यक्तिगत प्रशासन में समानताएं एवं व्यक्तिगत प्रशासन में समानताएं एवं असमानताएं।
- इकाई -2 लोक प्रशासन के अध्ययन की पद्धति एवं उपागम,
नवीन लोक प्रशासन।
- इकाई-3 राजनीति एवं लोकप्रशासन
प्रशासनिक व्यवहार- नेतृत्व, निर्णय, निर्माण यंचार, जवाबदेही।
- इकाई-4 नौकरशाही एवं बजट प्रक्रिया
वैश्वीकरण एवं उदारीकरण के युग में लोक प्रशासन के नये आयाम।
- इकाई -5 प्रशासन पर विधायी नियंत्रण,
प्रशासन पर न्यायिक नियंत्रण।

संदर्भ ग्रंथ -

1. सी.पी. भाम्भरी
 2. पी.डी. शर्मा
 3. खान एवं वर्मा
 4. इन्द्रीजीत कौर
 5. जे. पह शर्मा
 6. आर. बसु
 7. बी. एल. फातिया
 8. निशा वशिष्ठ
 9. सी.एन. चतुर्वेदी
 10. Pfittner J.M.
 11. White L.D.
 12. Bhambhari C.P.
 13. Bhattacharya M.
 14. Maheshwari S.R.
 15. Awasthi & Maheshwari
- लोक प्रशासन की सिद्धांत
 - भारत में लोक प्रशासन
 - प्रशासनिक विचारधाराएं, भाग 1, 2
 - लोक प्रशासन, साहित्यभवन, आगरा
 - लोक प्रशासन रायपुर
 - लोक प्रशासन, नई दिल्ली, जवाहार पब्लिशर्स
 - लोक प्रशासन - साहित्य भवन, आगरा
 - भारत में नौकरशाही की कार्यप्रणाली
 - तुलनात्मक लोक प्रशासन, जयपुर (कॉलेज बुक डिपो)
 - Public Administration.
 - Introduction to the Principles of Public Administration.
 - Bureaucracy and Politics in India, Delhi Vikas 1971.
 - Public Administration.
 - Indian Administration system.
 - Public Administration.

22/7/17 22/7/17 22/7/17 22/7/17 22/7/17

ECONOMICS

PAPER - I

DEVELOPMENT AND ENVIRONMENTAL ECONOMICS

M.M. 75

(Paper Code-0242)

Human Value

UNIT-I Economic Growth and Development - Factors affecting economic growth, Capital and Technology Development & under development, Population of Under-developed Countries, Poverty - Absolut & Relative, Measuring development and Underdevelopment, gap per capita income, inequity of income and wealth.

Human Delopment index GDI, GEM, Poverty Index of development & Quality of life.

Environment

UNIT-II Population problem and growth, pattern of population. Theory of demographic trasion. Population poverty & Environment. Theory of Social Change Immutable laws of Capital Development - Crisis in capitalism. Karl Marx - Theory of Development, Mahalonobis four sectoral Model. Schumpeter's development in Capitalistic economy, Big-Push Balance and unbalanced Growth, Critical Minimum Effort thesis, Low Income Equilibrium Trap- Dualism : Technical, Behavioural & Social.

Human Value

Unit-III Harrod and Domar Growth Model, Neo Classical models, So low, Meade & Mrs. Joan Robinson's Growth model, Unlimited supply of Labour.

Environment

UNIT-IV Environment and Ecology : Economic linkage, Environment as a necessary and luxury, Population environment linkage, Environmental use & environmental disruption as an allocation problem. Market failure for environmental goods, environment as a public good, the Common problem. Property Human right approach to environmental problem, valuation of environmental damages-land, water, air & forest Pollution Control-Prevention. Control and asbtment of pollution Choice of policy instruments in developing Countries, Environmental legislation Indicators of Sustainable Develop-ment, environmental accounting.

UNIT-V Concept of Intellectual Capital - Food Security, Education Helath & Nutrition, Efficiency & Productivity in Agriculture New Technology & Sustainable Agriculture, Globalization & Agriculture growth, the Choice of Technique & appropriate technology & employment. Role of Monetary & Fiscal policies in developing Countries.

(Handwritten signatures and marks)
D.K. Bhowmik
N.K. Bhowmik
D.K. Bhowmik

GEOGRAPHY

- The B.A. Part III Examination in Geography will be of 150 marks. There will be two theory papers and one practical each of 50 marks as follows :
Paper – I Resource and Environment
Paper – II Geography of India (with special reference to Chhattisgarh)
Paper – III Practical Geography
- Each theory paper shall be of three hours' duration.
- Candidates will be required to pass separately in theory and practical examinations.
- Each theory paper is divided into five units.
- (a) In the practical examination the following shall be allotment of time and marks.

i) Lab work	- 20 marks	up to three hours
ii) Survey	- 10 marks	Two hours
iii) Field Report	- 10 marks	
iv) Practical Record and viva-voce	- 10 marks	

(b) The external and internal examiners shall jointly submit marks.
(c) The candidates shall present at the time of the practical examination their practical records regularly signed by the teachers concerned.

PAPER - I

RESOURCES AND ENVIRONMENT

M.M. 50

(Paper Code-0248)

A. Resources

UNIT-I Meaning, nature and components of resources and environment. Resources and environment interface. Classification of resources : renewable and nonrenewable : biotic (forests, wild-life, live-stock, fisheries, agricultural crops) and abiotic (land, water, mineral)

UNIT-II Distribution and utilization of water mineral and energy resources, their economic and environmental significance and conservation. Types and distribution of forests, fauna and fisheries, their economic, and environmental significance and conservation. Major soil types and their distribution; problems of soil erosion and soil conservation.

UNIT-III Number, density, growth and distribution of population; population pressure and resource utilization.

B. Environment

UNIT-IV Classification of environment: Natural and Human. Man environment interrelations with respect to population size, types of economy and technology; exploitation of natural resources and environmental hazards.

UNIT-V Emerging environmental issues - population explosion; food security; deforestation; global warming, conservation of bio-diversity; sustainable development.

Environment

Environment

*Ethics
Environment*

PAPER - II
GEOGRAPHY OF INDIA
(With Special reference to Chhattisgarh)
(Paper Code-0249)

M.M. 50

UNIT - I Physical features : Structure, Relief and Physiographic regions, Drainage, Climate- origin and mechanism of monsoon, and regional and seasonal variation.

UNIT-II Natural resources : Soils - types, their distribution and characteristics. Water resources (major irrigation and hydel power projects); Forests-types, distribution, economic significance and conservation. Mineral and Power resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non conventional sources of energy.

UNIT-III Cultural Features : Agriculture - Major crops, impact of green revolution and agricultural regions; Industries - Iron and steel, Cotton Textile, Cement, Sugar, Population - growth, density and distribution. Transport, Foreign Trade.

UNIT-IV Chhattisgarh :

Physical Features : Structure, Physiography, Drainage, Climate, Soils, Natural vegetation, Water resources - availability and development. Mineral and Power resources, Power projects.

UNIT-V Chhattisgarh : Cultural features : Agriculture, Industries, Population - growth, distribution and density, social groups, literacy and sex-ratio, urbanisation. Major tribes-their habitat, economy and society. Transport and Tourism.

SUGGESTED READING :

1. Sharma, T.C. and Coutinho, O. : Economic and Commercial Geography of India, Vikas Pub. House, New Delhi, 1988.
2. Singh, R.L. (Ed.) : India : A regional Geography, Nat. Geog. Soc. of India, Varanasi, 1971.
3. Spate, O.H.K. and Learmonth, A.T.A. India and Pakistan : A General and Regional Geography, Methuen & Co. Ltd. London, 1967.
4. Tiwari, R.C. : Geography of India, Prayag Pustak Bhawan. Allhabad, 2003.
5. प्रमीला कुमार (सम्पादक) : मध्यदेश का प्रादेशिक भूगोल, म.प्र. हिन्दी ग्रंथ अकादमी, भोपाल
6. अग्रवाल प्रेमचंद : भारत का भौतिक भूगोल

Human Value

SOCIOLOGY

PAPER - I

SOCIOLOGY OF TRIBAL SOCIETY

M.M. 75

(Paper Code-0246)

- UNIT-I** The concept of Tribe.
Characteristics of Tribal society Distinction in Tribe and Caste.
- UNIT-II** Classification of Tribal people :-
Food gatherers and hunters, shifting cultivates, nomads, peasants settled agriculturists, artisans.
Sociocultural profile - Kinship, marriage and family, religions beliefs cultural
- UNIT-III** traditions.
- UNIT-IV** Social mobility and change sensitization.
Schemes of Tribal Development Various tribal movements.
- UNIT-V** Problems of Tribal people -
Poverty, illitracy, indebtedness, agrarian issues, exploitation study of tribal immunities in Chhattisgarh with special reference to "oraon", "Kanwar" and "Gond".

PAPER - II

SOCIAL RESEARCH METHODS

M.M. 75

(Paper Code-0247)

- UNIT-I** Meaning and significance of Social Research.
Hypothesis and its formulation Scientific method and its applicability.
- UNIT-II** Positivism
Ethnography, observation, case study, content analysis.
- Unit-III** Types of Research -
Historical, descriptive, comparative exploratory, experimental.
- UNIT-IV** Techniques of data collection - survey sampling, Questionnaire, Interview schedule and Interview guide.
- UNIT-V** Meaning, importance and limitations of social statistics.
Graphs, diagrams and measures of central tendency - mean mode, mediaJ correlation.

PAPER II

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दूरभाष : 0788-2359400

क्र. 1460 /अका./2019

दुर्ग, दिनांक 05/07/2019

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद्र यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर भाग-एक के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

—00—

विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-एक के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2019-20 से लागू किये जाते हैं:-

1. बी.ए. — आधार पाठ्यक्रम-हिन्दी भाषा, हिन्दी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, मानवविज्ञान, संस्कृत, सांख्यिकी, प्राचीन भारतीय इतिहास, भूगोल, मनोविज्ञान, लाइब्रेरी साईंस
2. बी.एस-सी. — आधार पाठ्यक्रम-हिन्दी भाषा, जीव विज्ञान, मानवविज्ञान, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, गणित, भौतिक शास्त्र, प्राणीशास्त्र, सूक्ष्मजीव विज्ञान, वनस्पतिशास्त्र, भूविज्ञान, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3. बी.एस.सी- (गृह विज्ञान) — आधार पाठ्यक्रम - हिन्दी भाषा एवं गृह विज्ञान।
4. विधि — एल.एल.बी.
5. प्रबंध — बी.बी.ए.

उपरोक्त विषयों को शिक्षा सत्र 2019-20 से संशोधित रूप में स्नातक स्तर भाग-एक के लिए लागू किया जाता है स्नातक स्तर भाग दो एवं तीन के पाठ्यक्रम यथावत रहेंगे।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार।

कुलसचिव

B.Sc. (Home Science) PART- I
Session 2019-20
Group – II
Paper –A
BASIC NUTRITION

OBJECTIVE:

M.M. 50

- This course will enable the student to understand the functions of food and the role of various nutrients, their requirements and the effects of deficiency and excess (in brief).
- Learn about the structure, composition, nutritional contribution and selection of different foodstuffs,
- Be familiar with the different methods of cooking, their advantages and disadvantages, Develop an ability to improve the nutritional-quality of food.

THEORY

UNIT-I

Concept of Nutrition – Food, Nutrition, Under and Over Nutrition, Health

1. Functions of Food
2. Basic Terminology (Blanching, Marination in cookery- Caramalization, Seasoning)
3. Methods of Cooking

Human Value

UNIT-II Nutrients: Macro nutrients

Classification, sources, functions
Recommended Dietary-Allowances
Deficiency and excess (in brief)
Water
Carbohydrates
Fats
Protein
Fiber

UNIT-III Nutrients: Micro nutrients

Calcium
Iron
Magnesium
Zinc
Fluorine
Iodine, Selenium, Copper, Manganese
Fat-soluble vitamins (A,D,E,K)
Water soluble Vitamins (Thiamine, Riboflavin, Niacin, Vitamin C, Folic Acid ,Pyridoxine, Pantothenic acid and vitamin B12)

UNIT-IV Food, Structure Composition, Classification and Functions.

- Cereals, Millets and their products
- Pulses, Legumes and their products
- Fruits and Vegetables
- Milk and Milk Products
- Nuts and oil Seeds
- Meat, Fish, Poultry and Eggs
- Tea, Coffee, Cocoa, Chocolate and other beverages
- Condiments and spices.

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A. E. Gopal
15.06.19

B.Sc. (HOME SCIENCE) PART-I
Session 2019-20
Group – II
Paper-B

INTRODUCTION TO RESOURCE MANAGEMENT

M.M.50

FOCUS :

This course deals with the management of resources in-the family with particular reference to mobilising all the resources for achieving the family goals. It also deals with the factors motivating management and management applied to specific resources. The course intends to create awareness, appreciation and understanding of environment. The major environmental issues and problems are to be critically analysed for inculcating environmental consciousness among the learners and to help them take individual/ household/community level decision for making the physical environment conducive for . family living. The course content has to be taught at an elementary level.

OBJECTIVES :

1. To create an awareness among the students about, management in the family as well as the other systems.
2. To recognize the importance' of wise use of resources in order to achieve goals.
3. The physical environment and its components and the major issues.
4. The impact of human, activities on environment.
5. The action needed for checking environmental threats

Human Value

THEORY

Unit – I

- 1- Introduction to Resource Management Definitions
- 2- Types of Management
- 3- Advantages of Management Limitation in Management

Unit – II

Factors Motivating Management

- 1- Goals – Definition, Types and Utility
- 2- values – Importance, Sources, Classification, Characteristics, Changing values.
- 3- Standards – Conventional and non conventional – qualitative, quantitative, conventional and non conventional.
- 4- Relation between values, goods and standard

Unit – III

(1) Resource

- (a) Types of Resources
- (b) Characteristics of Resource
- (c) Factors affecting use of Resources
- (d) Relation to Resources to Management

(2) Decision Making –

- (a) Definitions and Importance
- (b) Steps of Decision
- (c) Factors affecting decision
- (d) Resolving conflicts.

RS
13.6.

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13.6.19

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13/5/19

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13.06.19

B.Sc. (HOME SCIENCE) PART- I
Session 2019-20
Group – III
Paper- A
INTRODUCTION TO HUMAN DEVELOPMENT

M.M.50

FOCUS:

This is an attempt to guide undergraduate students in understanding of the field of Human Development in a basic way.

A Concious deviation is taken from the stage-wise approach to the life span so as to make the course more meaningful and to allow for flexibility in understanding human development, as a continuous process. All topics are given a cross-cultural orientation. The major topics covered are : An overview of the field ; factors important for growth and development; different dimensions of development across the life-span namely, physical and motor, cognition, language, socio-emotional and personality and finally relevant issues in human development and social change.

Techers are encouraged to use the points of emphasis mentioned and culturally relevant examples to stimulate throught and participatroty discussion. The use of Video-films is also recommended to suppliemnt course content and facilitate discussions. This course purports to create awareness and appreciation for the role and functions of marriage and family as basic institutions. The changing trends, the dynamics of adjustment and contemporary problems and issues are to be critically analysed for developing better understanding of needs, adjustment areas and intervention strategies.

OBJECTIVES:

The student will –

1. Acquire knowledge and insights about the dynamics of contemporary marriage and family systems in India.
2. Become acquainted with the concept, goals and areas of adjustment, relationship within the family.
3. Become aware of her changing roles and relationships with the family.
4. Understand the dynamics of families in distress and crisis.
5. To introduce student to the field of human development-concept, dimensions and interrelations
6. To sensitize students to social and cross-culture contexts in human development.
7. To sensitize students to interventions in the field of human development

THEORY

Human Value

Unit –I An overview on the field of HD

- i what is human development? Why do we need to studyit? defenition of development,ie. family and society, variations across cultures and individual differences inHuman development.
- ii family and child welfare ;a. family welfare programme, b. childwelfare programme,
- iii Growth and Development
 - a. Understanding growth and development (Definitions)
 - b. General Principles of development.
 - c. Constraints and facilitators in growth and development (influences of heredity and environment)

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- Genetic inheritance: (i) fertilization (ii) Number of chromosomes. (iii) the unique third pair determines sex, (iv) genotype and phenotype, (v) sex linked genetic effects.
- Environmental per-requisites: (i) Nutrition, (ii) opportunities.
- Interaction between environment and inheritance: (i) genes provide the predisposition, range and direction of development, (ii) environment determines the extent or limit.
- The beginning of a new life
- Prenatal development
- Prenatal influences on the child: biological risks, age of mother, physical characteristics, illness, diet and nutrition, stress and emotional strains environmental hazards.

UNIT-II Physical Development

- The new born physical appearance: size, weight, bodily proportions, sensory capacities i.e. hearing, vision, taste, smell, touch, temperature and position.
- Changes in size, shape, muscles and bones, and brain as it continues through : infancy end of infancy,
- Linking physical and motor development.
- Motor development:** reflexes in infancy; major milestones through end of infancy,
- Physical and motor development can be influenced through : (i) Maturation, (ii) nutrition, (iii) monitoring and healthcare, (iv) stimulation, (v) practice.

UNIT-III Cognitive Development Across the Life Span

- a. Cognitive development
- The concept of intelligence
 - (A brief introduction to Piaget's theory)introduce stages without much elaboration : sensorimotor stage in infancy concrete operational stage in childhood changes in remembering the reasoning in middle childhood, formal operations in adolescence, fluid and crystallized intelligence in adulthood, declining cognitive abilities in late adulthood and old age.).

The Development of Language Across the Life Span

Language as a form of communication

- Functions of language : expressing wishes, controlling others, interacting with others, expressing individuality, exploring the world, pretending, using language to communicate/share information, understanding our society and culture, reasoning.
- Communicating before language development i.e. the stages of vocalization : undifferentiated crying, differentiated crying, babbling, Imitation of sound, patterned speech.
- Beginning to use language : one or two word utterances; early sentences; telegraphic speech; understanding metaphors, smiles, irony, reflecting on superficial and deeper level meanings of sentences.
- Uses of language; conversational acts (non-verbal) conversational conventions, learning to listen.
- Language development can be influenced through : (i) maturation, (ii) stimulation
- Deviations in language development : in language development : Possible decline of language in the aged, (speech- impairment and disorders to be introduced briefly).

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UNIT-IV

Socio-emotional Development Across the Life Span

- a. Understanding social and emotional development
- b. Social development :
 - Introduce socialization as an important part of the process of becoming human.
 - Social milestones : beginning with the emergence of the social smile; attachment, separation, anxiety, acquiring sex roles in childhood, induction into occupational roles by adulthood, social isolation and consequences in late adulthood and in the elderly.
 - Patterns and role of parent-child interactions, interactions with siblings and peers; social and cultural interactions through infancy to old age.
- c. Emotional development
 - Emotions serve two adaptive functions : (i) motivating and (ii) communication.
 - Basic emotional reactions (joy, fear, jealousy, anger, sadness, aggressions)
 - Components of emotion : (i) emotions are elicited by the context, (ii) include bodily activity, (iii) emotional expressions are made through facial expressions, bodily movements, vocalization, (iv) labelling emotions. Emotions may be acquired as a result of/by the Influence of
 - (i) internal and external sources, (ii) cognition, (iii) learning and (iv) social reinforcement.
 - Milestones of emotional development through infancy and childhood emotional confusions and adolescence, stability of emotions in adulthood and old age.
 - Emotional problems : (i) depression, (ii) over-activity, (iii) aggression.

Personality Development Across the Life Span

- a. Personality Development
- b. Personality may be influenced by : (a) heredity, (b) environment (parenting styles, peer groups, social interactions, early childhood experiences, life events, support available in a community etc.)
- c. The role of social norms in personality development. Deviant personalities : (juvenile delinquency in childhood and anti-social personalities in adulthood)

UNIT-V

Marriage

- a. Marriage as an institution : goals, rituals, functions, changes and challenges.
- b. Mate selection : factors influencing, considerations of exogamy and endogamy, changing trends, arranged and personal choice of mates.
- c. Preparation for marriage, social emotional issues, financial concerns and exchanges, guidance and counseling.
- d. Marital adjustment, areas and factors influencing: planned parenthood.

Families with Problems

- a. Families with marital disharmony and disruption, dimension, casual factors.
- b. Families in distress, violence and abuse, dowry victimization, violence against women.

Interventions for Families in Trouble

- a. Counseling premarital and marital
- b. Public awareness and education programmes

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B.Sc. (HOME SCIENCE) PART-I

Session 2019-20

Group – III

Paper- B

TEXTILE AND CLOTHING

M. Marks: 50

FOCUS:

(A) Variety in clothing depends on variety of textiles. Though very few textiles were known to man earlier, presently, he is seeing newer textiles each one superseding to other. Their performance is also varying. It is essential for a student to have some basic knowledge of these textiles to select the right kind of fabric for specific use.

(B) Clothing is important for protection, comfort, personality and growth in relevant age groups. The course should deal with, keeping in view the activities of concerned age group with consideration for safety, ease of care and comfort.

OBJECTIVES:

To enable students to-

1. To acquaint with proper notion regarding choice of fabrics
2. To develop skills in clothing construction
3. To acquaint with different textiles and their performances
4. Impart knowledge on different textiles finishes

THEORY

Unit – I

1. Introduction of the Subject
2. Common Terminologies used in Textile
3. Properties of Textile Fibers

Classification of the textile fibres : History, composition, types, production & properties

- Natural Fiber – Cotton, Linen, Silk, Wool
- Man-Made Fiber – Rayon
- Thermoplastic Fiber – Nylon

Unit – II

1. Study of Yarn
 - Meaning, Yarn Making : Mechanical & Chemical
 - Types – Simple, Complex, Novelty and Textured yarn
 - number , yarn count , Yarn Twist

2. Methods of fabric construction

- Weaving : Handloom and its parts.
- Different types of weaves- Plain weaves, Floting weaves, Pile, Jaquard and Leno weaves.

3. Other methods of fabric construction : Felting, Knitting, Crocheting, Braiding & Lacing

Unit – III

1. Finishes : Meaning and purpose

- Physical finishes : Singeing , Napping ,Brushing ,Shearing, sizing , shrinking , tentaring, Calendaring etc.
- Chemical finishes : Bleaching & mercerizing

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- Special purpose finishes : wrinkle resistance , water resistant & water repellent , Flame retardant , crease resistance , soil resistant etc.
2. Identification of Fabric
 - Appearance test / Microscopic test
 - Burning test / Creasing test
 - Breaking test / Tearing test & Chemical test
 3. Importance of Clothing

Unit - IV

1. Dyes

- Definition and Classification
 - Different types of dyes : Natural & Synthetic dyes
 - Suitability of various dyes to different fibres
2. Dyeing methods of different stages of processing :
 - Fiber , yarn , piece , union & cross
 3. Household method of dyeing
 4. Colour fastness
 - Characteristics of colour fastness
 - Fastness to sunlight , crocking , perspiration

Unit - V

1. Printing

- Its significance
- Methods of printing : Block, Stencil, Screen & Roller printing
- Advantages and disadvantages of various methods of printing
- Faults in different printing methods
- Preparation of printing paste
- Preparation of cloth for printing
- After treatment of printed goods
- Resist dyed - Bandhej of Gujrat and Rajasthan

vocational

Professional Ethics

PRACTICAL

1. Identification of yarn
2. Identification of textile fibres :
 - Visual test / Microscopic test
 - Burning test / Chemical test
3. weaves and their variations :
 - Plain weave / Twill weave
 - Satin & Sateen weave
 - Honeycomb & Birdseye weave

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- Block printing / Screen printing / Stencil printing
5. Tie & dye
 6. Simple dyeing of different fabrics
 7. Finishing of fabric before dyeing & printing
 - Scouring
 - Bleaching
 - Designing
 8. Bleaching & whitening
 9. Starching
 10. Laundering of cotton, silk, wool and synthetic fabric
 10. Batik

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ethics*

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- 9. Business Economics
- 10. Computer Application

B.Sc. (HOME SCIENCE) PART-I

Session 2019-20

Group - IV

Paper-A

COMMUNITY DEVELOPMENT

M. Marks: 50

FOCUS

The focus of the course is on the evaluation of approaches to community development in general and in our country in particular. The course focuses on the structure of rural and urban communities, the systems comprising of interacting structures and interlocking of these to form the existing society. It will also indicate the relationship of social change to changes in the structures and systems that exist. It is expected to help students to orient themselves to be part of the development process.

OBJECTIVES: To enable students to

1. Be aware of the approaches to development
2. Develop faith in the capacity of the people, to take responsibility for their own development.
3. Understand the existing support structures for development efforts.
4. Understand the role of non Govt organizations in community development.
5. Understand the socio - economic structures and systems that make up the rural and urban communities.
6. Understand the meaning of social change through development plans and programs in the context of the exiting socio-economic structures and systems.
7. Recognise one's own role in the development process.

THEORY

UNIT-I Development:

- a. Definitions, types - large scale and centrally planned and small scale and locally planned.
- b. Goals, the purpose of developmet - processes of development - the input process and social action process.

Historical Perspective of Development Approaches:

- a. The Capitalistic approach.
- b. The welfare approach
- c. The Gandhian approach
- d. The modernisation approach
- e. The institutional and social justice approach

Critical Development Issues :

- a. Massive poverty
- b. Food security

Community Development in India :

- a. Evolution of community development programme in India since Independence.

UNIT-II Support structures and their Functions :

- a. Central Social Welfare Board
- b. State Social Welfare Board
- c. National Level Voluntary Agencies such as CAPART, KVIC.
- d. Elected Panchayats.

Human value

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Community Development Programme Approaches :

- a. Multi-purpose
- b. Target group
- c. Growth centred
- d. Area
- e. Minimum needs
- f. Antyodaya
- g. Integrated

Home Science and Community Development :

Scope of Home Science Extension for meaningful participation in community development in India

UNIT-III

(a) **Analysis of Social Relations of Groups Social Stratification -Caste System (Micro/Macro)**

Differential ranking of groups as superior and inferior caste-groups; changes that have taken place/expected; abolition of untouchability, inter-caste collaboration, fusion of sub-castes; impact of reservations; social inequalities - extent of acceptance or opposition.

(b) Community development organization.

(c) Role of audio visual aids in community development.

UNIT-IV

Poverty Analysis (Micro/Macro) causes of poverty and The number and proportion of poor (in general and with reference to gender in particular) prevalence of hunger and malnutrition, availability and accessibility to drinking water and sanitation facilities, health facilities, clothing and housing facilities, education facilities. Unemployment pattern and indebtedness; causes of poverty and inequalities; programs for poverty alleviation. Poverty line.

Social Relations in Religion and Culture (Micro/Macro)

a. Religions represented - the role of religion in the lives of people.

b. Popular expression of beliefs and attitudes that promote fatalism or confidence in themselves.

c. Religious and cultural customs and organisational patterns that oppose the values of social justice, equality, liberty and solidarity.

UNIT-V

Analysis of Social Relation to Environment (Micro/Macro)

a. Customs, mores, rules, regulations that are eco-friendly and that are not eco-friendly.

b. Changing patterns of production and consumption-organic farming, soil and water conservation measures, recycling of wastes, use of bio-degradable articles etc., impact of these in the communities

Gender Analysis -

a. The concept of Gender as distinct from sex.

b. The division of labour.

c. Access and control of resource.

d. Changes in the means of gaining access to resources

Approaches and Methods of Socio-Economic Analysis-

a. Rapid Rural Appraisal

b. Participatory Rural Appraisal

c. Surveys, case studies, observation

d. Participant observations.

Genders

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THEORY

UNIT-I

Personal Growth and Personality Development (Through exercises, role play, discussions)

- The challenge : understanding and managing oneself : being aware of one's strengths and weaknesses.
- Personality Development: Factors and influences : emotional and motivational aspects; assertion vs. aggression.
- Peer pressures : Issues and management; group conformity and individualism as co-existing aspects.
- Conflicts and stresses, simple coping strategies.
- Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values)

Gender.

UNIT-II

Empowerment of Women

- Women and Development : The personal, familial, societal and national perspectives.
- Capacity building for women : Education, decision-making abilities and opportunities, awareness and information on legal and political issues.
- Women's organizations and collective strength : Women's action groups, women's participation in development initiatives.
- Study and discussion of life histories, case studies of illustrious Indian women from different walks of life (eg. Indira Gandhi, Jhansi ki Rani, Medha Patkar, Kiran Bedi, Vijayalaxmi Pandit, Sudha Chandran, Anutai Wagh, Ha Bhat, Bhanvari Deyi).
Brief sketches/ profiles of women's organization and collective and activist efforts to improve the quality of life or tackle issues of concern (e.g. SEWA, Women's co-operatives, WIT).

Note : Students must be sensitized and made aware through assignments to identify and study the Contributions of women in their own regional areas as also in the context of national perspectives. Cases of individual and collective / organized women's strengths must be discussed with examples from local / regional / levels. Each student may prepare profiles of one individual and one collective group.

UNIT-III Home Science Education as Empowerment

- The interdisciplinarity of Home Science Education.
- The role of Home Science Education for personal growth and professional development.
- Home Science as holistic education with integration of goals for persons, enhancement and community development.

UNIT-IV Some Significant Contemporary Issues of Concern

- Gender issues: inequities and discriminations, biases and stereotypes; myths and facts.
- Substance abuse : Why and how to say no.
- Healthy Habits : In relation to physique, to studies, to heterosexual interests.
- AIDS : Awareness and education.

Note: Teachers/facilitators must be knowledgeable and equip themselves sufficiently; orientations/training sessions for facilitatory

UNIT-V Computer Fundamentals :

- Overview about computers
- Components of a computer
- Input/output devices
- Secondary storage devices

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UNIT-I

THEORY

Personal Growth and Personality Development
(Through exercises, role play, discussions)

- a. The challenge : understanding and managing oneself : being aware of one's strengths and weaknesses.
- b. Personality Development: Factors and influences : emotional and motivational aspects; assertion vs. aggression.
- c. Peer pressures : Issues and management; group conformity and individualism as co-existing aspects.
- d. Conflicts and stresses, simple coping strategies.
- e. Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values)

Gender.

UNIT-II

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Professional Ethics

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हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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क्र. 2960/A /अका./2020
प्रति,

दुर्ग, दिनांक 10/9/2020

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर भाग-दो के पाठ्यक्रम-विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-दो के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2020-21 से लागू किये जाते हैं:-

1. बी.ए. - आधार पाठ्यक्रम-हिन्दी भाषा, हिन्दी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, मानवविज्ञान, संस्कृत, सांख्यिकी प्राचीन भारतीय इतिहास, भूगोल, मनोविज्ञान
2. बी.एस-सी.- आधार पाठ्यक्रम-हिन्दी भाषा, जीव विज्ञान, मानवविज्ञान, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, गणित, भौतिक शास्त्र, प्राणीशास्त्र, सूक्ष्मजीव विज्ञान, वनस्पतिशास्त्र, भूविज्ञान, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3. बी.ए./बी.एस.सी (गृह विज्ञान) - आधार पाठ्यक्रम - हिन्दी भाषा एवं गृह विज्ञान।

उपरोक्त विषयों को शिक्षा सत्र 2020-21 से संशोधित रूप में स्नातक स्तर भाग-दो के लिए लागू किया जाता है स्नातक स्तर भाग-एक हेतु सत्र 2019-20 में लागू पाठ्यक्रम मान्य होंगे एवं भाग - तीन के पाठ्यक्रम यथावत रहेंगे।

टीप:- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय के परीक्षा विभाग एवं वेबसाईट पर प्रकाशित करने हेतु वेबसाईट प्रभारी को उपलब्ध करा दी गई है।

कुलसचिव

क्र. 2961/A /अका./2020
प्रतिलिपि:-

दुर्ग, दिनांक 10/9/2020

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 परिपेक्ष्य में सूचनार्थ।
2. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।

सह. कुलसचिव (अका.)

B.Sc. (HOME-SCIENCE) PART II
Session 2019-20
Group -II
Paper - A
CLINICAL NUTRITION & DIETETICS

M. Marks: 50

Focus : The course encompasses the various stages of the life cycle and how nutrition is critical at various stages. It briefly familiarizes students with the role of nutrition in common Ailments.

- Objectives:** This course will enable students to -
1. Understand the concept of an adequate diet and the importance of meal planning.
 2. Know the factors affecting the nutrient needs during the life cycle and the RDA-for various age groups.
 3. Gain knowledge about dietary management in common ailments.

THEORY

UNIT-I Definition of Health & Nutrition

Dimensions of Health (Physical, Psychological, emotional & Spiritual)

Energy Requirements - Factors affecting energy requirements-BMR,
Activity, age, climate, diet - induced thermogenesis (SDA physiological conditions.

Concept of nutritionally adequate diet and meal planning

- (a) Importance of meal planning
- (b) Factors affecting meal planning-Nutritional, Socio-cultural, Religious, Geographic, Economic Availability of time.

UNIT-II

Nutrition through the life cycle -

(At different activity and Social economic levels) requirements, nutritional problems, food selection.

- (a) Adulthood
- (b) Pregnancy
- (c) Lactation
- (d) Infancy
- (e) Pre-School
- (f) Adolescence
- (g) Old age

Human value

UNIT-III Principles of diet therapy

- (A) Modification of normal diet for therapeutic purposes, full diet, soft diet, Fluid diet, Bland diet.
- (B) Energy modification and Nutrition for weight management- Identifying the overweight and obese, etiological factors contributing to Obesity. Prevention & treatment, low energy diets.
- (C) Under weight - etiology and assessment.
- (D) High energy diet, Diet for febrile (fever) conditions & surgical condition.
Nutritional Anemia
- (E) Fevers - Typhoid

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Etiology, Symptoms & diet management of the following -Diarrhoea, Constipation, Peptic ulcer, Jaundice, Viral Hepatitis, Cirrhosis, musculoskeletal disease, Arthritis, Gout.

UNIT-V

Diet in disease of the endocrine -

Pancreas - Diabetes mellitus - classification, symptoms, diagnosis, Dietary care & Nutritional, management of diabetes mellitus. Insulin therapy, Oral Hypoglycemic agents, special dietetic food, sweeteners & sugar substitutes, Diabetic coma, Juvenile Diabetes.

Diseases of the Cardio Vascular system -

Atherosclerosis Etiology & Risk Factors.

Hypertension - Etiology, prevalence Nutritional management & prevention.

Renal diseases - Etiology, characteristic, Symptoms & Dietary management of Glomerulonephritis- Acute & Chronic

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5. Shils, M.E. Olson, J. A. Shike, M. Eds. 1994 : Modern Nutrition in Health and Disease, 8th edn., Lea and Febiger a Waverly Company.

Group-II, Practical-A

1. Planning- Preparation of Normal and Therapeutic diet in relation to special and nutrient requirements (Any 15)
 - 1 Adult
 - 2 Pregnancy
 - 3 Lactation
 - 4 Constipation
 - 5 Diarrhoea
 - 6 Obesity
 - 7 Underweight
 - 8 Peptic Ulcer
 - 9 Jaundice
 - 10 Viral Hepatitis
 - 11 Cirrhosis
 - 12 Acute glomerulonephritis
 - 13 Chronic glomerulonephritis
 - 14 Diabetes mellitus (using food exchange list)
 - (i) With Insulin
 - (ii) Without insulin
 - 15 Hypertension (Atherosclerosis)
 - 16 Anemia
2. Standardization of recipes

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B.Sc. (HOME-SCIENCE) PART II
Session 2019-20
Group -II
Paper - B
TEXTILE AND FIBRE SCIENCE

M. Marks : 50

THEORY

Unit - I

1. Principles of laundry and its methods
2. Equipment for washing :
 - Washing equipment
 - Drying equipment
 - Finishing equipment
 - Storage equipment
3. Cleaning materials and Detergents :
 - Soap and detergent
 - Other cleaning agents
4. Water : Composition, Classification, Hardness of water, Methods of removal of hardness

Unit - II

1. Useful suggestions for laundering
2. Washing of different kinds of fabrics : Cotton , wool , silk & synthetic
3. Bleach agents and other reagents used in laundry
4. Starch : types and uses
5. Blue : types and uses

Unit - III

1. Dry Cleaning
2. Stain removal : classification and technique of stain removal
3. Disinfection of clothes
4. Care and Storage of fabrics
5. Consumer problems and protections

Unit - IV

1. Equipment and supplies used in clothing construction :
 - Measuring equipment
 - Cutting equipment
 - Stitching equipment
 - Finishing equipment
2. Sewing machine: its parts & function, maintenance of machine, problems faced and remedies.
3. Selection of fabric for dress according to Climate, Age, Occupation, Personality, Occasion, Figure Type, Fashion etc.
4. Wardrobe Planning

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1. Tailoring

- General Principles of clothing construction
- Taking body measurement for different type of garments
- Interrelationship Of Needles, Thread, Stitch Length, & Fabric
- Cloth Estimation For Different Garments
- Drafting & Draping

2. Pattern Making

- General Instructions For Pattern Making
- Method
- Types & Layout

3. Fitting

- Fundamentals Of Fitting
- Problems Area In Fitting
- Factors Affecting Good Fit

vocational

Group-II, Practical-B

Printing - Block, screen, tie & dye, stencil printing. -

1. Stain Removal
2. Laundering of cotton, rayon silk wool & synthetics etc.
3. Bleaching & whitening
4. Starching
5. Care of household linen
6. Simple dyeing of different fabric.
7. Tie and Dye techniques
8. Batik
9. Finishing of fabric before dyeing & printing, Scoring, bleaching, Desizing.

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Course: Introduction to Fashion Illustration

1. Tate, S.L., Edwards, M.S. 1987 : The complete Book of Fashion Illustration, New York, Harper & Row Publications, 2nd Edn.
2. Allen, Anne & Seaman, Julian : Fashion drawing : basic principles, B.T. Batsford, London, 1993, 108p.
3. Barnes Colin : Fashion Illustration, Macdonald, 1988.
4. Chowdhry, Sonia : A Unique phenomenon : understanding the dynamics of fashion, Clothesline 11 (11) Nov. 1998 p. 75-77
5. Ewing, Elizabeth : History of twentieth century fashion, Elizabeth Ewing, London, 1974, XI, 300P.
6. Ireland John Patrick 1976 : Drawing and Designing Men's Wear, London B.T. Brandford Ltd.

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B.Sc. (HOME -SCIENCE) PART -II

Session 2019-20

Group -III

Paper - A

HUMAN PHYSIOLOGY & COMMUNITY NUTRITION

M. Marks: 50

THEORY

Unit - I

An introduction of Physiology and Anatomy

1. Cell - Structure and functions of human cell.
2. Tissues - Classification and structure
3. Cardiovascular System -
 - a. Blood - Composition & Functions
 - b. Heart - Structure and Functions
 - c. Vessles - Structure and Functions of Artery, Veins and Capillaries.

Unit - II

Gastrointestinal System :

1. Structure and Functions of various organs of the gastrointestinal tract.
2. Digestion and absorption of food.

Nervous System :

- (a) Elementary Anatomy of Nervous System
- (b) Functions of different part of the brain and spinal cord.
- (c) Autonomic, sympathetic & parasympathetic nervous system.

Unit - III

Excretory System :

1. Structure and functions of kidney, bladder, formation of urine.
2. Structure and functions of skin.
3. Regulation of temperature of the body.

Respiratory System:

1. Structure of Lungs.
2. Mechanism of respiration and its regulation.
3. Transportation of Gases

Special Sense Organs:

1. Structure and functions of eye, Ear, Nose, Skin & tongue.

Unit - IV

Musculo Skeletal System

1. Types of Muscles and its functions.
2. Skeletal System - Types of Bones.

Reproductive System -

Structure and functions of male & female reproductive organs.

Unit - V

Concept and Scope of Community Nutrition:

1. Nutritional problems of the community & implications for public health.
Common Problems in India - Causes (Nutritional and Non Nutritional Problems)
Incidence of Nutritional problems, signs, symptoms & Treatment.
Protein-Energy Malnutrition (PEM)
2. Prophylaxis Programmes to Combat Nutritional Problems in India.
3. Food borne disease-

- Food Poisoning
- Food Infections

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B.Sc. (HOME-SCIENCE) PART- II
Session 2019-20
Group -III
Paper - B
COMMUNICATION PROCESS

M. Marks: 50

Focus:

The course focuses on the process of communication, especially in development work in rural and urban areas.

Objectives: To enable students to –

1. Understand the process of communication in development work ;
2. Develop skills in the use of methods and media ; and
3. Be sensitive to the interests and needs of the people and the power of the media and methods in catering to these needs and interests.

THEORY

- UNIT-I** Concept of development communication
- Meaning and importance of communication in development
 - The purpose of communication
 - Existing patterns of communication
 - Factors that help or hinder communication
- UNIT-II** Communication Process
- One-way and two-way or interactive communication
 - Gaps in communication or distortions in transmission of message and their Causes
 - Importance of two way communication
 - Basis for effective, interactive communication.
 - Attitude of 'respect for others
- UNIT-III** Methods of communication in Development Methods to reach individuals
- Personal conference
 - Interviews
 - House visits
 - Exhibits
 - Methods to reach small groups
 - Illustrated lecture
 - Group discussions
 - Co-operation
- UNIT-IV** Role Plays
- Demonstrations
 - Workshop
 - Camps
 - Radio announcements/programs
 - Newspaper stories
 - Posters
 - Videos, films
 - Television programmes
 - Letters, folders or pamphlets
 - Public meetings

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IT-V

- Media for development communication
- Folk media Songs Stories Street-theatre
- Games Arts
- Puppet play Print media
- Posters Pamphlets, leaflets
- Newspapers - articles, stories
- Periodicals - articles, stories, songs
- Books
- Cartoons
- Audio/Visuals, Audio-Visual Media
- Audio-tapes, radio broadcasts
- Slides, pictures, drawings, photographs etc.
- Videos, telecasts
- Films-documentary, feature

Group-III, Practical-B

(ANY SIX)

1. Organising group discussion.
2. Organising group demonstration.
3. Preparation & Presentation of Audio visual aids, i.e. Posters, Charts, Cartoons, Models
Puppets.
4. Problem/need identification "of a community.
5. Planning an educational programme.
6. Evaluation of the effectiveness of methods and media.
7. Visit to Radio Station/T.V. Centre/Printing Press.
8. Preparation of Drama based on Social Development

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B.Sc. (HOME-SCIENCE) PART- II
Session 2019-20
Group -IV
Paper - A
LIFE SPAN DEVELOPMENT

M. Marks: 50

Focus :

This course covers the entire life span and traces the various developmental stages. Its encompasses in scope development in utero, infancy up to senescence identifying critical concerns in Socio-cultural perspectives.

To develop understanding of various methods and materials, which can be used-while working with children. The emphasis is on promoting creativity and use of different materials to allow for optimum development.

Objectives : To become acquainted with developmental stages from birth to old age.

1. To develop awareness of important aspects of development during the whole life span.
2. To know the requirement of infants and Toddlers and develop skills to create play materials and designing learning experiences.
3. To understand the significance of various creative activities and teachers role in implementing them.

Note : For each of the following stages of development, the-influence and inter-actions of sociocultural and environmental factors needs to be discussed.

THEORY

Human value

UNIT-I

1. Life Span development and need to study development through the life cycle. Inter-relationship between the aspects of development.
2. Childhood period (2 to 12 years) - Definition, Characteristics and Developmental tasks. "Review (2-6 yrs to 6-12 yrs) of different developmental areas (Physical, motor, Social, emotional, intellectual).

UNIT-II

Adolescence (13 to 18 years)

1. Definition, Developmental tasks.
2. Physical Development - Puberty, growth, spurts, Primary and Secondary sex characteristics, early and late maturing adolescents.
3. Identity - Definition, body image, positive and negative outcomes (Role confusion, ego-identity)
4. Heightened emotionality- Meaning, causes, expression, characteristics of emotional maturity, conflict with authority, coping up strategies.
5. Problems - Drug and alcohol abuse, psychological breakdown (Behaviour) STD and AIDS.

UNIT-III

Adulthood (19 to 60 years) and ageing- (Early adulthood 19 to 40 years) Definition and characteristics Development tasks, significance of the period, responsibilities and adjustment - New family, parenthood, independence, financial matters.

1. Middle Adulthood (41 to 60' years), Definition, physical changes (senses, diseases- Transition Period.
2. Menopause- Health issues.
3. Stresses in middle age, coping with stress to family.

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4. Preparation for retirement.
5. Late Adulthood and Ageing – Definition.
6. Physiological changes, and health problems.
7. Retirement-effect of retirement on self, family, society, financial problems faced.
8. Recreational interest of the aged.
9. Issues- Old age homes, loneliness, living in joint family, prolonged illness. (Plan visit to old age homes.)

UNIT-IV

Infancy and Toddlerhood (Emotional Aspect)

1. Importance and ways of meeting child psychological needs to promote feeling of security, trust and acceptance.
Activities according to developments for various age groups
- (A) 0-6 months - Activities for simulating and sessions motor experiences with emphasis on seen, hearing, touching, feeling sensation and movements.
- (B) 7 to 12 months - Integration of experiences involving more than one sense to deeper sensory motor experiences promotive manipulation, concept formation, communication and perceptual discrimination.
- (C) 13 to 24 months - Promotion of co-ordination and control of body movements, gross and fine motor skills. Strengthening concept formation, imagination and communication through language promotion of problem solving, environment to explore and satisfy curiosity and develop confidence.
- (D) 25-36 months - Improvement in body movement and communication skills, social skills concept formation.

UNIT-V

Creativity

- Concept of creativity and highlights of the role of creative expressions in overall development of children.
- Creative expressions, Meaning and definition of creativity expressions.
- Role of teacher in planning and fostering creative expressions.
- Creative expressions.

Art Activities

Painting and graphics

- (a) Painting with brush, drawing with crayons, chalk, rangoli on floor, finger painting. (Some special characteristics of this medium)
- (b) Values, materials required, use of substitutes from indigenous materials.
- (c) Teacher's role in conducting activities.
- (d) Stages in child art.

Tearing, cutting, pasting and collage, mural

- (a) Values, materials required and Teacher's role in conducting activities.
- (b) Development stages.

Printing

- (a) Types of printing i.e. block, vegetables, string, leaf, stencils, spray, crumpled paper, different textured surfaces.
- (b) Values, materials required techniques.

BLOCKS :

- (a) Some special features of this medium.
- (b) Types of blocks : hollow large blocks, unit blocks and small blocks.
- (c) Stages in block play.
- (d) Values, materials and accessories for block play.
- (e) Teacher's role

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B.Sc. (HOME-SCIENCE) PART- II

Session 2019-20

Group -IV

Paper - B

Consumer Economics

M. Marks: 50

THEORY

Unit - I

Consumer

- 1- Definition of consumer
- 2- Consumer rights and responsibility
- 3- Consumer buying habits convenience goods
- 4- Factors affecting consumer decision

Unit - II

Personal income

- (1) Types of income - real, money, psychic, national income, disposable income.
- (2) Saving and investment
- (3) Sources of investment
- (4) Factors affecting savings.
- (5) Ways of selecting investment

Unit - III

Consumer in the market

- (1) Market- Definition, types of market, functions, channels of distribution.
- (2) Buying motives - Primary, selective, rational, emotional and totranages.

Types of Products

Advertisement, Sales, Promotion packing

(3) **Consumer Buying Problems**

- (1) Adulteration- kinds and identification of adulteration.
- (2) Faculty weights and measure
- (3) Pricing
- (4) Legal - guarantee and warrantee contracts, installment buying

(4) **Buying process**

Unit - IV

Consumer Protection services

- (1) Organisations
- (2) Legislation - import laws for consumer protection
- (3) Consumer representation

Consumer and consumers problems- choice and buying problems of consumer

(4) **Consumer protective services**

- (1) Indian Standard Institution
- (2) Educational Institution
- (3) Consumer Co-operatives
- (4) Government Agencies Municipality

Unit - V

- (1) Consumer Decision making
- (2) Factors effecting consumer decision in the market
- (3) Good buy man ship
- (4) Consumer aides for decision making

Group-IV, Practical- B

- 1- Test for adulteration
- 2- Filling of different types of form to protect consumer
- 3- Filling of form of investment services
- 4- Activity of educate consumer
- 5- Collection of samples of different symbols for helping consumer buying .
- 6- Project preparation in any relevant area.

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SCHEME OF EXAMINATION

&

SYLLABUS

Of

B.Sc. (Home Science)

Part-3

Annual Exam

UNDER

FACULTY OF SCIENCE

Session 2017-18

(Approved by Board of Studies)

Effective from July 2017

विषय:- स्नातक स्तर के पाठ्यक्रम विनियमन
संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/
16.05.2019।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2019-20 से स्नातक है।

1. बी.कॉम. - आधार पाठ्यक्रम-हिन्दी भाषा एवं वा
अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महा
को अवगत कराने का कष्ट करेंगे।

B.SC.HOME SCIENCE

IIIRD YEAR

2017-2018

B.SC.HOME SCIENCE

IIIRD YEAR

2017-2018

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NUTRITIONAL BIOCHEMISTRY (Paper Code-0583)

UNIT-I

- (A) Introduction to Biochemistry - definition, objectives, scope and interrelationship between Biochemistry and other biological sciences.
- (B) Carbohydrates - Definition, classifications functions and properties of
- Monosaccharides - Glucose, Fructose, Galactose
 - Disaccharides - Maltose, Lactose, Sucrose
 - Polysaccharides - Dextrin, Starch, Glycogen
- Glycolysis, Gluconeogenesis, Glycogenesis
Glycogenolysis, Citric and Cycle.
Blood sugar regulation.

Human value

NUTRITIONAL BIOCHEMISTRY (Paper Code-0583)

UNIT-II

- (A) Lipids - Definition, composition, importance and classification
Fatty acids - Functions, properties
Significance of Acid value, Iodine value and saponification value.
Chemistry and function of Phospholipids, Glycolipids and sterols.
Metabolism - Beta Oxidation
- (B) Aspects of transport - Passive diffusion, Facilitated diffusion, Active transport

UNIT-III

- (A) Proteins - Definition composition function, and classification.
Amino acids - Essential and Nonessential
Metabolism - Urea cycle, Nitrogen balance, Amino acid pool
- (B) Enzymes - Definition, properties, classification, Mode of action of enzymes, factors affecting velocity of enzyme catalyzed reactions, coenzymes.

UNIT-IV

- (A) Hormones - Biological roles of hormones of Pituitary, Adrenal cortex and medull, Thyroid, Parathyroid, Pancreas, Sex glands.
- (B) Urine - Formation and Composition

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UNIT-V

- (A) Energy - Definition, Unit, calorimetry, caloric value of foods, BMR, RQ, SDA of Foods.
- (B) Nucleic Acid and Nucleoproteins - Chemistry, composition, structure, functions

1. PRACTICALS (Any Six)

1. Identification of Glucose, Fructose, Maltose, Lactose, Sucrose, Starch.
2. Colour and precipitation reactions of Protein.
3. Colour reactions of cholesterol.
4. Estimation of Glucose by Benedict's method.
5. Estimation of Ascorbic acid by Iodometric method.
6. Estimation of Glycine by Titration.
7. Estimation of Haemoglobin by acid haemolysis method.
8. Preparation of Haemin crystals.
9. Action of Salivary amylase on conversion of starch.

1. PRACTICALS (Any Six)

1. Identification of Glucose, Fructose, Maltose, Lactose, Sucrose, Starch.
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6. Estimation of Glycine by Titration.
7. Estimation of Haemoglobin by acid haemolysis method.
8. Preparation of Haemin crystals.
9. Action of Salivary amylase on conversion of starch.

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Group - II PAPER -B
FOOD PRESERVATION
(Paper Code-0584)

*Professional
Ethics*

UNIT-I

Food and its preservation,
Home and community level including commercial operations.
Principles of food Preservation
Causes of spoilage of food.

UNIT-II

Fresh Food Storage
Principles - Plant product.
Storage, animal product
Storage, Effect of Storage
Condition on quality

(Paper Code-0584)

Vocational

Canning - Principles and methodology influence of canning on food quality. Storage of canned foods.

UNIT-III

Pasteurisation
Effect on food quality.
Storage of pasteurised food.

Drying & Dehydration

Methods used and effect on food quality. Types of driers. Storage and deterioration of dehydrated food products.

UNIT-IV

Use of low temperature

Refrigeration and freezing methods, principles and applications. Preparation of foods for freezing influence on food components and structure. Self-life of frozen foods

Pickling and Fermentation

Pickles, chutneys, ketchups sauces. Fermentation - Types, products and method use
Establishment of a small scale industry / cottage industry.

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Use of low temperature

UNIT-V

Chemical Preservatives

Preparation of Fruit, Juices, Squashes, Fruited Syrups, Cordials, Jam Jelly.

High Acid & High Sugar Products –

common defects, Preservation of crystalized and glazed fruits.

Nutritional Implications of food processing

Causes for loss of vitamins and minerals, Enrichment, Restoration and Fortification

PRACTICALS: (Any Six)

1. Preparation of Jam, Jellies marmalades.
2. Preparation of Pickles & chutneys.
3. Dehydration of Vegetables & Fruits.
4. Preparation of synthetic syrups & squashes.
5. Preparation of Sauces.
6. Preparation of Papad, Badi, Chips.
7. Survey of market products.
8. Packaging.

professional
Vocational

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5. Lehninger, A.L. Nelson, D.L. and Cox, M.M. 1993: 2nd Ed. Principles of Biochemistry, CBS Publishers and distributors.
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7. Devlin, T.M. 1986: 2nd Ed. Textbook of Biochemistry with clinical Correlations John Wiley and sons.
8. Murray, R.K. Granner, D.K. Mayes, P.A. and Rodwell V.W. 1993 : 23rd Ed. Harper's Biochemistry, Large Medical Book.

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GROUP-III

PAPER-A

M.M.-50

EARLY CHILDHOOD EDUCATION (Paper Code-0585)

Code - 34113 + 34114 cr T5 + P2 Pol/wk 5 + 4

FOCUS-

The course focuses on need to provide various early childhood care and educational facilities through different programmes, for early childhood education. Types and present status of ECCE programmes are covered in this course. The recent policies affectionary young children are also included.

The course introduces students to the concept of curriculum for all round development of children. The main emphasis is on various components of curriculum to be included in daily program through medium of play. Method of learning by doing which forms the basis for understanding and knowledge is extended to the first two years of primary school.

OBJECTIVES:-

1. To know importance of early childhood care and significance of intervention programmes for early child development.
2. To understand major theoretical approaches and implication for early child development.
3. To become acquainted with current policies and programs in ECCE.
4. To meaning of curriculum and various components to be included in the daily programmes to promote all round development of children.
5. To recognize role of play in children's development.
6. To understand goals, principles, factors and approaches used in programme planning.
7. To recognize the advantages of project method and learn to use integrated approach in the development of daily programme.

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Significance and objectives of early childhood care and education.

1. Significance of early childhood years in individual's development.
2. Meaning and need for intervention programmes for better growth and development.
3. Objectives of ECCE.
4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group: day care.

UNIT-II

Current Status and Expansion of Scope of ECE to ECCE

- Expansion from ECE to ECCE.
- Current Status of ECCE programme.
- Objectives: staff qualifications, teacher-children ratio, indoor and outdoor play space and play facilities, equipment, curriculum and evaluation.
- Admission tests and effects on children.
- Effects of pressures on young children due to formal education.
- Need for ECCE programmes to provide quality care where mothers are at work.
- Historical overview of ECCE.
- Global perspective - views of educationists - Froebel, Mac Millan, sister, Deweu and Montessori,
- ECE in India: Overview of pre and post-independence period.
 - Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh.

Human
value

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Recent Developments: Policies, Institutions and contributions of NGOs

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- national policy on children.
- National policy on education 1986.
- Adoption of Ram Joshi Committee Report on Child Education by Government of Maharashtra.
- Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs.

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UNIT-III

- Meaning of curriculum, Foundation of curriculum development.
- Impact of play as means of development and learning.
- Developmental stages of play.
- Types of Play - Solitary play, parallel play, associative play and cooperative play.
- Functions of play - play as a means of assessing children's development.
- Teachers Role in creating environment and Promoting play.
- Classical theories of play - Surplus energy theory relaxation theory, Pre-exercise & recapitulation theory.

Programme Planning

UNIT-III Approaches to learning: Incidental and planned learning.

- Principles of programme planning :
 - from known to unknown, simple to complex, concrete to abstract.
 - Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.
 - Factors influencing programme planning.
 - Formal versus non-formal approach in education: advantages and disadvantages.
 - Integrated learning approach or project method that is covering various components of curriculum that is focussing on one topic/theme at a time.
 - Short and long term planning.

UNIT-IV Languages

- Goals of language teaching.
- Readiness for reading and writing. Meaning of readiness.
- Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.

Mathematics

- Importance of number and mathematics.
- Number as a language and history of its development.
- Abstract nature of number.
- Mathematical readiness.
- Analysis of prerequisite skill for 'number classification, comparing, seriation,

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patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.

- Decimal system of numeration (base 10)
- Number line-position and relevance of zero.
- Operations and relevant rules and properties; subtraction, multiplication and division.
- Two and three dimension shapes, properties, characteristics.
- Basic principles of measurements 0 time/distance, weight, capacity and money.

Environmental studies

Environmental (2)

- Scope of environmental studies.
- Importance and goals of environmental studies.
- Content: to conclude understanding from biological, physical and social environment.

UNIT-V Project method

(2)

- Introduction
- Meaning and advantages of using project method.
- Planning
- Resource unit.

Human value

Alternative to Home Work

(2)

- Disadvantages of learning by role.
- Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.

Evaluation

- Need for evaluation.
- Formative and summative evaluation.
- Methods of evaluation: Observations.
- Evaluation of daily work, tools for evaluation
- Reporting to parents.

PRACTICALS: (any four)

(30)

1. Plan three activities for children: list objectives, analyst tasks to achieve goals, select and organize instructional and learning materials, teacher's role, preparation of evaluation sheets i.e. chick list, rating scale.

[Handwritten signatures and dates]
22/7/17 22/7/17 22/7/17

Group-III PAPER-B

M.M.-50

EXTENSION EDUCATION (Paper Code-0586)

UNIT-II

1. Concept of Education
 - (a) Meaning of Extension
 - (b) Origin of Extension
2. Extension Education Process
 - (a) Environment for learning
 - (b) Role of educator
 - (c) Role of the people participants
3. Communication Process

UNIT-II

1. Concept of adult / non formal education
 - a. Meaning
 - b. Purpose
2. Five Year Plans
 - a. History of planning in India.
 - b. Five year plans and their focus.
3. Planning at different levels - National to Grass roots.

Human
Value
value

UNIT-III

1. Programmes to enhance food production
 - a. National food production programmes.
2. Poverty alleviation efforts
 - a. Programmes for poverty alleviation for rural and urban areas.
 - b. Current programmes for rural and urban poor.

UNIT-IV

1. Programmes for women and children
Women as target groups - specific measures for women and children such as DWCRA, ICDS, IMY. Current programmes for women as initiated and implemented by the different ministries and Departments.
2. Role of NGOs
Need for participation of Non-Governmental organisations in developmental efforts.
Encouragement given NGO's - Role of CAPART.

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Group - IV

PAPER - A

FOUNDATION OF ART AND DESIGN (Paper Code-0587)

M.M. 50 Cr - T3 P3

Introduction to foundation of art

1. Design, Definition and types:- Structural and Decorative
2. Elements of design :-
 1. Line
 2. Size
 3. Form
 4. Structure
 5. Space
 6. Pattern
 7. Shape
 8. Light - Characteristics and Classification
 9. Study of Colour - classification, dimensions, colour schemes and effect.

3. Principles of design - definition and their characteristics and types :-

1. Balance
2. Harmony
3. Scale
4. Proportion
5. Rhythm
6. Emphasis

UNIT-II

1. Indian, regional, traditional and contemporary arts and their use in :-
 1. Floor decoration
 2. Home decoration
 3. Accessories - definition, and their characteristics and use
2. Appreciation of art
 1. In terms of principles of art and design
 2. In terms of composition and aesthetic appeal

*Sociological
Professional
Ethics*

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22/7/17 22/7/17 22/7/17

UNIT-III

1. Family's Housing Needs
 1. Protective, economic, affection, social, standard of living, housing goals, style, function occupation.
2. Factors influencing selection and purchase of site for house building
 1. Legal aspects, location, physical feature, soil conditions, cost, services
3. House planning
 1. Reading house plans.
 2. Grouping of rooms, orientation, circulation, flexibility, Privacy spaciousness, services, aesthetics, economy, light and ventilation.
 3. Planning different rooms: living room, dining room, bedrooms, kitchen, store room, toilet, passage, and staircase.
 4. Landscape planning - Principles and application.

UNIT-IV

1. Financial Considerations :
 1. Availability of funds for housing
 2. Housing Development finance corporation
 3. Cooperative Housing Society
 4. Life Insurance corporation
 5. Cooperative Banks
 6. Loan from provident fund
 7. Finance corporation of India
2. Disability of owning versus renting.
 1. Housing problems, causes and remedial measures.

UNIT-V

1. Furniture
 1. Styles of furniture - traditional contemporary and modern.
 2. Selection of furniture for comfort, rest and relaxation for work, for storage
 3. Arrangement of furniture for living. Sleeping, dining and multipurpose rooms.
 4. Upholstered furniture materials, techniques and designs.
2. Furnishing fabrics
 1. Types of curtains, draperies, floor coverings rugs and carpets, cushion covers
 2. Selection and use.
 1. Accessories and their role in interiors.

*Practical
Professional
Ethics*

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22/7/17

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22/7/17

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22/7/17

PRACTICALS: (Any Ten)

1. Freehand drawing: Memory drawing and sketching.
2. Scale drawing, solid geometry, orthographic.
3. Preparation of colour wheel and colour schemes.
4. Elements of design laws of field size, proportion, types of shadows.
5. Residential space planning - scale, lines, abbreviations, metric projections, defining space by shades, shadows.
6. Lettering.
7. Use of colour for wall/floor decoration and making accessories.
8. Application of design principles in flower arrangement, styles of flower arrangement, innovation of new styles.
9. Gift wrapping and preparing decorative articles of fibre, fabric, coir, bamboo, clay, metal etc.
10. Drawing houseplans with standard specification.
11. Furniture layout of living, dining, Kitchen and bedroom designs presentation with furniture layout, sectional elevation, views.
12. Development of designs and construction of any five of the under mentioned items - cushions, curtains, carpets, doormats, rugs, table mates.
13. Wall paintings, picture frame design.
14. Graphic designs.

*professional
Ethical Vocational*

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22/7/17
22/7/17
22/7/17

APPAREL MAKING & FASHION DESIGNING

UNIT-I

Introduction

- Importance of Clothing
- Sociological & psychological aspects of clothing Fabrics to be considered while selecting of fabric for different garment.
- Estimation of material required for different garments (cloth estimation)
- Study of fabric finishes - Meaning, objective facilities, General & special.

Group - IV

UNIT-II

Experiments & principles of design: Meaning methods pf creating importance
 Elements of principles of design as applied, to apparel designing - Harmony, balance

proportion, Rhythm & emphasis.

Element: - Lines, shapes / forms.

Colour consideration: Definition, Dimensions, characteristics colour systems & colour schemes.

Classification & Process of designing. Structural.

Decorative of material required for different garments (cloth estimation)

. Realistic

Abstract

Stylized

Geometric

Traditional

Big & small design principles of design. Meaning method of creating importance

UNIT-III

Fashion - Definition

- Fashion trends in India & changes
- Theories of fashion: forms
- Body measurements
- Tailoring tools & Equipment's
- Methods of taking body measurements
- For different garments
- Importance
- Pattern making techniques
- Flat pattern
- Drafting
- Drapping

Professional

*Ethics
Social*

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 22/7/17
 22/7/17
 22/7/17

UNIT-IV

Fashion Illustrations:-

Disposals of fullness

1. Plackets
One piece two
piece seam
invisible
Continuous
2. Neck lines
3. Collie's
4. Sleeve details
5. Factories
6. Frill & gatheri
7. Pleats & Tucks
8. Darts
9. Patch work
10. Seams & seam finishes

UNIT-V

Fundamentals of Embroidery :-

- Techniques, design colour, uses of different combination - threads;
- mbroidery stick – Types
- Types of thread, needle, used for different fabrics.
- Study of traditional Embroideries of India.
- Kasida of Kashmiri
- Kantha of Bengal
- Chichenkari of Lucknow
- Kutch & kathiawan
- Kasuti of Karnataka
- Phulkari of Punjab.
- Gold & Silver (Zari work)
- Applique work

*Professional
Ethics*

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22/7/17

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22/7/17

[Signature]
22/7/17

Dr Com. Part - 1



हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

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दूरभाष : 0788-2359400

क्र. 1458 /अका./2019

दुर्ग, दिनांक 04/07/2019

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

—00—

विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर के निम्नलिखित कक्षा/विषय के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2019-20 से स्नातक के तीनों वर्ष के लिए लागू किया जाता है।

1. बी.कॉम. - आधार पाठ्यक्रम-हिन्दी भाषा एवं वाणिज्य।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार

कुलसचिव

क्र. 1459 /अका./2019

दुर्ग, दिनांक 04/07/2019

प्रतिलिपि:-

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।

सहा. कुलसचिव (अका.)

B.Com. - I

INDEX

1. Revised Ordinance No. 23
2. Scheme of Examination
3. Environmental Studies
3. Foundation Course
4. Financial Accounting
5. Business Communication
6. Business Maths
7. Business Reg. Framework
8. Business Environment
9. Business Economics
10. Computer Application

*All the subjects of
Commerce comes under
the category of
Professional Ethics*

also



M

REVISED ORDINANCE NO.-23

(As per State U.G.C. Scheme)

BACHELOR OF COMMERCE

1. The three year course has been broken up into three Parts.
Part-I known as B. Com. Part-I Examination at the end of first year. Part-II Examination at the end of the second year, and,
Part-III Examination at the end of the third year.
2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of Chhattisgarh Board of Secondary Education, Raipur or any other examination recognized by the University or Chhattisgarh Board of Secondary Education as equivalent there to has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year, shall be eligible for appearing at the B.Com. Part-I examination.
3. A candidate who after passing B.Com. Part-I examination of the University or any other examination recognized by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-II Examination.
4. A candidate who after passing B.Com. Part-II examination of the University has completed a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-III examination.
5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate students shall be eligible for admission to the examination as per provision of Ordinance No. 6 relating to examinations (General).
6. Provided that non-collegiate candidates shall be permitted to offer only such subject/ papers as are taught to the regular students at any of the University Teaching Department or College.
7. Every candidate for B.Com. Examination shall be examined in subjects as mentioned in the marking scheme and course or studies.
8. A candidate who has passed the B.Com. Part-III examination of the University shall be

A handwritten signature in black ink is written over a circular official stamp. The signature is somewhat stylized and appears to be 'S. S. S.'. The stamp is partially obscured by the signature.

allowed to present him of examination in any of the additional subjects prescribed for the B.Com. Examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B. Com. Part-I examination in the subject which he proposes to offer then the B.Com. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

- a In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total marks in each paper/group of subjects. In group where both theory and practical examinations are provided an examinee must pass in both theory and practical parts of examination separately.
- n Candidate will have to pass separately at the Part-I, Part-II and Part-III examination. No division shall be assigned on the result of the Part-I and Part-II examinations In determining the division of the Final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part-I examination.
- 11 Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject/group only, the total aggregate mark being carried over for determining the division, shall include actual marks obtained in the subject/group in which he appeared at the supplementary examination.
- 12 Successful examinees at the Part - III examination obtaining 60% or more marks shall be placed in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.

also
g.
Mr

B. Com. Part 2.



हेमचंद्र यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

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क्र. 1458 /अका./2019

दुर्ग, दिनांक 04/07/2019

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद्र यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

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1. बी.कॉम. - आधार पाठ्यक्रम-हिन्दी भाषा एवं वाणिज्य।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार

कुलसचिव

क्र. 1459 /अका./2019

दुर्ग, दिनांक 04/07/2019

प्रतिलिपि:-

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद्र यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद्र यादव विश्वविद्यालय, दुर्ग।


सहा. कुलसचिव (अका.)

B. Com. - II

INDEX

1. Revised Ordinance No.-23
2. Scheme of Examination
3. Hindi Language
4. English Language
5. G-I
 1. Corporate Accounting
 2. Company Law
6. G-II
 1. Cost Accounting
 2. Principle of Business Management
7. G-III
 1. Business Statistics
 2. Fundamental of Entrepreneurship
8. Computer Application

*comes under category of
professional Ethics*

also  *Mr*

B. Com. Part - 3



हेमचंद्र यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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क्र. 1458 /अका./2019

दुर्ग, दिनांक 04/07/2019

प्रति,

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समस्त संबद्ध महाविद्यालय,
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अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार

कुलसचिव

क्र. 1459 /अका./2019

दुर्ग, दिनांक 04/07/2019

प्रतिलिपि:-

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 के परिपेक्ष्य में सूचनार्थ।
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सहा. कुलसचिव (अका.)

Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

SYLLABUS B.COM. PART-III INDEX

Revised Ordinance No. 23 Scheme of Examination
Foundation Course I. Hindi Language II. English Language
Compulsory Groups
Group-I I. Income Tax II. Auditing
Group-II I. Indirect Taxes with GST II. Management Accounting
Group-III Optional
Option Group A (Finance Area) I. Financial Management II. Financial Market Operations
Option Group B (Marketing Area) I. Principles of Marketing II. International Marketing
Option Group C (Commercial Area) I. Information Technology and its Applications in Business II. Essential of e-Commerce
Option Group D (Money Banking & Insurance Area) I. Fundamental of Insurance II. Money & Banking System
Computer Application

professional

Ethics

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20/6/19

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20/6/19
SFA

[Signature]

[Signature]
20/6/19



हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

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दूरभाष : 0788-2359400

क्र. 1458 /अका./2019

दुर्ग, दिनांक 05/07/2019

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
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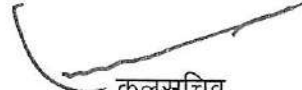
विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर के निम्नलिखित कक्षा/विषय के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2019-20 से स्नातक के तीनों वर्ष के लिए लागू किया जाता है।

1. बी.कॉम. — आधार पाठ्यक्रम-हिन्दी भाषा एवं वाणिज्य।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार

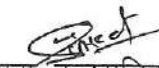

कुलसचिव

क्र. 1459 /अका./2019

दुर्ग, दिनांक 05/07/2019

प्रतिलिपि:-

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।


सहा. कुलसचिव (अका.)

B.Com. - I

INDEX

1. Revised Ordinance No. 23
2. Scheme of Examination
3. Environmental Studies
3. Foundation Course
4. Financial Accounting
5. Business Communication
6. Business Maths
7. Business Reg. Framework
8. Business Environment
9. Business Economics
10. Computer Application

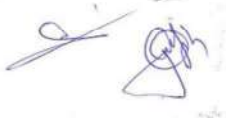
alms  *Mr*

REVISED ORDINANCE NO.-23

(As per State U.G.C. Scheme)

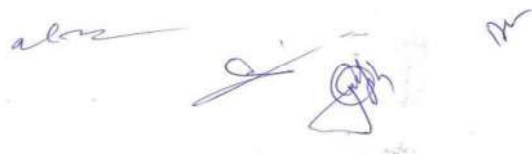
BACHELOR OF COMMERCE

1. The three year course has been broken up into three Parts.
Part-I known as B. Com. Part-I Examination at the end of first year. Part-II Examination at the end of the second year, and,
Part-III Examination at the end of the third year.
2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of Chhattisgarh Board of Secondary Education, Raipur or any other examination recognized by the University or Chhattisgarh Board of Secondary Education as equivalent there to has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year, shall be eligible for appearing at the B.Com. Part-I examination.
3. A candidate who after passing B.Com. Part-I examination of the University or any other examination recognized by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-II Examination.
4. A candidate who after passing B.Com. Part-II examination of the University has completed a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-III examination.
5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate students shall be eligible for admission to the examination as per provision of Ordinance No. 6 relating to examinations (General).
6. Provided that non-collegiate candidates shall be permitted to offer only such subject/ papers as are taught to the regular students at any of the University Teaching Department or College.
7. Every candidate for B.Com. Examination shall be examined in subjects as mentioned in the marking scheme and course or studies.
8. A candidate who has passed the B.Com. Part-III examination of the University shall be

A handwritten signature in blue ink is written over a circular official stamp. The signature is somewhat stylized and difficult to read. The stamp is partially obscured by the signature.

allowed to present him of examination in any of the additional subjects prescribed for the B.Com. Examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B. Com. Part-I examination in the subject which he proposes to offer then the B.Com. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

9. In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total marks in each paper/group of subjects. In group where both theory and practical examinations are provided an examinee must pass in both theory and practical parts of examination separately.
10. Candidate will have to pass separately at the Part-I, Part-II and Part-III examination. No division shall be assigned on the result of the Part-I and Part-II examinations In determining the division of the Final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part-I examination.
11. Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject/group only, the total aggregate mark being carried over for determining the division, shall include actual marks obtained in the subject/group in which he appeared at the supplementary examination.
12. Successful examinees at the Part - III examination obtaining 60% or more marks shall be placed in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.



Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

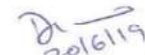
SYLLABUS

B.COM. PART-I


GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION

Subject		Max.	Min.
i) Environmental Studies Field Work	75 25	100	33
A. Foundation Course			
I. Hindi Language		75	26
II. English Language		75	26
B. Three Compulsory Groups			
Group-I			
I. Financial Accounting	75	150	50
II. Business Communication	75		
Group-II			
I. Business Mathematics	75	150	50
II. Business Reg. Framework	75		
Group-III			
I. Business Environment	75	150	50
II. Business Economics	75		


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Part - I
SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS
(Paper code-0828)

MM. 75

इन्वारमेंटल साईंसेस के पाठ्यक्रम को स्नातक स्तर भाग—एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003—2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न—पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक — 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

- | | | |
|----------------------|---|--------|
| (अ) लघु प्रश्नोंत्तर | — | 25 अंक |
| (ब) निबंधात्मक | — | 50 अंक |

Field Work — 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं के समान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा के साथ किया जाएगा।

पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग—एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33: (तीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग—एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधीक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, Scope and

Importance Natural Resources:

Renewable and Nonrenewable Resources

- (a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.
- (b) Water resources: Use and over-utilization of surface and ground water, floods drought, conflicts over water, dam' s benefits and problems and relevant Act.
- (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.
- (d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.
- (e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.
- (f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of and ecosystem

- Producers, consumers and decomposers.
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

(b) Biodiversity and its Conservation

- Introduction - Definition: genetic. species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use. Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

(12 Lecture)

UNIT- III

(a) Causes, effect and control measures of

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

(12 Lecture)

(b) Environmental Management

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights. Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948. Convention on the Elimination of all forms of Discrimination against women. Convention on the Rights of the Child, 1989.

UNIT- V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India. Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India. Fundamental Duties under the Constitution of India.

Reference/ Books Recommended

1. SK Kapoor- Human rights under International Law and Indian Law.
2. HO Agrawal- Internation Law and Human Rights
3. एस.के. कपूर – मानव अधिकार
4. जे.एन. पान्डेय – भारत का संविधान
5. एम.डी. चतुर्वेदी –भारत का संविधान
6. J.N.Pandey - Constitutional Law of India
7. Agarwal K.C. 2001 Environmental Biology, Nidi pub. Ltd. Bikaner
8. Bharucha Erach, the Biodiversity of India, Mapin pub. Ltd. Ahmedabad 380013, India, Email: mapin@icenet.net(R)
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10. Clark R.S. Marine pollution, Clanderson press Oxford (TB)
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13. Down to Earth, Center for Science and Environment (R)
14. Gloick, H.P. 1993 Water in crisis. pacific institute for studies in Deve. Environment & Security. Stockholm Eng. Institute. Oxford University, Press. m 473p.
15. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R)

16. Heywood, V.H. & Watson, T.T.1995 Global Biodiversity Assessment, Cambridge Univ. Press 1140p
17. Jadhav H. & Bhosale, V.H. 1995 Environmental Protection and Law. Himalaya pub. House, Delhi 284p
18. Mckinney M.L.& School R.M.1996, environmental Science systems & solutions, web enhanced edition, 639p
19. Mhadkar A.K. Matter Hazardous, Techno-Science publication(TB)
20. Miller T.G.Jr. Environment Science, Wadsworth publication co. (TB)
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22. Rao M.N. & Datta, A.K. 1987, Waste water treatment. Oxford & IBH pub.co.pvt. Ltd 345p
23. Sharma B.K. 2001, Environmental chemistry, Goel pub. House, Meerut
24. Survey of the Environment, The Hidu(M)
25. Townsend C. Harper J. And Michael Begon, Essentials of Ecology, Blackwell Science(TB)
26. Trivedi R.K.Handbook of Environment Laws, Rules, Guidelines, Compliances and Standards, Vol land II, Environment Media(R)
27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
28. Wanger K.D.1998, Environmental Management. W.B. Saunders Co. Philadelphia, USA 499

संशोधित पाठ्यक्रम
बी.ए./ बी.एस-सी./ बी.कॉम./ बी.एच.एस.-सी.
भाग - एक (आधार पाठ्यक्रम)
प्रश्न पत्र- प्रथम (हिन्दी भाषा)
(पेपर कोड -0101)

पूर्णांक- 75

नोट :-

1. प्रश्न पत्र 75 अंक का होगा।
2. प्रश्न पत्र अनिवार्य होगा।
3. इसके अंक श्रेणी निर्धारण के लिए जोड़े जायेंगे।
4. प्रत्येक इकाई के अंक समान होंगे।

पाठ्य विषय :-

इकाई-1

- क. पल्लवन, पत्राचार, अनुवाद, पारिभाषिक शब्दावली एवं हिंदी में पदनाम
- ख. ईदगाह (कहानी) - मुंशी प्रेमचंद

इकाई-2

- क. शब्द शुद्धि, वाक्य शुद्धि, शब्द ज्ञान-पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द एवं मुहावरे-लोकोक्तियाँ
- ख. भारत वंदना (कविता)- सूर्यकान्त त्रिपाठी निराला

इकाई-3

- क. देवनागरी लिपि - नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषताएँ, हिंदी अपठित गद्यांश, संक्षेपण, हिंदी में संक्षिप्तीकरण
- ख. भोलाराम का जीव (व्यंग्य) - हरिशंकर परसाई

इकाई-4

- क. कम्प्यूटर का परिचय एवं कम्प्यूटर में हिंदी का अनुप्रयोग
- ख. शिकागो से स्वामी विवेकानंद का पत्र

इकाई-5

- क. मानक हिन्दी भाषा का अर्थ, स्वरूप, विशेषताएँ, मानक, उपमानक, अमानक भाषा
- ख. सामाजिक गतिशीलता - प्राचीन काल, मध्यकाल, आधुनिक काल

मूल्यांकन योजना :-

प्रत्येक इकाई से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 8 एवं 7 होंगे। प्रश्न-पत्र का पूर्णांक 75 निर्धारित है।

पाठ्यक्रम संशोधन का औचित्य :-

व्याकरण के बुनियादी ज्ञान, संप्रेषण, कौशल, सामाजिक संदेश एवं भाषायी दक्षता को ध्यान में रखते हुए यह पाठ्यक्रम प्रस्तावित है।

FOUNDATION COURSE

PAPER - II

ENGLISH LANGUAGE (Paper Code-0102)

M.M. 75

UNIT-1 Basic Language skills : Grammar and Usage.

Grammar and Vocabulary based on the prescribed text. To be assessed by objective / multiple choice tests.

(Grammar - 20 Marks
Vocabulary - 15 Marks)

UNIT-2 Comprehension of an unseen passage.

05

This should simply not only (a) an understanding of the passage in question, but also

(b) a grasp of general language skills and issues with reference to words and usage

within the passage and (c) the Power of short independent composition based on themes and issues raised in the passage.

To be assessed by both objective multiple choice and short answer type tests.

UNIT-3 Composition : Paragraph writing

10

UNIT-4 Letter writing (The formal and one Informal)

10

Two letters to be attempted of 5 marks each. One formal and one informal.

UNIT-5 Texts :

15

Short prose pieces (Fiction and not fiction) short poems, the pieces should cover a range of authors, subjects and contexts. With poetry if may sometimes be advisable to include pieces from earlier periods, which are often simpler than modern examples. In all cases, the language should be accessible (with a minimum of explanation and reference to standard dictionaries) to the general body of students schooled in the medium of an Indian language.

Students should be able to grasp the contents of each piece; explain specific words, phrases and allusions; and comment on general points of narrative or argument.

Formal Principles of Literary criticism should not be taken up at this stage.

To be assessed by five short answers of three marks each.

BOOKS PRESCRIBED -

English Language and Indian Culture - Published by M.P. Hindi Grant Academy Bhopal.

Dr. M. C. Chakraborty

Dr. S. Gupta

DR. MERILY ROY

B. Com Part- I
Compulsory
Group – I Paper – I - Financial Accounting

OBJECTIVE – To Impart basic accounting knowledge as applicable to business.

UNIT –I

Accounting: An Introduction: Development, Definition, Needs, objectives; Branches of accounting; Basic Accounting Principles, Concepts & Conventions.

Accounting Standard: International Accounting Standard only outlines, Accounting Standard in India.

Accounting Transaction: Concept of Double Entry System, Concept of Capital & Revenue, Book of original records: Journal; Ledger; Sub-Division of Journal: Cashbook.

UNIT –II

Final Accounts; Trial balance; Manufacturing account; Trading account; Profit & loss account; Balance sheet; Adjustment entries.

Rectification of errors; Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.

UNIT –III

Depreciation, Provisions, and Reserves; Concept of depreciation; Causes of deprecation; Depreciation, depletion amortization, Depreciation accounting; Methods of recording depreciation; Methods for providing depreciation; Depreciation of different assets; Depreciation of Replacement cost; Depreciation policy; as per Indian accounting Standard : provisions and Reserves. Accounts of Non-Trading Institutions.

UNIT –IV

Special Accounting Areas :

Hire-purchase and installment purchase system: Meaning of hire-purchase contract, Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values, and accounting records for goods for small values ; Installment purchase system ; After sales Service.

UNIT –V

Partnership Account: Dissolution of a Partnership Firm, Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.

Handwritten signatures and dates at the bottom of the page, including '20/6/19', '20/6/19', and '20/6/19'.

Suggested Readings:

1. Gupta, R.L. and Radhaswamy. M; Financial Accounting; Sultan Chand and Sons, New Delhi. (Both Hindi and English medium)
2. Monga J.R. Ahuja Girish, and Sehgal Ashok: Financial Accounting; Mayur Paper Back, Noida.
3. Shukla. M.C., Grewal T.S. and Gupta, S.C.: Advanced Accounts; S. Chand & Co. New delhi.
4. Singh B.K.; Financial Accounting; Wisdom Publishing House, Varanasi.
5. S.M. Shukla; Financial Accounting; Sahitya Bhawan Publication; Agra. (Both Hindi and English medium)
6. Karim & Khanuja; Financial Accounting; SBPD Publishing House; Agra. (Both Hindi and English medium)
7. Agrawal & Mangal; Financial Accounting; Universal Publication. (Both Hindi and English medium)

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बी.कॉम. भाग – एक
अनिवार्य
समूह-1 प्रश्नपत्र – 1 – वित्तीय लेखांकन

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 लेखांकन का अर्थ एवं क्षेत्र : आवश्यकता, विकास एवं परिभाषा, लेखांकन के उद्देश्य, पुस्तपालन एवं लेखांकन में अन्तर, लेखांकन की शाखाएं। लेखांकन सिद्धांत, लेखांकन मानक : अन्तर्राष्ट्रीय लेखांकन मानक (सिर्फ रूपरेखा) : भारत में लेखांकन मानक। लेखांकन व्यवहार : लेखांकन चक्र : पंजी (जर्नल) : डेबिट (विकलन) एवं क्रेडिट (समाकलन) के नियम, संयुक्त पंजी (जर्नल) प्रविष्टि, प्रारम्भिक प्रविष्टि : जर्नल एवं खाताबाही में सम्बन्ध, पूंजी एवं आगम : आय, व्यय एवं प्राप्तियों का वर्गीकरण।</p>	<p>इकाई – 1 लेखांकन का परिचय : विकास, परिभाषा, आवश्यकता, उद्देश्य, लेखांकन की शाखाएं; लेखांकन के सिद्धांत, अवधारणा एवं परंपराएं। लेखांकन मानक : अन्तर्राष्ट्रीय लेखांकन मानक (सिर्फ रूपरेखा) : भारत में लेखांकन मानक। लेखांकन व्यवहार; दोहरी प्रविष्टि प्रणाली की अवधारणा। पूंजी एवं आगम की अवधारणा, मूल प्रविष्टि की पुस्तकें: जर्नल, खाताबही, जर्नल का विभाजन : रोकड़ पुस्तक।</p>
<p>इकाई – 2 तलपट , अन्तिम खाते : निर्माणी खाता, व्यापार खाता, लाभ-हानि खाता, चिट्ठा एवं समायोजन प्रविष्टियाँ। अशुद्धियों का सुधार या संशोधन, अशुद्धियों का वर्गीकरण, अशुद्धियों की स्थिति, अशुद्धियों का सुधार, उचंत खाता लाभ पर प्रभाव।</p>	<p>इकाई – 2 तलपट, अन्तिम खाते : निर्माणी खाता, व्यापार खाता, लाभ-हानि खाता, चिट्ठा एवं समायोजन प्रविष्टियाँ। अशुद्धियों का सुधार या संशोधन, अशुद्धियों का वर्गीकरण, अशुद्धियों की स्थिति, अशुद्धियों का सुधार, उचंत खाता लाभ पर प्रभाव।</p>
<p>इकाई – 3 मूल्य ह्रास (अवक्षयण), आयोजन एवं संचय; ह्रास की अवधारणा , ह्रास के कारण, ह्रास रिक्तता, अपलेखन ह्रास लेखांकन, ह्रास अभिलेखन की विधियाँ; विभिन्न सम्पत्तियों पर ह्रास आयोजन की विधियाँ; प्रतिस्थापन लागत पर ह्रास, भारतीय लेखांकन मानक के अनुसार लेखांकन नीतियाँ, आयोजन एवं संचय; गैर-व्यापारिक संस्थाओं के खाते।</p>	<p>इकाई – 3 मूल्य ह्रास (अवक्षयण), आयोजन एवं संचय; ह्रास की अवधारणा , ह्रास के कारण, ह्रास रिक्तता, अपलेखन ह्रास लेखांकन, ह्रास अभिलेखन की विधियाँ; विभिन्न सम्पत्तियों पर ह्रास आयोजन की विधियाँ; प्रतिस्थापन लागत पर ह्रास, भारतीय लेखांकन मानक के अनुसार लेखांकन नीतियाँ, आयोजन एवं संचय; गैर-व्यापारिक संस्थाओं के खाते।</p>
<p>इकाई – 4 विशेष लेखांकन क्षेत्र: (क) शाखा खाते : आश्रित शाखा, देनदार पद्धति , स्कन्ध एवं देनदार पद्धति। (ख) किराया क्रय एवं किस्त क्रय पद्धति : किराया क्रय अनुबन्ध का अर्थ, किराया क्रय अनुबन्ध संबंधित प्रौवधान, अधिक मूल्य की वस्तुओं के लिए लेखांकन अभिलेख , किस्त क्रय पद्धति एवं क्रय पश्चात् सेवा।</p>	<p>इकाई – 4 विशेष लेखांकन क्षेत्र: किराया क्रय एवं किस्त क्रय पद्धति : किराया क्रय अनुबन्ध का अर्थ, किराया क्रय अनुबन्ध संबंधित प्रौवधान, अधिक मूल्य की वस्तुओं के लिए लेखांकन अभिलेख , किस्त क्रय पद्धति एवं क्रय पश्चात्</p>

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वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 5 (क) साझेदारी खाते : साझेदारी की सारभूत विशेषताएँ, साझेदारी संलेख ; अन्तिम खाते , खाते बंद होने के पश्चात् समायोजन; स्थिर एवं परिवर्तनशील पूँजी, ख्याति-लेखांकन मानक 10 संयुक्त जीवन बीमा पॉलिसी, लाभ विभाजन अनुपात में परिवर्तन, (ख) साझेदारी फर्म का पुननिर्माण; फर्म में साझेदार का प्रवेश; साझेदार का अवकाश ग्रहण;साझेदार की मृत्यु, फर्म का विघटन, लेखांकन प्रविष्टियाँ, साझेदारी फर्म का दिवालिया होना, फर्म के विघटन की विधियाँ, लेखांकन प्रविष्टियाँ, साझेदार का दिवलिया होना, वितरण ।</p>	<p>इकाई – 5 साझेदारी खाते : साझेदारी फर्म का विघटन, साझेदारी फर्मों का एकीकरण, साझेदारी फर्म की संयुक्त स्कन्ध प्रमण्डल में परिवर्तन ।</p>

Suggested Readings:

1. Gupta, R.L. and Radhaswamy. M; Financial Accounting; Sultan Chand and Sons, New Delhi. (Both Hindi and English medium)
2. Monga J.R. Ahuja Girish, and Sehgal Ashok: Financial Accounting; Mayur Paper Back, Noida.
3. Shukla. M.C., Grewal T.S. and Gupta, S.C. : Advanced Accounts; S. Chand & Co.. New delhi.
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5. S.M. Shukla; Financial Accounting; Sahitya Bhawan Publication; Agra. (Both Hindi and English medium)
6. Karim & Khanuja; Financial Accounting; SBPD Publishing House; Agra. (Both Hindi and English medium)
7. Agrawal & Mangal; Financial Accounting; Universal Publication. (Both Hindi and English medium)

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B.Com Part- I

Compulsory

Group – I Paper – II - BUSINESS COMMUNICATION

Proposed Syllabus

OBJECTIVE – To develop effective business communication skills among the students.

UNIT -I

Introducing Business Communication: Definitions, concept and Significance of communication, Basic forms of communicating; Communication models and process; principles of effective communication; Theories of communication; Self-Development and Communication; Development of positive personal attitudes, SWOT analysis.

UNIT -II

Corporate Communication: Formal and Informal communication networks; Grapevine; Miscommunication (Barriers); improving communication. Practices in business communication; Group discussions; Seminars; Effective Listening: Principles of effective listening; Factor affective listening exercises; Oral, Written, and video session, Audience analysis and feedback.

UNIT -III

Writing skill: Business letters – Definition, concepts, structure, advantages disadvantage, need and kinds of business letter, Essentials of effective business letter. Good news and bad new letters; Office memorandum. Writing Resume and Letter of Job Application.

UNIT -IV

Report Writing: Introduction to a proposal, Short report and formal report, report preparation.

Oral Presentation: Principles of oral presentation, factor affecting presentation, sales presentation, training presentation, conducting surveys, speeches to motivate, presentation skill.

UNIT -V

Non-Verbal Aspects of Communicating. Body Language: Kinesics, Proxemics, Para Language.

Interviewing skills: Appearing in interviews; conducting interviews; mock interview.

Modern Forms of Communicating: Fax; E-Mail; video conferencing; etc.

International Communication for global business.

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Suggested Readings:

1. Dr. P. K. Agrawal, Dr. A.K. Mishra ; Business Communication ; Sahitya Bhawan Publication; Agra (Hindi medium)
2. Balasubramanyam: Business Communication; Vikas Publishing House, Delhi. (English medium)
3. Dr. Vinod Mishra: Business Communication; Sahitya Bhawan Publication; Agra. (Hindi medium)
4. Kaul: Effective Business Communication; Prentice Hall, New Delhi. (English medium).
5. Patri VR: Essentials of Communication; Greenspan Publications, New Delhi. (English medium)
6. Senguin J: Business Communication; The Real World and Your Career, Allied Publishers, New Delhi. (English medium)
7. Dr. Mishra, Shukla & Patel; Business Communication; SBPD Publishing House, Agra. (Both Hindi and English medium)

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बी.कॉम. भाग – एक
अनिवार्य
समूह-1 प्रश्नपत्र – 2 – व्यावसायिक संचार

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 व्यावसायिक संचार परिचय: परिभाषा , अवधारणाएं एवं संचार का महत्व, संचार के आधारभूत प्रकार एवं मॉडल एवं प्रभावी संचार के सिद्धांत, प्रक्रिया , श्रोता विश्लेषण। आत्म विकास एवं संचार, सकारात्मक व्यक्तिगत दृष्टिकोण का विकास, स्वाँट विश्लेषण, मतों की परस्पर निर्भरता का प्रतिरूप।</p> <p>इकाई – 2 व्यावसायिक संस्था का संचार तंत्र:- औपचारिक एवं अनौपचारिक संचार तंत्र, अंगूरी लता संचार, संचार की बाधाएं एवं सुधार। व्यवहार में व्यावसायिक संचार:- सामूहिक परिचर्चा, साक्षात्कार, संगोष्ठी, प्रभावपूर्ण सूचना, व्यक्तिगत एवं सामूहिक प्रस्तुतीकरण एवं रिपोर्ट लेखन।</p> <p>इकाई – 3 लेखन कुशलता : व्यावसायिक संदेश की योजना एवं उसे संशोधित करना, प्रथम मसौदा, अंतिम मसौदा का पुनर्निर्माण, व्यावसायिक पत्र एवं ज्ञापन, प्रारूप: निवेदन पत्र , अनुकूल एवं प्रतिकूल संवाद पत्र, प्रेरक पत्र, विक्रय संबंधी पत्र, तकादे का पत्र या संग्रहण पत्र, कार्यालयीन ज्ञापन व पत्र।</p> <p>इकाई – 4 रिपोर्ट लेखन – एक प्रस्ताव का परिचय, लघु रिपोर्ट एवं औपचारिक रिपोर्ट ,रिपोर्ट लेखन की तैयारी। मौखिक प्रस्तुती: मौखिक प्रस्तुती के सिद्धांत , प्रस्तुतीकरण को प्रभावित करने वाले कारक, विक्रय प्रस्तुतीकरण , प्रशिक्षण प्रस्तुतीकरण, सर्वेक्षण आयोजित करना, प्रेरक भाषण, प्रभावी प्रस्तुती कौशल।</p> <p>इकाई – 5 अशाब्दिक संचार के पहलू – दैहिक भाषा : समय एवं पार्श्व भाषा , प्रभावपूर्ण सूचना : प्रभावपूर्ण सूचने के सिद्धांत,</p>	<p>इकाई – 1 व्यावसायिक संचार परिचय : परिभाषा , अवधारणाएं एवं संचार का महत्व, संचार के आधारभूत प्रकार एवं मॉडल, प्रक्रिया एवं प्रभावी संचार के सिद्धांत । आत्म विकास एवं संचार , सकारात्मक व्यक्तिगत दृष्टिकोण का विकास , स्वाँट विश्लेषण ।</p> <p>इकाई – 2 व्यावसायिक संस्था का संचार तंत्र:- औपचारिक एवं अनौपचारिक संचार तंत्र, अंगूरी लता संचार, संचार की बाधाएं एवं सुधार। व्यवहार में व्यावसायिक संचार:- सामूहिक परिचर्चा, संगोष्ठी , प्रभावपूर्ण सूचना : प्रभावपूर्ण सूचने के सिद्धांत, प्रभावपूर्ण सूचने के कारक, मौखिक , लिखित एवं विडियो सत्र का व्यवहारिक अध्ययन, श्रोता विश्लेषण एवं प्रतिपुष्टी।</p> <p>इकाई – 3 लेखन कुशलता : व्यावसायिक पत्र – परिभाषा, अवधारणा, संरचना, गुण दोष , आवश्यकता एवं विभिन्न प्रकार के व्यावसायिक पत्र , प्रभावी व्यापारिक पत्र व्यवहार के मूल तत्व। अनुकूल एवं प्रतिकूल संवाद पत्र, कार्यालयीन ज्ञापन व पत्र । जीवनवृत्त लेखन एवं नौकरी के लिए आवेदन पत्र।</p> <p>इकाई – 4 रिपोर्ट लेखन – एक प्रस्ताव का परिचय , लघु रिपोर्ट एवं औपचारिक रिपोर्ट ,रिपोर्ट लेखन की तैयारी। मौखिक प्रस्तुती : मौखिक प्रस्तुती के सिद्धांत , प्रस्तुतीकरण को प्रभावित करने वाले कारक, विक्रय प्रस्तुतीकरण , प्रशिक्षण प्रस्तुतीकरण, सर्वेक्षण आयोजित करना, प्रेरक भाषण, प्रभावी प्रस्तुती कौशल।</p> <p>इकाई – 5 अशाब्दिक संचार के पहलू – दैहिक भाषा , समय एवं पार्श्व भाषा ,</p>

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<p>प्रभावपूर्ण सूचने के कारक, मौखिक , लिखित एवं विडियो सत्र का व्यवहारिक अध्ययन। साक्षात्कार कुशलता : साक्षात्कार में शामिल होना, साक्षात्कार का आयोजन, जीवनवृत्त – सारांश लेखन एवं आवेदन पत्र। संचार के आधुनिक रूप – फ़ैक्स, ई मेल, वीडियो कॉन्फ़ेसिंग आदि</p> <p>अंतराष्ट्रीय संचार: सांस्कृतिक संवेदनशीलता एवं सांस्कृतिक संदर्भ, अंतराष्ट्रीय स्थितियों में लेखन और प्रस्तुतीकरण करना: अंतराष्ट्रीय क्रियाओं में अंतराष्ट्रीय सांस्कृतिक कारक, वैश्विक व्यापार के संदर्भ में।</p>	<p>साक्षात्कार कुशलता : साक्षात्कार में शामिल होना, साक्षात्कार का आयोजन, मॉक साक्षात्कार। संचार के आधुनिक रूप – फ़ैक्स , ई मेल, वीडियो कॉन्फ़ेसिंग आदि</p> <p>अंतराष्ट्रीय संचार : सांस्कृतिक संवेदनशीलता एवं सांस्कृतिक संदर्भ , भूमण्डलीय व्यावसाय के लिए अंतराष्ट्रीय संप्रेषण।</p>
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Suggested Readings:

1. Dr. P. K. Agrawal, Dr. A.K. Mishra ; Business Communication ; Sahitya Bhawan Publication; Agra (Hindi medium)
2. Balasubramanyam: Business Communication; Vikas Publishing House, Delhi. (English medium)
3. Dr. Vinod Mishra: Business Communication; Sahitya Bhawan Publication; Agra. (Hindi medium)
4. Kaul: Effective Business Communication; Prentice Hall, New Delhi. (English medium).
5. Patri VR: Essentials of Communication; Greenspan Publications, New Delhi. (English medium)
6. Sengun J: Business Communication; The Real World and Your Career, Allied Publishers, New Delhi. (English medium)
7. Dr. Mishra, Shukla & Patel; Business Communication; SBPD Publishing House, Agra. (Both Hindi and English medium)

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B.Com Part- I
Compulsory
Group – II
Paper – I - Business Mathematics
Proposed Syllabus

OBJECTIVE – To enable the students to have such minimum knowledge of mathematics as is applicable to business and economic situations.

UNIT –I

Simultaneous Equations– Meaning, Characteristics, Methods of Solving Equations in Two Variables– Graphical, Substitution, Elimination and Cross Multiplication.

Linear Programming –Formulation of LLP : Graphical method of solution ; Problems relating to two variables including the case of mixed constraints .

UNIT –II

Matrices and Determinants : Definition of a matrix ; Type of a matrices ; Algebra of matrices ; Properties of determinants ; Calculation of values of determinants upto third order ; Logarithm's & Antilogarithm's.

UNIT –III

Simple interest and Compound Interest .

Annuities : Types of annuities ; Present value and amount of an annuity, including the case of continuous compounding ; Valuation of simple loans and debentures; Problems relating to sinking funds.

UNIT –IV

Ratio & Proportion.

Average, Percentage.

UNIT –V

Commission, Brokerage, Discount, Profit and loss.

Transportation Problems.

Suggested Readings:

1. Dr. Amarnath Dikshit, Dr. Jinendra Kumar Jain; Business Mathematics ;Himalaya Publishing House, Mumbai. (Both Hindi and English medium)
2. N.K. Nag : Business Mathematics; Kalyani publication, New Delhi. .
3. Dr. V.K. Shukla. : Business Mathematics; Madhya Pradesh hindi Granth Academy; Bhopal.
4. S.M. Shukla; Business Mathematics; Sahitya Bhawan Publication ; Agra. (Both Hindi and English medium)
5. Dr. Karim & Agrawal ; Business Mathematics; SBPD Publishing House ; Agra. (Both Hindi and English medium)
6. Dr. Ramesh Mangal; Business Mathematics; Satish Printer and Publishers, Indore.

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अनिवार्य
समूह-2 प्रश्नपत्र – 1 – व्यावसायिक गणित

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 कलन : अवकलन : आंशिक अवकलज— द्वितीय क्रम तक, फलनो की समघातीयता एवं यूलर प्रमेय, उच्चिष्ठ एवं निम्निष्ठ – एक चर के द्वितीय या उच्च क्रम से जुड़े सवाल । लघुगणक ।</p>	<p>इकाई – 1 युगपद् समीकरण – अर्थ, विशेषताएँ, दो चर वाले समीकरण को हल करने की विधियाँ – रेखीय विधि, प्रतिस्थापन विधि, विलोपन विधि, वज्रगुणन विधि । रेखीय प्रक्रमन : रेखीय प्रक्रमन समस्या को गणितीय रूप में लिखना : ग्राफीक विधि से हल, द्विचर से संबंधित मिश्रित निबाध समस्याएँ ।</p>
<p>इकाई – 2 आव्यूह एवं सारणिक : आव्यूह की परिभाषा , आव्यूह के प्रकार, आव्यूह बीजगणित, सारणिक के गुण, तृतीयक्रम के सारणिकों के मान की गणना, आव्यूह का सहखण्डज , पंक्ति या स्तम्भ मूल क्रियाएँ, मूल पंक्ति या स्तम्भ क्रियाओं द्वारा आव्यूह का व्युत्क्रम ज्ञात करना , अद्वितीय हल रखने वाली तथा तीन से अधिक चर न रखने वाली युगपत् समीकरणों का हल ।</p>	<p>इकाई – 2 आव्यूह एवं सारणिक : आव्यूह की परिभाषा , आव्यूह के प्रकार, आव्यूह बीजगणित, सारणिक के गुण, तृतीयक्रम के सारणिकों के मान की गणना । लघुगणक एवं प्रतिलघुगणक ।</p>
<p>इकाई – 3 रेखीय प्रक्रमन : रेखीय प्रक्रमन समस्या को गणितीय रूप में लिखना : ग्राफीक विधि से हल, समस्या का कोई सम्भव हल नहीं, अनेक हल, असीम समस्या का हल, व्यर्थ निबाध । परिवहन समस्या , अनुपात एवं समानुपात ।</p>	<p>इकाई – 3 साधारण ब्याज एवं चक्रवृद्धि ब्याज । वार्षिकी : वार्षिकी के प्रकार , वार्षिकी का वर्तमान मूल्य एवं मिश्रधन, ब्याज का सतत संयोजन, साधारण ऋण एवं ऋणपत्र का मूल्यांकन , शोधन निधि के प्रश्न ।</p>
<p>इकाई – 4 चक्रवृद्धि ब्याज एवं वार्षिकी : विभिन्न प्रकार की ब्याज दरें, वर्तमान मूल्य एवं मिश्रधन की गणना, वार्षिकी के प्रकार , वार्षिकी का वर्तमान मूल्य एवं मिश्रधन, ब्याज का सतत संयोजन, साधारण ऋण एवं ऋणपत्र का मूल्यांकन , शोधन निधि के प्रश्न ।</p>	<p>इकाई – 4 अनुपात एवं समानुपात । औसत : साधारण, भारित एवं सांख्यिकीय औसत (समान्तर माध्य) । प्रतिशतता ।</p>
<p>इकाई – 5 औसत, प्रतिशतता, कमीशन एवं दलाली, लाभ एवं हानि</p>	<p>इकाई – 5 कमीशन, दलाली, बट्टा, लाभ एवं हानि । परिवहन समस्या ।</p>



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Suggested Readings:

1. Dr. Amarnath Dikshit, Dr. Jinendra Kumar Jain; Business Mathematics ;Himalaya Publishing House, Mumbai. (Both Hindi and English medium)
2. N.K. Nag : Business Mathematics; Kalyani publication, New Delhi. .
3. Dr. V.K. Shukla. : Business Mathematics; Madhya Pradesh hindi Granth Academy: Bhopal.
4. S.M. Shukla; Business Mathematics; Sahitya Bhawan Publication ; Agra. (Both Hindi and English medium)
5. Dr. Karim & Agrawal ; Business Mathematics; SBPD Publishing House ; Agra. (Both Hindi and English medium)
6. Dr. Ramesh Mangal; Business Mathematics; Satish Printer and Publishers, Indore.

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B.Com Part- I
Compulsory
Group – II
Paper – II – BUSINESS REGULATORY FRAMEWORK
Proposed Syllabus

OBJECTIVE – To provide a brief idea about the framework of Indian business laws.

UNIT –I

Law of Contract (1872) –I : Nature of contract ; Classification ; Offer and acceptance; Capacity of parties to contract, free consent, Considerations, Legality of object; Agreement declared void.

UNIT –II

Law of Contract (1872) - II : Performance of contract, Discharge of contract; Remedies for breach of contract.

Special contracts; Indemnity ; Guarantee; Bailment and pledge; Agency.

UNIT –III

Sale of Goods Act (1930) ;Formation of contracts of sale ;Goods and their classification, price, Conditions and warranties; Transfer of property in goods; Performance of the contract of sales; Unpaid seller and his rights; sale by auction; Hire purchase agreement.

UNIT –IV

Negotiable Instrument Act (1881) : Definition of negotiable instrument; Feature; Promissory note; Bill of exchange & cheque; Holder and holder in the due course; Crossing of a cheque, types of crossing; Negotiation; Dishonor and discharge of negotiable instrument.

UNIT –V

The Consumer Protection Act 1986 : Main Provision, Definition of consumer ,Consumer Disputes , Grievance redressal machinery ; Indian Partnership Act 1932.

Limited Liabilities Partnership Act 2008.

Introduction of Intellectual Property Right Act – Copyright, Patent & Trademark.

Suggested Readings:

1. Kuchal M.C. ; Business Law ; Vikas Publishing House, Delhi. (English medium)
2. Kapoor N.D. : Business Law ; Sultan Chand & Sons, New Delhi. (English medium)
3. Chandha P.R. : Business Law; Galgotia ,New Delhi. (English medium)
4. Dr. J.K. Vaishnav : Business Law; Sahitya Bhawan publication, Agra. (English medium)
5. Prof. R. C. Agrawal; Business Regulatory Framework; SBPD Publishing House, Agra. (Hindi medium)
6. K.R. Bulchandani; Business Law; Himalaya Publishing House , Mumbai. (Both Hindi and English medium)
7. R.L. Navlakha; Business Law; Ramesh Book depot, Jaipur. (Both Hindi and English medium)
8. Arun Kumar Gangele; Business Regulatory Framework; Ram Prasad & Sons, Agra. (Hindi medium)

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समूह-2 प्रश्नपत्र – 2 – व्यावसायिक नियमन रूपरेखा

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 भारतीय अनुबंध अधिनियम (1872) : अनुबंध की प्रकृति : वर्गीकरण , प्रस्ताव तथा स्वीकृति, अनुबंध के योग्य पक्षकार , पक्षकारों की स्वतंत्र सहमति , प्रतिफल, उद्देश्य की वैधता , व्यर्थ घोषित ठहराव : अनुबंध का निष्पादन , अनुबंधों की समाप्ति , अनुबंध भंग के उपाय एवं परिणाम।</p> <p>इकाई – 2 विशिष्ट अनुबंध : क्षतिपूर्ति , प्रतिभूति, निक्षेप, गिरवी अनुबंध, एजेंसी।</p> <p>इकाई – 3 वस्तु विक्रय अधिनियम (1930) : वस्तु विक्रय अनुबंध का निर्माण , माल का वर्गीकरण , कीमत, शर्तें और आश्वासन , माल के स्वामित्व का हस्तांतरण, विक्रय अनुबंध का निष्पादन , अदत्त विक्रेता के अधिकार , नीलाम द्वारा विक्रय , किराया क्रय ठहराव।</p> <p>इकाई – 4 विनिमय साध्य विलेख अधिनियम (1881) : परिभाषाएं, विशेषताएं , प्रतिज्ञा पत्र, विनिमय विपत्र और धनादेश (चैक) : धारक तथा यथाविधिधारी , रेखांकित चैक, रेखांकन के प्रकार, परक्रामण, विनिमय साध्य विलेख का अनदारण व मुक्ति।</p> <p>इकाई – 5 उपभोक्ता संरक्षण अधिनियम (1986) : मुख्य विशेषताएं , उपभोक्ता की परिभाषा , उपभोक्ता विवाद निवारण अभिकरण। मुख्य प्रावधान , सूचना का अधिकार अधिनियम (2005) – मुख्य प्रावधान।</p>	<p>इकाई – 1 भारतीय अनुबंध अधिनियम (1872) : अनुबंध की प्रकृति : वर्गीकरण , प्रस्ताव तथा स्वीकृति, अनुबंध के योग्य पक्षकार , पक्षकारों की स्वतंत्र सहमति , प्रतिफल, उद्देश्य की वैधता , व्यर्थ घोषित ठहराव ।</p> <p>इकाई – 2 अनुबंध का निष्पादन , अनुबंधों की समाप्ति , अनुबंध भंग के उपाय एवं परिणाम। विशिष्ट अनुबंध : क्षतिपूर्ति , प्रतिभूति, निक्षेप , गिरवी अनुबंध, एजेंसी।</p> <p>इकाई – 3 वस्तु विक्रय अधिनियम (1930) : वस्तु विक्रय अनुबंध का निर्माण , माल का वर्गीकरण , कीमत, शर्तें और आश्वासन , माल के स्वामित्व का हस्तांतरण, विक्रय अनुबंध का निष्पादन , अदत्त विक्रेता के अधिकार , नीलाम द्वारा विक्रय , किराया क्रय ठहराव।</p> <p>इकाई – 4 विनिमय साध्य विलेख अधिनियम (1881) : परिभाषाएं, विशेषताएं , प्रतिज्ञा पत्र, विनिमय विपत्र और धनादेश (चैक) : धारक तथा यथाविधिधारी , रेखांकित चैक, रेखांकन के प्रकार, परक्रामण, विनिमय साध्य विलेख का अनदारण व मुक्ति।</p> <p>इकाई – 5 उपभोक्ता संरक्षण अधिनियम (1986) : मुख्य विशेषताएं , उपभोक्ता की परिभाषा , उपभोक्ता विवाद निवारण अभिकरण। भारतीय साझेदारी अधिनियम 1932। सीमित दायित्व वाली साझेदारी अधिनियम 2008। बौद्धिक संपदा अधिकार अधिनियम का परिचय – कॉपीराईट, पेटेन्ट एवं ट्रेडमार्क।</p>

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Suggested Readings:

1. Kuchal M.C. ; Business Law ; Vikas Publishing House, Delhi. (English medium)
2. Kapoor N.D. : Business Law ; Sultan Chand & Sons, New Delhi. (English medium)
3. Chandha P.R. : Business Law; Galgotia ,New Delhi. (English medium)
4. Dr. J.K. Vaishnav : Business Law; Sahitya Bhawan publication, Agra. (English medium)
5. Prof. R. C. Agrawal; Business Regulatory Framework; SBPD Publishing House, Agra. (Hindi medium)
6. K.R. Bulchandani; Business Law; Himalaya Publishing House , Mumbai. (Both Hindi and English medium)
7. R.L. Navlakha; Business Law; Ramesh Book depot, Jaipur. (Both Hindi and English medium)
8. Arun Kumar Gangele; Business Regulatory Framework; Ram Prasad & Sons, Agra. (Hindi medium)

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B.Com Part- I

Compulsory

Group – III

Paper – I – BUSINESS ENVIRONMENT

Proposed Syllabus

OBJECTIVE – To acquainting the students with the emerging issues in business at the national and international level in the light of the policies of liberalization and globalization.

UNIT –I

Business Environment : Concept, Components and Importance ,Economic Trends (overview) : Income : Saving and investment ; Trade and balance of payment, Money and Finance .

UNIT –II

Problems of Growth : Unemployment ; Poverty ; Regional imbalances ; Social Injustice; Inflation ; Parallel economy ; Industrial sickness.

UNIT –III

Role of Government ; Monetary and fiscal policy ; Industrial policy ; Industrial licensing. Privatization ; Liberalisation, Globalisation Devaluation; Demonitisation; Export-Import policy.

UNIT –IV

Economic Planning in India : Need, objectives, Strategy; Review of Previous Plans, Planning Commission.

Foreign Exchange Management Act 2000 : Basic Concept and Main Provisions.

UNIT –V

International Environment ; Trends in World trade and the problems of developing countries; Foreign trade and economic growth; International economic groupings – GATT. ,WTO ,UNCTAD, World Bank, IMF; FDI.

Suggested Readings:

1. Agarwal A. N. : Indian Economy, Vikas Publishing House Delhi. (English medium)
2. Khan Farooq A : Business and Society; S. Chand , Delhi. (English medium)
3. Dutt R. and Sundharam K. Pm. ; Indian Economy; S. Chand , Delhi. (English medium)
4. Misra S.K. and Puri V.K. : Indian Economy; Himalaya Publishing House, New Delhi. (English medium)
5. Dr. V.C. Sinha; Business Environment; SBPD Publishing House, Agra . (Both Hindi and English medium)
6. Dr. J. K. Jain; Business Environment; Madhya Pradesh hindi Granth Academy: Bhopal. (Hindi medium)
7. Gupta & Pathak; Business Environment; Ram Prasad & Sons, Raipur. (Hindi medium)
8. S.K. Singh; Business Environment; SBPD Publishing House, Agra . (Both Hindi and English medium)

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समूह-3 प्रश्नपत्र – 1 – व्यावसायिक पर्यावरण

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 भारतीय व्यावसायिक पर्यावरण : अवधारणा, संघटक व महत्व। आर्थिक प्रवृत्तियों : आय, बचत एवं विनियोग, औद्योगिक प्रवृत्तियों; व्यापार एवं भुगतान सन्तुलन, मुद्रा , वित्त तथा कीमत।</p> <p>इकाई – 2 विकास की समस्याएँ : बेरोजगारी ,निर्धनता एवं क्षेत्रीय असन्तुलन, सामाजिक अन्याय, मुद्रास्फीति, समान्तर अर्थव्यवस्था , औद्योगिक रुग्णता।</p> <p>इकाई – 3 शासन की भूमिका : मौद्रिक एवं राजकोषीय नीति, औद्योगिक नीति, औद्योगिक लाइसेंसिंग नीति ,निजीकरण , अवमूल्यन, निर्यात-आयात नीति, विदेशी विनियोग का नियमन।</p> <p>इकाई – 4 पुर्व योजनाओं की समीक्षा , चालू पंचवर्षीय योजना : मुख्य रणनीति, संसाधनों आबंटन।</p> <p>इकाई – 5 अंतराष्ट्रीय पर्यावरण : अंतराष्ट्रीय व्यापारिक पर्यावरण , विश्व व्यापार की प्रवृत्ति एवं विकासशील देशों की समस्याएँ, विदेशी व्यापार एवं आर्थिक विकास , अंतराष्ट्रीय आर्थिक समूह- अंतराष्ट्रीय अर्थव्यवस्था की संस्थाये, विश्व व्यापार संगठन , व्यापार एवं प्रशुल्क एवं व्यापार संबंधि सामान्य समझौता (गैट) , विश्व बैंक , अंतराष्ट्रीय मुद्रा कोष , अंतराष्ट्रीय पुनर्निमाण एवं विकास बैंक, प्रति व्यापार , एफ. डी. आई.।</p>	<p>इकाई – 1 व्यावसायिक पर्यावरण : अवधारणा, संघटक व महत्व, आर्थिक प्रवृत्तियों : आय, बचत एवं विनियोग; व्यापार एवं भुगतान सन्तुलन, मुद्रा एवं वित्त।</p> <p>इकाई – 2 विकास की समस्याएँ : बेरोजगारी ,निर्धनता एवं क्षेत्रीय असन्तुलन, सामाजिक अन्याय, मुद्रास्फीति, समान्तर अर्थव्यवस्था , औद्योगिक रुग्णता।</p> <p>इकाई – 3 शासन की भूमिका (वर्तमान परिदृश्य में) : मौद्रिक एवं राजकोषीय नीति, औद्योगिक नीति, औद्योगिक लाइसेंसिंग नीति ,निजीकरण , उदारीकरण, भूमण्डलीकरण, अवमूल्यन, विमुद्रिकरण निर्यात-आयात नीति, विदेशी विनियोग का नियमन।</p> <p>इकाई – 4 भारत में आर्थिक नियोजन : आवश्यकता , उद्देश्य एवं ब्यूरचना, पुर्व पंचवर्षीय योजनाओं की समीक्षा , चालू पंचवर्षीय योजना। विदेशी विनिमय प्रबंध अधिनियम 2000 : अवधारणा एवं मुख्य प्रवधान।</p> <p>इकाई – 5 अंतराष्ट्रीय पर्यावरण : विश्व व्यापार की प्रवृत्ति एवं विकासशील देशों की समस्याएँ, विदेशी व्यापार एवं आर्थिक विकास , अंतराष्ट्रीय आर्थिक समूह- प्रशुल्क एवं व्यापार संबंधि सामान्य समझौता (गैट) , विश्व व्यापार संगठन, विश्व बैंक , अंतराष्ट्रीय मुद्रा कोष ,प्रत्यक्ष विदेशी निवेश, संयुक्त राष्ट्र व्यापार एवं विकास संगठन (अंकटाड)।</p>

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Suggested Readings:

1. Agarwal A. N. : Indian Economy, Vikas Publishing House Delhi. (English medium)
2. Khan Farooq A : Business and Society; S. Chand , Delhi. (English medium)
3. Dutt R. and Sundharam K. Pm. ; Indian Economy; S. Chand , Delhi. (English medium)
4. Misra S.K. and Puri V.K. : Indian Economy; Himalaya Publishing House, New Delhi. (English medium)
5. Dr. V.C. Sinha; Business Environment; SBPD Publishing House, Agra . (Both Hindi and English medium)
6. Dr. J. K. Jain; Business Environment; Madhya Pradesh hindi Granth Academy: Bhopal. (Hindi medium)
7. Gupta & Pathak; Business Environment; Ram Prasad & Sons, Raipur. (Hindi medium)
8. S.K. Singh; Business Environment; SBPD Publishing House, Agra . (Both Hindi and English medium)

Handwritten signatures and dates at the bottom of the page. From left to right: a signature with the date 20/6/19; a signature with the date 20/6/19 and the initials S.K.A.; a signature with the date 20/6/19; and a signature with the date 20/6/19.

B.Com Part- I

Compulsory

Group – III – Business Economics

Paper – II– BUSINESS ECONOMICS

Proposed Syllabus

OBJECTIVE – To acquaint the students with the principles of Business Economics as are applicable in business.

UNIT –I

Introduction : Definition ,Nature and Scope of Economics, Difference Between Micro and Macro Economics, Method of Economic Study : Inductive and Deductive Methods.

Basic problem of Economy, Working of Price Mechanism.

Utility Analysis: Measurements of Utility, Law of Diminishing Marginal Utility, Law of Equi-Marginal Utility.

UNIT-II

Law of demand: Meaning and Definitions, Effecting Factors, Types ; Exception of Law of demand.

Elasticity of Demand : Concept, Definitions, Importance, Types and Measurement of Elasticity of Demand, Factors affecting the Elasticity of Demand.

UNIT –III

Production : Factors of Production ,their characteristics and importance.

Production Functions : Law of Variable Proportions, Return to scale and Equal Product Curve Analysis. Internal and external economies and diseconomies.

UNIT –IV

Market Structure – Concept , Characteristics, Classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.

UNIT –V

Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest & Profit.

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Suggested Readings:

1. John P. Gould, Jr. and Edward P. Lazear: Micro economic theory; All India Traveller, Delhi. (English medium)
2. Koutsoyianni A. : Modern Microeconomics; Macmillan, New Delhi. (English medium)
3. Khan Farooq A : Business and Society; S. Chand , Delhi. (English medium)
4. Misra S.K. and Puri V.K. : Indian Economy; Himalaya Publishing House, New Delhi. (English medium)
5. M. L. Jhingan : Micro Economics, Vrinda publication, Delhi. (Both English and Hindi medium)
6. Dr. J. K. Jain; Business Economics; Madhya Pradesh hindi Granth Academy: Bhopal. (Hindi medium)
7. Dr. V.C. Sinha; Business Economics; SBPD Publishing House, Agra. (Both English and Hindi medium)
8. Dr. Jai Prakash Misra; Business Economics; Sahitya Bhawan Publication, Agra. (Hindi medium)

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बी,कॉम. भाग – एक
अनिवार्य
समूह-3 प्रश्नपत्र – 2 – व्यावसायिक अर्थशास्त्र

वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
<p>इकाई – 1 परिचय : अर्थशास्त्र की मुख्य समस्याएं , कीमत संयंत्र के कार्य, मांग की लोच , मांग की लोच मापने की विधियां एवं अवधारणाएं : कीमत , आय तथा आडी लोच, औसत आगम, सीमान्त आगम एवं मांग की लोच , मांग की लोच का निर्धारण तथा मांग की लोच का महत्व।</p> <p>इकाई – 2 उत्पादन फलन, परिवर्तन अनुपात का नियम , समोत्पाद , विस्तार पथ, पैमाने के प्रतिफल , आंतरिक एवं बाह्य मितव्ययिता एवं अपमितव्ययिता।</p> <p>इकाई – 3 लागत अवधारणाएं , अल्पकालीन एवं दीर्घकालीन लागत वक्र, परम्परागत एवं आधुनिक विचारधारा। बाजार संरचना तथा व्यावसायिक निर्णयन, व्यावसायिक फर्म के उद्देश्य। (अ) पूर्ण प्रतियोगिता , लाभ अधिकतमीकरण तथा फर्म का साम्य , औद्योगिक अल्पकालीन एवं दीर्घकालीन पूर्ति वक्र, कीमत एवं उत्पाद निर्धारण। (ब) एकाधिकार : एकाधिकार में मूल्य निर्धारण , फर्म का साम्य , पूर्ण प्रतियोगिता एवं एकाधिकार में अन्तर ,एकाधिकार के अंतर्गत कीमत विभेद।</p> <p>इकाई – 4 बाजार संरचना: (अ)एकाधिकृत प्रतियोगिता : आशय एवं विशेषताएं , कीमत एवं उत्पाद निर्धारण , उत्पाद विभेद , विक्रय लागत, पूर्ण प्रतिस्पर्धा से तुलना , अतिरिक्त क्षमता सिद्धांत। (ब) अल्पाधिकार : विशेषताएं , कीमत एवं उत्पाद निर्धारण , परंपरागत मॉडल, कीमत नेतृत्व , कपटपूर्ण अल्पाधिकार।</p> <p>इकाई – 5 कीमत कारक- I सीमान्त उत्पादकता सिद्धांत तथा मांग कारक, पूर्ति की प्रकृति, पूर्ण प्रतियोगिता एवं एकाधिकार में मजदूरी दर का निर्धारण ,श्रम का शोषण। कीमत कारक – II – लगान अवधारणा , रिकार्डों का</p>	<p>इकाई – 1 परिचय: अर्थशास्त्र की परिभाषा, प्रकृति एवं क्षेत्र, व्यष्टि एवं समष्टि अर्थशास्त्र में भेद, आर्थिक अध्ययन की प्रणालियां : निगमन एवं आगमन। अर्थव्यवस्था की मूल समस्याएं, कीमत संयंत्र का कार्यकरण। उपयोगिता विश्लेषण – उपयोगिता की माप, सीमांत उपयोगिता ह्रास नियम , समसीमांत उपयोगिता नियम।</p> <p>इकाई – 2 मांग का नियम : अर्थ, परिभाषा , प्रभावित करने वाले घटक, मांग के रूप, मांग के नियम के अपवाद। मांग की लोच : अवधारणा, परिभाषा, महत्व, प्रकार एवं मापन की विधियां, मांग की लोच को प्रभावित करने वाले घटक।</p> <p>इकाई – 3 उत्पादन : उत्पादन के कारक ,उनकी विशेषताएं एवं महत्व। उत्पादन फलन : परिवर्तनशील अनुपातों का नियम , पैमाने का प्रतिफल ,समोत्पाद वक्र विश्लेषण। आंतरिक एवं बाह्य मितव्ययिता एवं अपमितव्ययिता।</p> <p>इकाई – 4 बाजार संरचना: अवधारणा, परिभाषाएं, विशेषताएं एवं वर्गीकरण। पूर्ण प्रतियोगिता, अपूर्ण प्रतियोगिता, एकाधिकारी प्रतियोगिता, एकाधिकृत प्रतियोगिता ,अल्पाधिकार एवं द्वयाधिकार में कीमत निर्धारण।</p> <p>इकाई – 5 वितरण का सिद्धांत : सीमान्त उत्पादकता का सिद्धांत , मजदूरी, लगान, ब्याज एवं लाभ की अवधारणा एवं सिद्धांत।</p>

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वर्तमान पाठ्यक्रम	प्रस्तावित पाठ्यक्रम
लगान सिद्धांत तथा लगान का आधुनिक सिद्धांत , ब्याज अवधारणा तथा ब्याज का सिद्धांत लाभ की प्रकृति , अवधारणा तथा लाभ के सिद्धांत।	

Suggested Readings:

1. John P. Gould, Jr. and Edward P. Lazear: Micro economic theory; All India Traveller, Delhi. (English medium)
2. Koutsoyianni A. : Modern Microeconomics: Macmillan, New Delhi. (English medium)
3. Khan Farooq A : Business and Society; S. Chand , Delhi. (English medium)
4. Misra S.K. and Puri V.K. : Indian Economy; Himalaya Publishing House, New Delhi. (English medium)
5. M. L. Jhingan : Micro Economics, Vrinda publication, Delhi. (Both English and Hindi medium)
6. Dr. J. K. Jain; Business Economics; Madhya Pradesh hindi Granth Academy: Bhopal. (Hindi medium)
7. Dr. V.C. Sinha; Business Economics; SBPD Publishing House, Agra. (Both English and Hindi medium)
8. Dr. Jai Prakash Misra; Business Economics; Sahitya Bhawan Publication, Agra. (Hindi medium)

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B. COM - I (COMPUTER APPLICATION)
PAPER - I
COMPUTER FUNDAMENTALS

MAX MARKS : 50

Note :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

UNIT-I INTRODUCTION TO COMPUTERS

Computer System: Characteristics and capabilities. Computer Hardware and Software: Block Diagram of Computer, Different Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analog, Digital, Hybrid General and Special Purpose Computers. Generation of Computers. Computer Systems: Micro, Minis & Main-Frames. Limitations of Micro Computer. **Number systems:** Decimal number system. Binary number system. Octal and Hexadecimal number system. 1's and 2's complement. **Codes:** ASCII, EBCDI codes, Gray code and BCD. **Logic Gates:** AND, OR, NOT GATES and their Truth tables, NOR NAND and XOR gates.

UNIT-II COMPUTER PERIPHERALS

Introduction to Input Devices: Categorizing Input Hardware, Keyboard, Direct Entry- Card Readers Scanning Devices - O.M.R. Character Readers, Thumb Scanner, MICR Smart Cards, Voice Input Devices Pointing Devices - Mouse Light Pen, Touch Screen. **Computer Output :** Output Fundamentals, Hardcopy Output Devices, Impact Printers, Non-Impact Printers, Plotters, Computer output Microfilm/Microfiche (COM) System, Softcopy Output Devices, Cathode Ray Tube, Flat Screen Technologies, Projectors, Speakers.

UNIT-III BASIC COMPONENTS AND STORAGE

Central Processing Unit : The Microprocessor, control unit, A.L.U., Registers, Buses, Main Memory, Main Memory(RAM) for microcomputers, Read Only Memory(ROM). Storage Devices: Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods – Sequential, Direct & Indexed Sequential, Tape Storage and Retrieval Methods Tape storage Devices, characteristics and limitations, Direct access Storage and Microcomputers - Hard Disks, Disk Cartridges, Direct Access Storage Devices for large Computer systems, Mass storage systems and Optical Disks, CD ROM.

UNIT-IV COMPUTER SOFTWARE AND LANGUAGES

System Software: System software Vs. Application Software, Types of System Software, Introduction and Types of Operating Systems, Boot Loader, Diagnostic programs, BIOS, Utility Programs, **Application Software :** Microcomputer Software, Interacting with the System, Trends in PC software, Types of Application Software, Difference between Program and Packages. **Computer Language:** Definition, Generations of Computer languages, Types of Languages, **Language Processors:** Assembler, Interpreter, Compiler, Linker and Loader, Programming constructs, Algorithm and flowchart.

UNIT-V INTRODUCTION TO MS-DOS AND WINDOWS

Introduction to DOS: History and Versions of DOS Fundamentals of DOS: Physical Structure of the Disk, Compatibility of drives, Disks & DOS versions, Preparing Disks for use, Device Names. Getting Started with DOS: Booting Process (DOS, Windows ,UNIX), System Files and Command.com, Internal DOS files & Directories, Elementary External DOS Commands, Creating a Batch Files, Additional Commands. **Microsoft Windows: Operating** system, Definition and functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel-display properties, adding and removing software and hardware setting sate and time, screen saver and appearance. Using windows accessories.

TEXT BOOK

1. Introduction to Information Technology, V. Rajaraman, PHI Sixth Edition.
2. Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
3. Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
4. Computers Today, Suresh K. Basandra, Galgotia Publications.

Handwritten signatures and dates:
Abhinav 19/11/19
P.K. Sinha 19/11/19
M. J. 19/11/19
K. S. Dubey 19/11/19
A. K. 19/11/19
R. S. 19/11/19

B. COM - I (COMPUTER APPLICATION)

PAPER - II

PC S/W & MM

MAX MARKS: 50

Note :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

UNIT-I USING OFFICE MS-WORD

Introduction to word processing software and its features, Creating new document, Saving documents, Opening and printing documents. **Home Tab:** Setting fonts, Paragraph settings, various styles (Normal, No spacing, Heading1, Heading2, Title Strong), Find & replace, Format Printer, Copy paste and pasts special. **Insert Tab:** Pages, Tables, pictures, clipart, shapes, header & footer, word art, equation and symbols. **Page Layout Tab:** Page setup, page Background, Paragraph (indent and spacing). **Mailing Tab:** Create envelopes and Labels, Mail merge. **Review Tab:** Spelling and grammar check, new comment, Protect document. **View Tab:** Document views, zoom, Window (New window, Split, Switch window).

UNIT-II WORKING WITH MS-EXCEL

Introducing Excel, Use of Excel sheet, Creating new sheet, Saving, Opening & Printing workbook. **Home Tab:** Font, Alignment, Number, Styles and cells and editing, Conditional Formatting. **Insert Tab:** Table, Charts (Column Chart, Pie chart, Bar chart, Line chart) and Texts (heading & Footer, word art, signature line). **Page Layout Tab:** Page setup options, Scale to fit (width, height, scale) **Formulas Tab :** Autosum (sum, average, min, max). Logical (IF, and, or, not, true, false), Math & trig (sin, cos, tan, ceiling, floor, fact, mod, log), watch window. **Data Tab:** Get external data from MS Access, Sort and filter options, Data validation, Group and ungroup. **Review Tab:** Protect sheet, Protect workbook and Share workbook. **View Tab:** Page break, Page layout, Freezing panes, Split and hide.

UNIT-III WORKING WITH MS-POWERPOINT

Introducing power point, Use of power point presentation, Creating new slides saving, Opening and printing. **Home Tab:** New slide, Layout, Reset, Delete, Setting text direction, Align text, Convert to smart art, drawing options. **Insert Tab:** Table picture, clipart, photo album, smart art, shapes and chart, movie and sound, hyperlink and action, text box, word art, object **Design Tab:** Page setup option, slide orientation, applying various themes, selecting background style and formatting it. **Animation Tab:** Custom animation for entrance, exit and emphasis, applying slide transition, setting transition speed and sound, animation on rehears timing. **Slide show & View Tab:** Start slide show options, setup option. **View Tab:** Presentation views, colours and window option.

UNIT-IV WORKING WITH MS-ACCESS

Front end and back end of application, Introduction to DMBS, features of dbms, Creating blank databases, Saving it in accdb format. Defining data type in MS Access. **Home Tab:** Datasheet view, design view, pivot chart view, pivot table view, sort and filter prions. **Create Tab:** Creating tables, creating reports, query wizard. **External Data Tab:** Importing data from access and excel sheet, exporting data to excel and MS word. **Datasheet Tab:** Relationships, fields and columns options, Data type and formatting options.

UNIT-V ANIMATION AND GRAPHICS

Basic concept of 2D/3D Animation, Principle of animation, application of Multimedia, hardware and Software resources requirement for animation, introduction of various file formats (.mpeg, .gif, .jpeg, .mp4, .tif, .flv) **Creating a new movie in flash :** Get set Up, Input Text, Animate Text, Drawing and painting with tools, brush, create basic shapes like oval, Rectangle & Polystar Tools, Tools working with object & filing the object. Transformation object properties dialog box, creating layers motion tweeing, shape tweeing, Mask layers, basic action scripts, importing sound trough Flash.

Handwritten signatures and dates of four individuals:

- Signature: *Abhinav*, Date: *19/11/19*
- Signature: *M. J.*, Date: *19/11/19*
- Signature: *K. D. Dubey*, Date: *19/11/19*
- Signature: *P. K.*, Date: *19/11/19*

TEXT BOOK

1. Microsoft Office 2007 Fundamentals, L. Story, D. Walls.
2. MS Office, S.S. Shrivastava, Firewall Media.
3. Office 2000 made easy, Alan Neibauer, Tata McGraw Hill.
4. FLASHMX Bible, Robert Reinhart.
5. Sams Teach Yourself Macromedia Flash 8 in 24 Hours, Phillip Kerman
6. How to do everything with Macromedia, Bonnie Blake, Doug Sahlin
7. Multimedia Making it works, Tay Vaughan Tata McGraw Hill.

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P. K.
19/11/19

~~M~~
19/11/19

~~Kundubet~~
19/11/19
H
19/11/19

~~Praveen~~
19/11/19



हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

ई मेल : academic@durguniversity.ac.in

वेब साइट : www.durguniversity.ac.in

दूरभाष : 0788-2359400

क्र. 1458 /अका./2019

दुर्ग, दिनांक 05/07/2019

प्रति,

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषय:- स्नातक स्तर के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019।

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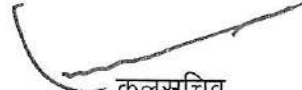
विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर के निम्नलिखित कक्षा/विषय के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2019-20 से स्नातक के तीनों वर्ष के लिए लागू किया जाता है।

1. बी.कॉम. — आधार पाठ्यक्रम-हिन्दी भाषा एवं वाणिज्य।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र-छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाइट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार


कुलसचिव

क्र. 1459 /अका./2019

दुर्ग, दिनांक 05/07/2019

प्रतिलिपि:-


1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।


सहा. कुलसचिव (अका.)

B. Com. - II

INDEX

1. Revised Ordinance No.-23
2. Scheme of Examination
3. Hindi Language
4. English Language
5. G-I
 1. Corporate Accounting
 2. Company Law
6. G-II
 1. Cost Accounting
 2. Principle of Business Management
7. G-III
 1. Business Statistics
 2. Fundamental of Entrepreneurship
8. Computer Application

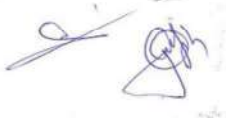
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REVISED ORDINANCE NO.-23

(As per State U.G.C. Scheme)

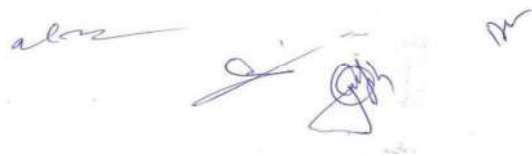
BACHELOR OF COMMERCE

1. The three year course has been broken up into three Parts.
Part-I known as B. Com. Part-I Examination at the end of first year. Part-II Examination at the end of the second year, and,
Part-III Examination at the end of the third year.
2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of Chhattisgarh Board of Secondary Education, Raipur or any other examination recognized by the University or Chhattisgarh Board of Secondary Education as equivalent there to has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year, shall be eligible for appearing at the B.Com. Part-I examination.
3. A candidate who after passing B.Com. Part-I examination of the University or any other examination recognized by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-II Examination.
4. A candidate who after passing B.Com. Part-II examination of the University has completed a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-III examination.
5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate students shall be eligible for admission to the examination as per provision of Ordinance No. 6 relating to examinations (General).
6. Provided that non-collegiate candidates shall be permitted to offer only such subject/ papers as are taught to the regular students at any of the University Teaching Department or College.
7. Every candidate for B.Com. Examination shall be examined in subjects as mentioned in the marking scheme and course or studies.
8. A candidate who has passed the B.Com. Part-III examination of the University shall be

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allowed to present him of examination in any of the additional subjects prescribed for the B.Com. Examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B. Com. Part-I examination in the subject which he proposes to offer then the B.Com. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

9. In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total marks in each paper/group of subjects. In group where both theory and practical examinations are provided an examinee must pass in both theory and practical parts of examination separately.
10. Candidate will have to pass separately at the Part-I, Part-II and Part-III examination. No division shall be assigned on the result of the Part-I and Part-II examinations In determining the division of the Final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part-I examination.
11. Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject/group only, the total aggregate mark being carried over for determining the division, shall include actual marks obtained in the subject/group in which he appeared at the supplementary examination.
12. Successful examinees at the Part - III examination obtaining 60% or more marks shall be placed in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.



Hemchand Yadav Vishwavidyalaya, Durg (C.G.)
SYLLABUS
B.COM. PART-II
GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION

Subject		Max.	Min.
A. Foundation Course			
I. Hindi Language		75	26
II. English Language		75	26
B. Three Compulsory Groups			
Group-I			
I. Corporate Accounting	75	150	50
II. Company Law	75		
Group-II			
I. Cost Accounting	75	150	50
II. Principles of Bus. Management	75		
Group-III			
I. Business Statistics	75	150	50
II. Fundamental of Entrepreneurship	75		

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संशोधित पाठ्यक्रम
बी.ए./बी.एस-सी./बी.कॉम./बी.एच.एस.-सी.
भाग - दो, आधार पाठ्यक्रम
प्रश्न पत्र - प्रथम (हिन्दी भाषा) (पेपर कोड - 0171)

पूर्णांक- 75

खण्ड - क	निम्नलिखित 5 लेखकों के पाठ शामिल होंगे -	अंक-35
	1. महात्मा गांधी - चोरी और प्रायश्चित	
	2. आचार्य नरेंद्र देव - युवकों का समाज में स्थान	
	3. वासुदेव शरण अग्रवाल - मातृभूमि	
	4. हरि ठाकुर - डॉ. खूबचंद बघेल	
	5. पं. माधवराव सप्रे - सम्भाषण-कुशलता	
खण्ड-ख	हिन्दी भाषा और उसके विविध रूप	अंक-16
	1. कार्यालयीन भाषा	
	2. मीडिया की भाषा	
	3. वित्त एवं वाणिज्य की भाषा	
	4. मशीनी भाषा	
खण्ड-ग	हिन्दी की व्याकरणिक कोटियाँ	अंक-24
	संज्ञा, सर्वनाम, विशेषण, क्रिया विशेषण, समास, संधि एवं संक्षिप्तियाँ अनुवाद व्यवहार : अंग्रेजी से हिन्दी में अनुवाद	

इकाई विभाजन-

इकाई- 1	चोरी और प्रायश्चित : महात्मा गांधी / कार्यालयीन भाषा, मीडिया की भाषा
इकाई- 2	युवकों का समाज में स्थान : आचार्य नरेंद्र देव / वित्त एवं वाणिज्य की भाषा, मशीनी भाषा
इकाई- 3	मातृभूमि: वासुदेवशरण अग्रवाल / संज्ञा सर्वनाम, विशेषण, क्रिया विशेषण
इकाई- 4	डॉ. खूबचंद बघेल : हरि ठाकुर/समास, संधि,
इकाई- 5	सम्भाषण-कुशलता : पं. माधवराव सप्रे, / अनुवाद - अंग्रेजी से हिन्दी में अनुवाद, संक्षिप्तियाँ

मूल्यांकन योजना -

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। प्रत्येक इकाई को दो-दो खण्डों (क्रमशः 'क' और 'ख' में) विभक्त करते हुए निर्धारित पाठ से 8 एवं शेष पाठ्य सामग्री से 7 अंक के प्रश्न होंगे। इस प्रकार पूरे प्रश्न-पत्र के पूर्णांक 75 होंगे।

पाठ्यक्रम संशोधन का औचित्य : विद्यार्थी चर्चित एवं सुप्रसिद्ध व्यक्तियों के लेख के माध्यम से समाज एवं राष्ट्रहित के साथ-साथ व्यक्तित्व विकास विषयक मुद्दों से परिचित हो सकें तथा व्याकरणक एवं भाषा विषयक प्रस्तावित पाठ्यक्रम के माध्यम से हिन्दी भाषा संबंधित प्रयोग पक्ष से परिचित होते हुए प्रतियोगी परीक्षाओं की दृष्टि से ज्ञानार्जन कर सकें।

ENGLISH LANGUAGE (Paper Code-1132)

B.A. / B.Sc. /B.COM. /B.H. Sc. - II

M.M.75

The question paper for B.A. /B.Sc./B.Com./B.H.Sc., English Language and cultural values shall comprise the following units:

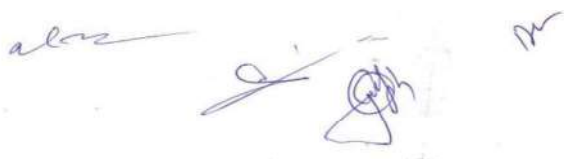
UNIT-I	Short answer questions to be passed by (Five short answer questions of three marks each)	15 Marks
UNIT-II	(a) Reading comprehension of an unseen passage (b) Vocabulary	05 Marks
UNIT-III	Report-Writing	10 Marks
UNIT-IV	Expansion of an idea	10 Marks
UNIT-V	Grammar and Vocabulary based on the prescribed text book.	20+15Marks

Note: Question on all the units shall asked from the prescribed text which will Comprise Specimens of popular creative/writing and the following it any

- a Matter & technology
 - i. State of matter and its structure
 - ii. Technology (Electronics Communication, Space Science)
- b Our Scientists & Institutions
 - I. Life & work of our eminent scientist Arya Bhatt. Kaurd Charak Shusruta, Nagarjuna, J.C. Bose and C.V. Raman, S. Rmanujam, Homi J. Babha Birbal Sahani.
 - II. Indian Scientific Institutions (Ancient & Modern)

Books Prescribed:

Foundation English for U.G. Second Year - Published by M.P. Hindi Granth Academy, Bhopal.



B.Com. II year
C O M P U L S O R Y
Group - I PAPER - I (CORPORATE ACCOUNTING)
(As per company act 2013)
Proposed Syllabus

OBJECTIVE

This course enable the students to develop awareness about corporate accounting in conformity with the provisions of companies Act.

UNIT-I Issue, Forfeiture, and Re-issue of Shares : Redemption of preference shares; Issue and redemption of debentures.

UNIT-II Final Accounts (as per company act 2013)
Liquidation of Company .

UNIT-III Valuation of Goodwill and Shares.

UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard 14; Accounting for internal reconstruction - excluding intercompany holdings and re-construction schemes.

UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only.

SUGGESTED READINGS :

1. Dr. S.M. Shukla, Sahitya Bhawan Agra.
2. Dr. Mangal Mehta & Agrawal Published - Indore.
3. Dr. Karim Khanuja - Published - Agra.
4. Gupta R.L., Radhaswamy M; Company Accounts; Sultan Chand & Sons, New Delhi.

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Group - I - PAPER – II

COMPANY LAW

Proposed Syllabus

OBJECTIVE

This objective of this course is to provide basic knowledge of the provisions Companies Act, 2013, along with relevant case law.

UNIT-I Corporate personalities; Kinds of Companies, Nature & Scope, promotion on and incorporation of companies.


UNIT-II Memorandum of Association; Articles of Association; Prospectus, Shares; share capital - transfer and transmission.

UNIT-III Capital management - borrowing powers, mortgages and charges, debentures.
Directors - Managing Director, whole time director, Appointment, Remuneration, and duties.

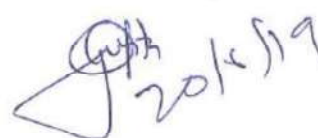
UNIT-IV Company meetings - kinds, Notice, quorum, voting, proxy, resolutions, minutes.

UNIT-V Majority powers and minority rights; Prevention of oppression and mismanagement. Winding up - kinds and conduct.


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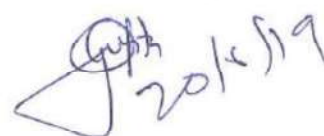
SUGGESTED READINGS :

1. Singh Avtar : Company Law; Eastern Book Co., Lucknow.
2. Dr. S.M. Shukla, Shahitya Bhawan Agra.
3. Dr. R.C. Agrawal, Shahitya Bhawan Agra.
4. Kapoor N.D. : Company Law - Incorporating the Provisions of the Companies Amendment Act, 2013 Chand & Sons, New Delhi


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Group - II PAPER – I

(COST ACCOUNT)

Proposed Syllabus

OBJECTIVE

This course exposes the students to the basic concepts and the tools used in cost accounting.

UNIT-I Introduction : Nature and scope of cost accounting ; Cost concepts and classification; Methods and techniques; Installation of costing system; Concept of cost audit. Accounting for Material : Material Control; Concept and techniques; Pricing of material issues; Treatment of material losses.

UNIT-II Accounting for Labour : Labour cost control procedure; Labour turnover; Idle time and overtime; Methods of wage payment - time and piece rates; Incentive schemes. Accounting for overheads; Classification and departmentalization; Absorption of overheads; Determination of overhead rates; Under and over absorption, and its treatment.

UNIT-III Cost Ascertainment : Unit costing; Job, batch and contract costing.

UNIT-IV Operating costing; Process Costing - excluding inter - process profits, and joint and by - products.


UNIT-V Cost Records : Intergal and non - integral system; Reconciliation of cost and financial accounts; Break Even Point.

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SUGGESTED READINGS :

1. M.L. Agrawal : Sahitya Bhawan Agra.
2. Maheshwari S.N. : Advanced Problems and Solutions in Cost Accounting; Sultan Chand, New Delhi.
3. Arora M.N. : Cost Accounting - Principles and Practice; Vikas, New Delhi.
4. Jain S.P. and Narang K.L. : Cost Accounting; Kalyani New Delhi.


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Group - II - PAPER - II

PRINCIPLES OF BUSINESS MANAGEMENT


Proposed Syllabus

OBJECTIVE

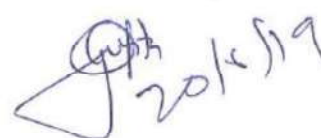
This Course familiarizes the students with the basics basics of principles of management.

- UNIT-I** Introduction : Concept, nature, process, and significance of management; management roles (Mintzberg); An overview of functional areas of management; Development management thought; Classical and neo-classical systems; Concept approaches.
- UNIT-II** Planning : Concept, process and types.
Decision making - concept and Bounded rationality; Management by objectives; Corporate planning; Environment analysis and diagnosis; Strategy formulation.
- UNIT-III** Organizing : Concept, nature, process and significance; Authority and resident relationships; Centralization and decentralization; Departmentation; Organization structure - forms and contingency factors.
- UNIT-IV** Motivating and Leading People at work : Motivation - concept; Theories Herzberg, McGregor, and Ouchi; Financial and non- financial incentives.
Leadership - concept and leadership styles; Leadership theories (Tannenb Schmidt.); Likert's System Management;
Communication - nature, process, networks, and barriers, Effective Communication.
- UNIT-V** Managerial Control : Concept and process; Effective control system; Technical control - traditional and modern. Management of Change : Concept, nature, and process of planned Resistance to change; Emerging horizons of management in a environment.


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SUGGESTED READINGS :

1. Dr. R.C. Agrawal, Agra.
2. Dr. S.C. Saxena, Agra.
3. Wehrich and Koontz, et al : Essentials of Management; Tata McGraw Hill, New Delhi.


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Group - III - PAPER - I
BUSINESS STATISTICS

Proposed Syllabus

OBJECTIVE

It enable the students to gain understanding of statistical techniques as are applicable to business.

UNIT-I Introduction : Statistics as a subject; Descriptive Statistics - compared to Inferential Statistics; Types of data; Summation operation; Rules of Sigma E operations, Analysis of University Data; Construction of a frequency distribution; Concept of central tendency.

UNIT-II Dispersion - and their measures; Partition values; Skewness and measures;

UNIT-III Analysis of Bivariate Data : Linear regression two variables and correlation.

UNIT-IV Index Number; Meaning, types, and uses; Methods of Constructing price and quantity indices (simple and aggregate); Tests of adequacy; Chain - base index numbers; Base shifting, splicing and deflating; Problems in constructing index numbers; Consumer price index. Analysis of Time Series : Cause of Variation in time series data; Components of a time series; Decomposition - Additive and Multiplicative models; Determination of trend - Moving Averages Method and method of least squares (including linear, second degree, parabolic, and exponential trend); Computation of seasonal indices by simple averages, ratio - to - trend, ratio - to - moving average, and link relative methods.


UNIT-V Forecasting and Methods : Forecasting - concept, types and importance; General approach to forecasting; Methods of forecasting; demand; Industry Vs Company sales forecast; Factors affecting company sales. Theory of Probability : as a concept; The three approaches to defining probability; Addition and multiplication laws of probability; Conditional Probability; Bayes' Theorem; Expectation and Variance of a random variable.

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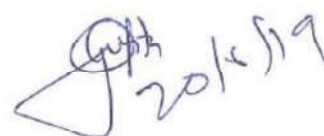
SUGGESTED READINGS :

1. S.M.Shukla, Shahitya Bhawan,Agara.
2. Statistical Analysis, Dr. Rajesh Shukla and J.B. Agrawal


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Group - III PAPER – II
FUNDAMENTALS OF ENTREPRENEURSHIP

Proposed Syllabus

OBJECTIVE

It Provides exposure to the students to the entrepreneurial culture and industrial growth so as to preparing them to set up and manage their own small units.

UNIT-I Introduction : The entrepreneur; Definition; Emergence of entrepreneurial class; Theories of entrepreneurship; Role of socio - economic environment; Characteri-stics.

UNIT-II Promotion of a Venture; Opportunities analysis; External environmental analysis economic, social and technological; Competitive factors; Legal requirements for establishment of a new unit, and raising of funds; Venture capital sources and documentation required.

UNIT-III Entrepreneurial Behavior : Innovation and entrepreneur; Entrepreneurial behavior and Psycho - Theories, Social responsibility.

UNIT-IV Entrepreneurial Development Programs (EDP) : EDP, their role, relevance, and achievements; Role of Government in organizing EDPs; Critical evaluation.


UNIT-V Role of Entrepreneur : Role of an entrepreneur in economic growth as an innovator, generation of employment opportunities, complementing and supplementing economic growth, bringing about social stability and balanced regional development of industries; Role in export promotion and import substitution, forex earnings, and augmenting and meeting local demand.

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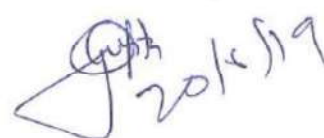
SUGGESTED READINGS :

1. Srivastava S.B. : A Practical Guide to industrial Entrepreneurs; Sultan Chand and Sons, New Delhi.
2. Tandon B.C. : Environment and Entrepreneur; Chugh Publications, Allahabad.
3. Prasanna Chandra : Project Preparation, Appraisal, Implementation; Tata McGraw Hill, New Delhi.


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COMPUTER APPLICATION

MARKSDISTRIBUTION PAPER - I

INTERNET APPLICATION & E-COMMERCE

Proposed Syllabus

UNIT - I Introduction to HTML

Introduction to Internet & World Wide Web

Internet- Indian and the Internet, Profile of Indian Surfer, History of the Internet, Indian Internet History, Technological Foundation of Internet, Application in Internet Environment, Movement of files/data between two computers, TCP/IP, IP Addresses, Domain Name System, Domain Name Services, allocation of second level domains in India, Internet & India.

World Wide Web (WWW) - WWW consortium browsing and Information retrieval, exploring the WWW, address : URL.

UNIT - II Introduction to HTML & Designing Web Page

Concept to Website, Web standards, What is HTML, HTML documents / file, HTML Editor, Explanation of the structure of Homepage, Elements in HTML Documents, HTML Elements, HTML Tags & Basic HTML Tags, viewing the source of web page & downloading the web page source, Extensible HTML, CSS, XML, XSL.

HTML Document Structure - Head Section

Illustration of Document Structure, Mark-up elements within the Head : BASE, ISINDEX, LINK, META, TITLE, SCRIPT.

UNIT - III HTML Document Structure & HTML Forms

Body Section - Illustration, Body elements, Background, TEXT BODY element, ADDRESS, BLOCKQUOTE, TABLE, COMMENTS, CHARACTER Emphasis modes, Logical styles, Physical Styles, FONT, BASEFONT and CENTER.

Image, Internal and External Linking

Between Web Pages - IMG Elements,

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HEIGHT, WIDTH, ALT, ALIGN, Illustration of IMG elements, Hypertext Anchors, NAME attribute in Anchor.

HTML Forms - Forms, Form tag, Form

Structure, Input types, Drop down menu or select menu tags, image buttons.

UNIT - IV Introduction to E-Commerce & Business

Strategy in Electronic Age

E-Commerce - Scope & definition of language, E-commerce & Trade cycle, E-markets, E-Data Interchange, Internet Commerce, E-commerce in Perspective.

Business Strategy - The value chain, competitive advantage, business strategy, Case-Study : e-commerce in Passenger Air Transport.

UNIT - V B to B e-Commerce & B to C e-Commerce Business to Business e-

Commerce - Inter- organisational Transactions, Electronic markets, Electronic Data Interchange (EDI) - the nuts and bolts, EDI and business, Inter roganizational e-Commerce.

Business to Consumer e-Commerce - Consumer trade transactions.

The elements of e-Commerce - elements, e-visibility, e-shop online payments, delivering the goods, after sales service, Internet e-Commerce Security A web site evaluation model.

e-Business - Introduction, Internet Bookshops, Software Supplies & support, e-newspapers, internet banking, virtual auctions, online share dealing, gambling on net, e-diversity.

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COMPUTER APPLICATION

PAPER – II

RELATIONAL DATABASE MANAGEMENT SYSTEM

Proposed Syllabus

UNIT – I DATABASE SYSTEM CONCEPT & ENTITY RELATIONSHIP MODEL :

Operational data, why database, data independence, an Architecture for a Data base system, DDL & DML, Data Dictionary, Data Structures and Corresponding Operators, Data Models, The Relational approach, The Network approach, DBMS storage structure and access method. Entity-Relationship model as a tool for conceptual design-entities attributes and relationships. ER diagrams; strong and weak entities Generalization; Specialization and aggregation. Converting and ER-model into relational.

UNIT – II Relational Database Management System Relational Model :

Structure to Relational Database, Relational Algebra, The Domain Relational, Calculus, Extended Relational-Algebra Operation, Modification of database, Views. **Relational Database Design :-** Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization : 1NF, 2NF, BCNF, 3NF, 4NF, 5NF operations not involving cursors, Operations involving cursors, dynamic statements, security & integrity security specification in SQL.

UNIT – III RELATIONAL DATABASE DESIGN :

Relational Algebra, Traditional Set Operations, Attributes Names for Derived Relations, special relational operations, further normalization, functional dependence. First, second and third normal forms, BCNF Forms, relations with more than one candidate key, Good and bad decompositions, fourth normal form, fifth normal form, De-normalization.

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UNIT – IV Introduction to RDBMS Software - Oracle

(a) **Introduction** : Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL * PLUS.

(b) **DDL and DML** : Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views : What is Views, Create, Drop and Retrieving data from views.

UNIT – V (a) **Security** : Management of Roles, Changing Password, Granting Roles & Privilege, with drawing privileges.

(b) **PL/SQL** : Block Structure in PL/SQL, Variable and constants, Running PL/SQL in the SQL*PLUS, Data base Access with PL/SQL, Exception Handling, Record Data type in PL/S!L, Triggers in PL/SQL.

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हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

ई मेल : academic@durguniversity.ac.in

वेब साइट : www.durguniversity.ac.in

दूरभाष : 0788-2359400

क्र. 3861 / अका. / 2021

दुर्ग, दिनांक 30/7/21

प्रति,

प्राचार्य,

समस्त संबद्ध महाविद्यालय,

हेमचंद यादव विश्वविद्यालय,

दुर्ग (छ.ग.)

विषय:- स्नातक स्तर भाग-तीन के पाठ्यक्रम विषयक।

संदर्भ:- संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05. 2019।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग-तीन के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2021-22 से लागू किये जाते हैं:-

1. बी.ए. — आधार पाठ्यक्रम — हिन्दी भाषा, हिन्दी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, मानवविज्ञान, संस्कृत, सांख्यिकी प्राचीन भारतीय इतिहास, भूगोल, मनोविज्ञान
2. बी.एस-सी. — आधार पाठ्यक्रम-हिन्दी भाषा, जीव विज्ञान, मानवविज्ञान, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, गणित, भौतिक शास्त्र, प्राणीशास्त्र, सूक्ष्मजीव विज्ञान, वनस्पतिशास्त्र, भूविज्ञान, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3. बी.ए./बी.एस.सी. — आधार पाठ्यक्रम — हिन्दी भाषा एवं गृह विज्ञान।
(गृह विज्ञान)
4. बी.सी.ए. — भाग-3
5. बी.कॉम. — भाग-1, भाग-2 एवं भाग-3 का परिवर्तित पाठ्यक्रम सत्र 2019-20 में जारी कर लागू किया जा चुका है।

कृ.प.उ.

उपरोक्त विषयों को शिक्षा सत्र 2021-22 से संशोधित रूप में स्नातक स्तर भाग-तीन के लिए लागू किया जाता है स्नातक स्तर भाग-एक हेतु सत्र 2019-20 एवं स्नातक स्तर भाग-दो हेतु सत्र 2020-21 में लागू पाठ्यक्रम मान्य होंगे।

टीप:- परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाईट पर उपलब्ध है।


कुलसचिव

क्र. 3862 /अका./2021

दुर्ग, दिनांक 20/7/21

प्रतिलिपि:-

1. संयुक्त संचालक, उच्च शिक्षा विभाग के पत्र क्र. 2456/315/आउशि/सम/2019, दिनांक 16.05.2019 के परिपेक्ष्य में सूचनार्थ
2. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. वेबसाईट प्रभारी, वेबसाईट पर पाठ्यक्रम प्रकाशित करने हेतु।
4. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।


सहा. कुलसचिव (अका.)

HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)

Website - www.durguniversity.ac.in, Email - durguniversity@gmail.com



SCHEME OF EXAMINATION & SYLLABUS Of

**B.Com. Final Year
Session 2021-22**

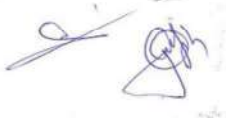
**(Approved by Board of Studies)
Effective from July 2021**

REVISED ORDINANCE NO.-23

(As per State U.G.C. Scheme)

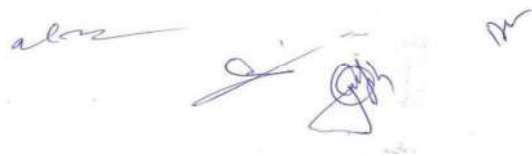
BACHELOR OF COMMERCE

1. The three year course has been broken up into three Parts.
Part-I known as B. Com. Part-I Examination at the end of first year. Part-II Examination at the end of the second year, and,
Part-III Examination at the end of the third year.
2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of Chhattisgarh Board of Secondary Education, Raipur or any other examination recognized by the University or Chhattisgarh Board of Secondary Education as equivalent there to has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year, shall be eligible for appearing at the B.Com. Part-I examination.
3. A candidate who after passing B.Com. Part-I examination of the University or any other examination recognized by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-II Examination.
4. A candidate who after passing B.Com. Part-II examination of the University has completed a regular course of study for one academic year in an affiliated College or in the Teaching Department of the University, shall be eligible for appearing at the B.Com. Part-III examination.
5. Besides regular students, subject to their compliance with this ordinance, ex-students and non-collegiate students shall be eligible for admission to the examination as per provision of Ordinance No. 6 relating to examinations (General).
6. Provided that non-collegiate candidates shall be permitted to offer only such subject/ papers as are taught to the regular students at any of the University Teaching Department or College.
7. Every candidate for B.Com. Examination shall be examined in subjects as mentioned in the marking scheme and course or studies.
8. A candidate who has passed the B.Com. Part-III examination of the University shall be

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allowed to present him of examination in any of the additional subjects prescribed for the B.Com. Examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B. Com. Part-I examination in the subject which he proposes to offer then the B.Com. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

9. In order to pass at any part of the three year degree course examination, an examinee must obtain not less than 33% of the total marks in each paper/group of subjects. In group where both theory and practical examinations are provided an examinee must pass in both theory and practical parts of examination separately.
10. Candidate will have to pass separately at the Part-I, Part-II and Part-III examination. No division shall be assigned on the result of the Part-I and Part-II examinations In determining the division of the Final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part-I examination.
11. Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject/group only, the total aggregate mark being carried over for determining the division, shall include actual marks obtained in the subject/group in which he appeared at the supplementary examination.
12. Successful examinees at the Part - III examination obtaining 60% or more marks shall be placed in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.



- इकाई-एक (क) भारत माता : सुमित्रानंदन पंत
(ख) कथन की शैलियाँ
1. विवरणात्मक शैली 2. मूल्यांकन शैली
3. व्याख्यात्मक शैली 4. विचारात्मक शैली
- इकाई-दो (क) सूखी डाली : उपेन्द्रनाथ अशक
(ख) विभिन्न संरचनाएँ
1. विनम्रता सूचक संरचना 2. विधि सूचक संरचना
3. निषेध परक संरचना 4. काल-बोधक संरचना
5. स्थान-बोधक संरचना 6. दिशा बोधक संरचना
7. कार्य-कारण सम्बन्ध संरचना 8. अनुक्रम संरचना
- इकाई-तीन (क) वसीयत : मालती जोशी
(ख) कार्यालयीन पत्र और आलेख
1. परिपत्र 2. आदेश
3. अधिसूचना 4. ज्ञापन
5. अनुस्मारक 6. पृष्ठांकन
- इकाई-चार (क) योग की शक्ति : हरिवंश राय बच्चन
(ख) अनुवाद : स्वरूप एवं परिभाषा, उद्देश्य
स्रोत भाषा और लक्ष्य भाषा,
अच्छे अनुवाद की विशेषताएँ,
अनुवाद प्रक्रिया, अनुवादक
- इकाई-पांच (क) संस्कृति और राष्ट्रीय एकीकरण : योगेश अटल
(ख) घटनाओं, समारोहों आदि का प्रतिवेदन, विभिन्न प्रकार के निमंत्रण पत्र

मूल्यांकन योजना : प्रत्येक इकाई से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न में आंतरित विकल्प होगा। प्रत्येक प्रश्न के 15 अंक होंगे। इसलिए प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमशः 8 एवं 7 अंक होंगे। प्रश्नपत्र का पूर्णांक 75 निर्धारित है।

5/7/2024

डा. आशा त्रिपाठी

5/7/2024

Arshana Tripathi

The question paper for B.A./B.Sc./B.Com./B.H.Sc. III Foundation course, English Language and General Answers shall comprise the following items :

Five question to be attempted, each carrying 3 marks.

UNIT-I Essay type answer in about 200 words. 5 essay type question to be asked three to be attempted.	15
UNIT-II Essay writing	10
UNIT-III Precise writing	10
UNIT-IV (a) Reading comprehension of an unseen passage	05
(b) Vocabulary based on text	10
UNIT-V Grammar Advanced Exercises	25

Note: Question on unit I and IV (b) shall be asked from the prescribed text. Which will comprise of popular create writing and the following items. Minimum needs housing and transport Geo-economic profile of M.P. communication Educate and culture. Women and Worm in Empowerment Development, management of change, physical quality of life. War and human survival, the question of human social value survival, the question of human social value, new Economic Philosophy Recent Diberaliation Method) Demoration decentralization (with reference to 73, 74 constitutional Amendment.

Books Prescribed:

Aspects of English Language and Development - Published by M.P. Hindi Granth Academy, Bhopal.

Hemchand Yadav Vishwavidyalaya, Durg (C.G.)

SYLLABUS


B.COM. PART-III

GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION

Subject		Max.	Min.
Foundation Course			
I. Hindi Language		75	26
II. English Language		75	26
Compulsory Groups			
Group-I			
I. Income Tax	75	150	50
II. Auditing	75		
Group-II			
I. Indirect Taxes with GST	75	150	50
II. Management Accounting	75		
Group-III Optional			
Option Group A (Finance Area)			
I. Financial Management	75	150	50
II. Financial Market Operations	75		
Option Group B (Marketing Area)			
I. Principles of Marketing	75	150	50
II. International Marketing	75		
Option Group C (Commercial Area)			
I. Information Technology and its Applications in Business	75	150	50
II. Essential of e-Commerce	75		
Option Group D (Money Banking & Insurance Area)			
I. Fundamental of Insurance	75	150	50
II. Money & Banking System	75		


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B.COM PART III
COMPULSORY CORE COURSE
TITLE OF PAPER - Group-I
PAPER – I - INCOME TAX

OBJECTIVE

It enables the students to know the basics of Income Tax Act and its implications.

M.M. 75

- UNIT- I** Basic Concepts: Income, agricultural Income, casual income, assessment year, previous year, gross total income, total income, person.
Basis of charge: Scope of total income, residence and tax liability, income which does not form part of total income.
- UNIT- II** Heads of Income: Salaries; Income from house property.
- UNIT- III** Profit and gains of business or profession, including provisions relating to specific business; Capital gains, Income from other sources.
- UNIT-IV** Computation of Tax Liability: Set-off and carry forward of losses; Deduction from gross total income. Aggregation of income; Computation of total income and tax liability of individual and HUF.
- UNIT-V** Tax Management: Tax deduction at source; Advance payment of tax; Assessment procedures; Tax planning for individuals.
Tax evasion, Tax Avoidance and Tax planning. Tax Administration: Authorities, appeals, penalties.
Preparation of return of income
-Manually and on line

Suggested Reading:

1. Singhanian V.K.: Students Guide to Income Tax; Taxmann, Delhi.
2. Prasad, Bhagwati: Income Tax Law & Practice; Wily Publication, New Delhi.
3. Mehrotra H.C.: Income Tax Law & Accounts: Sahitya Bhawan, Agra.
4. Girish Ahuja and Ravi Gupta: Systematic approach to income tax: Sahitya Bhawan Publications, New Delhi.
5. Chandra Mahesh and Shukla D.C.: Income Tax Law and Practice; Pragati Publications, New Delhi.
6. R.K. Jain: Income Tax & Law (Hindi & English) Shahitya Bhavan, Publication, Agra.


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B.COM PART III
COMPULSORY CORE COURSE
TITLE OF PAPER - Group-I
PAPER – II- AUDITING

M.M. 75

OBJECTIVE

This course aims at imparting knowledge about the principles and methods of auditing and their applications.

UNIT-I Introduction: Meaning and objectives of auditing; Types of audit; Internal audit. Audit Process: Audit programme; Audit note books; Working papers and evidences.

UNIT-II Internal Check System: Internal control.
Audit Procedure: Vouching; Verification of assets and liabilities.

UNIT-III Audit of Limited Companies:
a. Company auditor – Qualification, Appointment, powers, duties, Resignation and liabilities.
b. Divisible profits and dividend.
c. Auditor's report - standard report and qualified report.
d. Special audit of banking companies.
e. Audit of educational institutions.
f. Audit of Insurance companies.

UNIT-IV Investigation: Investigation; Audit of non profit companies,
a. Where fraud is suspected, and
b. When a running a business is proposed.
c. Verifications & Valuation of assets.

UNIT-V Recent Trends in Auditing: Nature and significance of cost audit; Tax audit;
Management audit.

Suggested Reading:

1. Gupta KaPal: Contemporary Auditing: Tata Mcgraw Hill, New Delhi.
2. Tandon B.N.: Principles of Auditing: S. Chand & Co., New Delhi.
3. Pagare Dinkar: Principles and Practice of Auditing: Sultan Chand, New Delhi.
4. Sharma T.R.: Auditing Principles and Problems, SahityaBhawan, Agra.
5. Shukla S.M.: Auditing - ShahityaBhavan, Agra, (Hindi)
6. Batliboy: Auditing.


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B.COM PART III
COMPULSORY CORE COURSE

PAPER – II

Group-II -PAPER – I - INDIRECT TAXES WITH GST

OBJECTIVE

This course aims at imparting basic knowledge about GST and apply the provisions of GST law to various situations.

M.M. 75

- UNIT-I** Customs : Role of customs in international trade; Important terms and definitions goods; Duty; Exporter; Foreign going vessel; Aircraft goods; Import; Import Manifest; Importer; Prohibited goods; Shipping bill; Store; Bill of lading; Export manifest; Letter of credit; Kinds of duties - basic, auxiliary, additional or countervailing; Basics of levy ad valorem, specific duties; Prohibition of export and import of goods, and provisions regarding notified & specified goods; Import of goods - Free import and restricted import; Type of import - import of cargo, import of personal baggage, import of stores. Clearance Procedure - For home consumption, for warehousing for re-export; Clearance procedure for import by post; Prohibited exports; Canalised exports; Export against licensing; Type of exports export of cargo, export of baggage; Export of cargo by land, sea, and air routes.
- UNIT-II** State Excise, CENVAT. Detail study of State Excise during calculation of Tax.
- UNIT-III** INTRODUCTION TO GOODS AND SERVICES TAX (GST) -Objectives and basic scheme of GST, Meaning – Salient features of GST – Subsuming of taxes –Benefits of implementing GST , Structure of GST (Dual Model) – Central GST – State / Union Territory GST – Integrated GST
GST Council: Structures Power and Functions. Provisions from amendments.
- UNIT-IV** Registration under GST: Procedure for registration, Persons liable for registration, Persons not liable for registration, Compulsory registration. Exempted goods and services - Rates of GST.
Procedure relating to Levy: (CGST & SGST): Scope of supply, Tax liability on Mixed and Composite supply, Time of supply of goods and services, Value of taxable supply.

Eway-Billing

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UNIT-V ASSESSMENT AND RETURNS -

Input tax Credit: Eligibility, Apportionment, Inputs on capital goods,
Distribution of credit by Input Service Distributor (ISD)
Furnishing details of outward supplies and inward supplies, First return,
Annual return and Final return.

Suggested Reading:

1. Deloitte: GST Era Beckons, Wolters Kluwer.
2. Madhukar N Hiregange: Goods and Services Tax, Wolters Kluwer.
3. All About GST: V.S Datey - Taxman's.
4. Guide to GST: CA. Rajat Mohan,
5. Goods & Services Tax – Indian Journey: N.K. Gupta & Sunnania Batia, Barat's Publication
6. Goods & Services Tax – CA. Rajat Mohan,
7. Goods & Services Tax: Dr. Sanjiv Agrawal & CA. Sanjeev Malhotra.
8. GST - Law & Practice: Dr. B.G. Bhaskara, Manjunath. N & Naveen Kumar IM,
9. Understanding GST: Kamal Garg, Barat's Publication.

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B.COM PART III
COMPULSORY CORE COURSE
TITLE OF PAPER -Group-II
PAPER – II -MANAGEMENT ACCOUNTING

OBJECTIVE

This course provides the students an understanding of the application of accounting techniques for management.

M.M. 75

- UNIT-I** Management Accounting : Meaning, nature, scope, and functions of management Accounting; Role of management accounting in decision making; Management accounting vs financial accounting; Tools and techniques of management accounting; Financial statement; Objectives and methods of financial statements analysis; Ratio analysis; Classification of ratios - Profitability ratios, turnover ratios, liquidity ratios, turnover ratios; Advantages of ratio analysis; Limitations of accounting ratios.
- UNIT-II** Funds Flow Statement as per Indian Accounting Standard 3, cash flow statement.
- UNIT-III** Absorption and Marginal Costing: Marginal and differential costing as a tool for decision making - make or buy; Change of product mix; Pricing, Break-even analysis;
Exploring new markets; Shutdown decisions.
- UNIT-IV** Budgeting for profit Planning and control: Meaning of budget and budgetary control; Objectives; Merits and limitations; Types of budgets; Fixed and flexible budgeting;
Control ratios; Zero base budgeting; Responsibility accounting;
Performance Budgeting.
- UNIT-V** Standard Costing and Variance Analysis: Meaning of standard cost and standard costing; Advantages and application; Variance analysis - material; Labour and overhead (Two-way analysis); Variances.

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Suggested Reading:

1. Arora M.N.: Cost Accounting - Principles and Practice, Vikas, New Delhi.
2. Jain S.P. & Narang K.L.: Cost Accounting; Kalyani, New Delhi.
3. Anthony, Rogert & Reece, et al: Principles of Management Accounting; Richard Irwin Inc.
4. Horngren, Charles, Foster and Datar et al: Cost Accounting - A Managerial Emphasis; Prentice Hall, New Delhi.
5. Khan M.Y. and Jain P.K.: Management Accounting: Tata McGraw Hill, New Delhi.
6. Kaplan R.S. and Atkinson A.A.: Advanced Management Accounting; Prentice Hall India, New Delhi.
7. J.K. Agrawal & R.K. Agrawal: Jaipur (English & Hindi).
8. Dr. M.R. Agrawal: Minakshi Prakashan Meruth.
9. Dr. S.P. Gupta - Agra (Hindi & English).


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B.COM PART III
OPTIONAL GROUP A (Finance Area)
TITLE OF PAPER - FINANCIAL MANAGEMENT
PAPER – I

OBJECTIVE

The objective of this course is to help students understand the conceptual framework of financial management.

M.M. 75


- UNIT-I** Financial Management: Financial goals; Profit vs wealth maximization; Financial functions-investment, financing, and dividend decisions; Financial planning.
- UNIT-II** Capital Budgeting : Nature of investment decisions, Investment evaluation criteria, payback period, accounting rate of return, net present value, internal rate of return profitability index; NPV and IRR comparison.
- UNIT-III** Cost of Capital: Significance of cost of capital; Calculating cost of debt; Preference shares, equity capital, and retained earnings; Combined (weighted) cost of capital. Operating and financial Leverage : Their measure; Effects on profit, analyzing alternate financial plans, combined financial and operating leverage.
- UNIT-IV** Capital Structure: Theories and determinates. Dividend Policies: Issues in dividend policies; Walter's model; Gordon's model; M.M.Hypothesis, forms of dividends and stability in dividends, determinants.
- UNIT-V** Management of Working Capital: Nature of working capital, significance of working capital, operating cycle and factors determining of working capital requirements, Management of working capital - cash, receivables, and inventories.

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Suggested Reading:

1. Van Home J.C. : Financial Management and Policy; Prentice Hall of India, New Delhi.
2. Khan M.Y. and Jain P.K. : Financial Management, Text and Problems; Tata McGraw Hill, New Delhi.
3. Prasanna Chandra L Financial Management Theory and practice; Tata McGraw Hill, New Delhi.
4. Pandey I.M.: Financial Management Vikas Publishing Hous, New Delhi.
5. Brigham E.F. Gapenski L.C., and Ehrhardt M.C.: Financial Management - Theory and Practice; Harcourt College Publishers, Singapore.
6. Bhalla V.K.: Modern Working Capital Management, Anmol Pub. Delhi.


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B.COM PART III
OPTIONAL GROUP A (Finance Area)
TITLE OF PAPER - FINANCIAL MARKET OPERATIONS
PAPER - II

OBJECTIVE

This course aims at acquainting the students with the working of financial markets in India.

M.M. 75


- UNIT-I** Money Market: Indian money market's composition and structure; (a) Acceptance houses, (b) Discount houses and (c) Call money market; Recent trends in Indian money market.
- UNIT-II** Capital Market: Security market - (a) New issue market, (b) Secondary market;
Functions and role of stock exchange; listing procedure and legal requirements; Public issue - pricing and marketing; Stock exchanges - National Stock Exchange, Bombay stock exchange
- UNIT-III** Securities contract and Regulations Act: Main provisions. Investors Protection: Grievances concerning stock exchange dealings and their removal; Grievance cells in stock exchanges; SEBI; Company Law Board; Press;
Remedy through courts.
- UNIT-IV** Functionaries on Stock Exchanges: Brokers, sub brokers, market makers, jobbers, portfolio consultants, institutional investors, and NRIs.
- UNIT-V** Financial Services: Merchant banking - Functions and roles; SEBI guidelines; Credit rating - concept, functions, and types.

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Suggested Reading:

1. Chandler M.V. and Goldfeld S.M.: Economics of money and Banking, Harper and Row, New Delhi.
2. Gupta Suraj B. Monetary Economics; s. chand and Co. New Delhi.
3. Gupta Suraj B. Monetary Planning in India; Oxford, Delhi.
4. Bhole L.M.: Financial Markets and Institutions: Tata McGraw Hill, New Delhi.
5. Hooda R.P.: Indian Securities Market - Investors view point; Excell Books, New Delhi.
6. R.B.I.: Functions and Working.
7. R.B.I.: Report in Currency and Finance.
8. R.B.I.: Report of the Committee to Review the working of the monetary system Chakravarty committee.
9. R.B.I.: Report of the Committee on the Financial System, Narsimham Committee.


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B.COM PART III
OPTIONAL GROUP B (Marketing Area)
TITLE OF PAPER -PRINCIPLES OF MARKETING
PAPER – I

OBJECTIVE

The Objective of this course is to help students to understand the concept of marketing and its applications.

M.M. 75

- UNIT-I** Introduction: Nature and scope of marketing; Importance of marketing as a business function, and in the economy; Marketing concepts - traditional and modern; Selling vs. Marketing; Marketing mix; Marketing environment.
- UNIT-II** Consumer Behaviour and Market Segmentation: Nature, scope, and significance of consumer behaviour; Market segmentation - concept and importance; Bases for market segmentation.
- UNIT-III** Product: Concept of product, consumer, and industrial goods; Product planning and development; Packaging role and functions; Brand name and trade mark; after sales service; Product life cycle concept. Price: Importance of price in the marketing mix; Factors affecting price of a product/service; Discounts and rebates.
- UNIT-IV** Distributions Channels and Physical Distribution; Distribution channels - Concept and role; Types of distribution channels. Factors affecting choice of a distribution channel; Retailer and wholesaler; Physical distribution of goods; Transportation, Warehousing, Inventory control; Order processing.
- UNIT-V** Promotion: Methods of promotion; Optimum promotion mix; Advertising media - the relative merits and limitations; Characteristics of an effective advertisement; Personal selling; Selling as a career; Classification of successful sales person; Functions of sales man.
Recent development in marketing - social marketing, online marketing, direct marketing, Services marketing, Green marketing.


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Suggested Reading:

1. Philip Kotler: Marketing Management Englewood Cliffs; Prentice Hall, N.J.
2. William M. Pride and O.C. Ferrell: Marketing: Houghton - Mifflin Boston.
3. Stanton W.J. Etzel Michael J., and Walker Bruce J. Fundamentals of Marketing; McGrawHill, New York.
4. Lamb Charies W., Hair Joseph F. and McDaniel Carl : Principles of Marketing; South-Western-Publishing, Cincinnati, Ohio.
5. Cravens David W. Hills Gerald E., Woodruff Robert B : Marketing management : RichardD. Inwin, Home wood Illinois.
6. Kotler Philip and Armstrong Gary : Principles of Marketing; Prentice Hall of India, New Delhi.
7. Dr. R.C. Agrawal, Agra.
8. Dr. S.C. Saxena Agra.
9. Dr. S.K. Jain, Hindi GranthAcademi. M.P.
10. Dr. N.C. Jain


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B.COM PART III
OPTIONAL GROUP B (Marketing Area)
TITLE OF PAPER -INTERNATIONAL MARKETING
PAPER – II

OBJECTIVE

This course aims at acquainting student with the operations of marketing in international environment.

M.M. 75

- UNIT-I** International Marketing: Nature, definition, and scope of international marketing; Domestic marketing vs. International marketing; International environment external and internal.
- UNIT-II** Identifying and Selecting Foreign Market: Foreign market entry mode decisions. Product Planning for international Market: Product designing; Standardization vs. adaptation; Branding and packaging; Labeling and quality issues; after sales service. International pricing: Factors influencing International price; Pricing process-process and methods; International price quotation and payment terms.
- UNIT-III** Promotion of Product/Services Abroad: Methods of international promotion; Direct mail and sales literature; Advertising; Personal selling; Trade fairs and exhibitions.
- UNIT-IV** International Distribution: Distribution channels and logistics decisions; Selection and appointment of foreign sales agents.
- UNIT-V** Export Policy and Practices in India: Exim policy - an overview; Trends in India's foreign trade; Steps in starting an export business; Product selection; Market Selection; Export pricing; Export finance; Documentation; Export procedures; Export Assistance and incentives. Marketing Control Process


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Suggested Reading:

1. Bhattacharya R.L. and Varshney B.: International Marketing Management; Sultan Chand, New Delhi.
2. Bhattacharya B. : Export Marketing Strategies for Success; Global Press, New Delhi.
3. Keegan W.J.: Multinational Marketing Management; Prentice Hall, New Delhi.
4. Kriplani V.: International marketing; Prentice Hall New Delhi.
5. Taggart J.H. and Moder Mott. M.C.: The Essence of International Business; Prentice Hall New Delhi.
6. Kotler Phillip: Principles of Marketing; Prentice Hall New Delhi.
7. Fayer Weather John: International Marketing; Prentice Hall N.J.
8. Caterora P.M. and Keavenay S.M.: Marketing an international Perspective; Erwin Homewood, Illinois.
9. Paliwala, Stanely J. The Essence of International marketing; Prentice Hall, NewDelhi.

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B.COM PART III
OPTIONAL GROUP C (Commercial Area)
TITLE OF PAPER - INFORMATION TECHNOLOGY AND ITS
APPLICATIONS IN BUSINESS
PAPER – I

OBJECTIVE

The objective of the course is to familiarize the students with the innovation information technology and how it affects business. An understanding of the group rules of these technologies will enable the students to appreciate the nitty-gritty Commerce.

M.M. 75

UNIT-I Information Revolution and information Technology (IT) : Deployment of Business; Basic features of IT; Impact of IT on business environment and social fabric; Invention of writing; Written books; Printing Press and movable type Gutenberg's invention; Radio; telephone, wireless and satellite communication computing and dissemination of information and knowledge and convergence technologies (Internet with Wireless-WAP).

UNIT-II Fundamentals of Computer: Data, information and EDP: Data, information and concept of data and information; Levels of information from data; processing; Electronic data processing; Electronic machines;

- a. Number Systems and Codes: Different number systems - binary, octal decimal, hexagonal, and their conversion codes used in computers; BCD, EBCDIC, ASCII; Gray and conversions.
- b. Computer Arithmetic and Gates: Binary arithmetic, complements, addition subtraction; Conversion from one system to another; Logic Gates, truth table and applications minimisation, and K-maps.
- c. Computer Processing System: Definition of computer; Hardware/Software concepts; Generation of computers; Types of computers; Elements of computer; CPU and its functions, various computer systems.
- d. I/O devices: Basic concepts of I/O devices; various input devices Keyboard, mouse; MICR, OCR, microphones.
- e. Various output devices: VDU, printer, plotter, spooling, L.S.
- f. Storage Devices: Primary and secondary memory; Types of memory capacity and its enhancement; Memory devices and comparisons; Auxiliary storage, tapes, disks (magnetic and optical); various devices and their comparison.


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- g. System Software - Role of Software, Different System Software: O.S., utilization element of O.S. - Its types and variations; DOS and windows.
- h. Computer and Networks: Need of communication; Data transmission; Baud; Bandwidth; Communication Channel; Multiplexing; Basic network concepts; O.S.I. model; Types of topologies; LAN, WAN, Client server concept.

UNIT-III Computer-based Business Applications

- a. Word Processing : Meaning and role of word processing in creating of documents, editing, formatting, and printing documents, using tools such as spelling check, thesaurus, etc. in word processors (MS-Word).
- b. Electronic Spreadsheet : Structure of spreadsheet and its applications to accounting, finance, and marketing functions of business; Creating a dynamic/sensitive worksheet; Concept of absolute and relative cell reference; Using built-in functions; Goal seeking and solver tool; Using graphics and formatting of Worksheet; sharing data with other desktop applications; Strategies of creating error-free worksheet (MS-Excel, Lotus 123). Practical knowledge on Wings Accounting (Software).
- c. Programming under a DBMS environment: The concept of data base management system; Data field, records, and files, Sorting and indexing data; Searching records, designing queries, and reports; Linking of data files; Understanding programming environment in DBMS; Developing menu driven applications in query language (MS-Access).

UNIT-IV Electronic Data Interchange (EDI), Introduction to EDI; Basics of EDI; EDI standards; Financial EDI (FEDI); FEDI for international trade transaction; Applications of EDI; Advantages of EDI; Future of EDI.

UNIT-V The Internet and its Basic Concepts Internet-concept, history development in India; Technological foundation of internet; Distributed computing; Client-server computing; Internet protocol suite; Application of distributed computing; Client-server computing; Internet protocol suite in the internet environment; Domain Name System (DNS); Domain Name Service (DNS); Generic top-level domain (gTLD); Country code top-level domain (ccTLD); - India; Location of second-level domains; IP addresses; Internet protocol; Applications of Internet in business, education, governance, etc. Information System Audit Basic idea of information audit; Difference with the traditional concepts of audit; Conduct and applications of IS audit in internet environment.

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Suggested Reading:

1. Agrawala Kamlesh N. and Agarwala Deeksha: Business on the Net - Introduction to Ecommerce, Macmillan India, New Delhi.
2. Agrawala Kamlesh, N. and Agarwala Deeksha: Bulls, Bears and The mouse; and introduction to On-line Service Market Trading; Macmillan India, New Delhi.
2. Agarwala Kamlesh, N. and Agarwala Prateek Amar; WAP the Net; an Introduction on Wireless Application Protocol; Macmillan India, New Delhi.
3. Bajaj Kamlesh K. and Nag Debjani: E-Commerce; The cutting Edge of Business; Tata McGraw Hill, New Delhi.
4. Edwards, Ward and Bytheway : The Essence of Information Systems; Prentice Hall, New Delhi.
5. Garg & Srinivasan: Work Book on Systems Analysis & Design; Prentice Hall New Delhi.
7. Kanter: Managing with Information; Prentice Hall New Delhi.
8. Minoli Daniel, Minoli Emma: Web Commerce Technology Handbook; Tata McGraw Hill, New Delhi.
9. Minoli Daniel: Internet & Internet Engineering; Tata McGraw Hill, New Delhi.
10. Yeats: Systems Analysis & Design; Macmillan India, New Delhi.
11. Goyal: Management information System; Macmillan India, New Delhi.
12. Timothy J O'Leary: Microsoft Office 2000; Tata McGraw Hill, New Delhi.

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B.COM PART III
OPTIONAL GROUP C (E-Commerce Area)
TITLE OF PAPER -ESSENTIAL OF E-COMMERCE
PAPER – II

OBJECTIVE

The objective of this course is to familiarize the students with the basics of e-commerce and to comprehend its potential.

M.M. 75

UNIT-I Internet and Commerce: Business operations; E-Commerce practices; Concepts b2b, b2c, b2g, g2h; Benefits of e commerce to organization, consumers, and society; Limitation of e-commerce; Management issues relating to e-commerce.

Operations of E-Commerce: Credit card transaction; Secure Hypertext Transfer Protocol (SHTTP); Electronic payment systems; secure electronic transaction (SET); Set's encryption; Process; Cybercash; Smart cards; Indian payment models.

UNIT-II Applications in B2C: Consumer's shopping procedure on the internet; Impact on disintermediation and re-intermediation; Global market; Strategy of traditional department stores; Products in b2c model; Success factors of e-brokers; Broker based services on-line; Online travel tourism services; Benefits and impact of e-commerce on travel industry; Real estate market; Online stock trading and its benefits; Online banking and its benefits; Online financial services and their future; Educations benefits, implementation, and impact.

UNIT-III Applications in B2B; Applications of b2b, Key technologies for b2b; Architectural models of b2b; Characteristics of the supplier-oriented marketplace, buyer-oriented market place, and intermediary-oriented marketplace; Benefits of b2b on procurement re-engineering; Just in Time delivery in b2b; Internet-based EDI from traditional EDI; Integrating EC with back-end information systems; Marketing issues in b2b.

UNIT-IV Applications in Governance: EDI in governance; E-government; E-governance applications of the internet; Concept of government to business, business to government and citizen-to-government; E-governance models; Private sector interface in e-governance.

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UNIT-V Emerging Business Models: Retail model; Media model; Advisory model, Mode-to-order manufacturing model; Do-it yourself model; Information service model; Emerging hybrid models; Emerging models in India. Security and Legal aspects of E-commerce.

Suggested Reading:

1. Agarwala Kamlesh. N. and Agarwala Deeksha: Bridge to Online Storefront; Macmillan India, New Delhi.
2. Agarwala Kamlesh. N. and Agarwala Deeksha: Business on the Net Introduction to the E-commerce; Macmillan India New Delhi.
3. Agarwala Kamlesh N. and Agarwala Deeksha: Bulls, Bears and The Mouse: An Introduction to Online Stock Market Trading; Macmillan India New Delhi.
4. Tiwari Dr. Murli D.: Education and E-Governance; Macmillan India, New Delhi.
5. Minoli Daniel, Minoli Emma: Web Commerce Technology Handbook; Tata McGraw Hill, New Delhi.
6. Minoli Deniel, Internet & Internet Engineering: Tata McGraw Hill, 1999.
7. Bhatnagar Subhash and Schwabe Robert (Eds): Information and Communication Technology in Development; Sage Publications India, New Delhi.
7. Amor, Daniel: E-business Reevaluation, The : Living and Working in an Interconnected World; Prentice Hall, U.S.
8. Afuah, A., and Tuccu, C.: Internet business models and Strategies; McGraw Hill, New York.

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B.COM PART III
OPTIONAL GROUP D (Money Banking & Insurance Area)
TITLE OF PAPER FUNDAMENTAL OF INSURANCE
PAPER – I

OBJECTIVE

This course enables the students to know the fundamentals of insurance.

M.M. 75

- UNIT-I** Introduction to Insurance: Purpose and need of insurance; Insurance as a social security tool; Insurance and economic development.
- UNIT-II** Fundamentals of Agency Law: Definition of an agent; Agents regulations; Insurance intermediaries; Agents compensation.
- UNIT-III** Procedure for Becoming an Agent : Prerequisite for obtaining a license; Duration of license; Cancellation of license; Revocation or suspension/termination of agent appointment; Code of conduct; Unfair practices. Functions of the Agent: Proposal form and other forms for grant of cover; Financial and medical underwriting; Material information; Nomination and assignment; Procedure regarding settlement of policy claims.
- UNIT-IV** Company Profile : organizational set-up of the company; Promotion strategy; Market share; Important activities; Structure; Product; Actuarial profession; Product pricing actuarial aspects; Distribution channels.
- UNIT-V** Fundamentals/Principles of Life insurance/ Marine /Fire /Medical/General Insurance; Contracts of various kinds; Insurable Interest. Online insurance procedure

Suggested Reading:

1. Mishra M.N.: Insurance Principle and Practice; S. Chand and Co., New Delhi.
2. Insurance Regulatory Development Act. 1999.
3. Life Insurance Corporation Act. 1956.
4. Gupta OS: Life Insurance; Frank brothers, New Delhi.
5. Vinayakam N., Radhaswamy and Vasudevan SV: Insurance - Principles and Practice,
S. Chand and Co. New Delhi.
6. Mishra MN: Life Insurance Corporation of India, Vols I, II & III; Raj Books, Jaipur.
7. BalchandShriwastava, Agra.
8. Dr. M.L. Singhai, RAmesh Book Depot, Jaipur.


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B.COM PART III
OPTIONAL GROUP D (Money Banking & Insurance Area)
TITLE OF PAPER - MONEY & BANKING SYSTEM
PAPER -II

OBJECTIVE

This course enables the students to know the working of the Indian Money & banking system.

M.M. 75

- UNIT-I** Money: Function, Alternative Measures to money supply in India - their different components. Meaning and changing relative importance of each.
- UNIT-II** Indian Banking System : Structure and organization of banks; Reserve Bank of India; Apex banking Institutions; Commercial banks; Regional rural banks; Cooperative banks; Development banks.
- UNIT-III** Banking Regulation Act, 1947 : History; Social control; Banking Regulation Act as applicable to banking companies and public sector banks; Banking Regulation Act as applicable to Cooperative banks.
- UNIT-IV** Regional Rural and Cooperative Banks in India: Functions; Role of regional rural and cooperative banks in rural India; Progress and performance.
- UNIT-V** Reserve Bank of India: Objectives; Organization; Functions and working; Monetary policy; Credit control measures and their effectiveness.
State Bank of India, Project History, Objectives, Functions & Organization working & progress.
Internet banking system

Suggested Reading:

1. Basu A.K.: Fundamentals of Banking-Theory and Practice; a Mukherjee and Co., Calcutta.
2. Sayers R.S.: Modern Banking: Oxford University Press.
3. Panandikar S.G. And Mithani D.M.: Banking in India; orient Longman.
4. Reserve Bank of India: Functions and Working.
5. Dekock: Central Banking; Crosby lock wood Staples, London.
6. Tannan M.L.: Banking - Law and Practice in India: India Law House, New Delhi.
7. Knubchandani B.S.: Practice and Law of Banking; Macmillan, New Delhi.
8. Shekhar and Shekhar: Banking Theory and Practice; Vikas Publishing House, New Delhi.
9. Harishchandra Sharma.
10. M.L. Singhai.


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B.Com-III
PAPER - I
PROGRAMMING IN VISUAL BASIC
(Paper Code-1165)

UNIT-I Introduction to Visual Basic, Programs, Variables

Editions of Visual Basic, Event Driven Programming, Terminology, Working environment, project and executable files, Understanding modules, Using the code editor window, Other code navigation features, Code documentation and formatting, environment options, code formatting option automatic code completion features. Introduction to objects, Controlling objects, Properties, methods and events, Working with forms, interacting with the user: MsgBox function, InputBox function, Code statements, Managing forms, Creating a program in Visual Basic, Printing, Overview of variables, User-defined data types, constants working with procedures, Working with dates and times, Using the Format Function, Manipulating text string.

UNIT-II Controlling Program Execution, Working with Control

Comparison and logical operators, If...Then statements, Select Case Statements looping structures, Using Do...Loop structures, For...Next statement, Exiting a loop. Types of controls, Overview of standard controls, ComboBox and ListBox, OptionButton and Frame controls Menu, Status bars, Toolbars, Advanced standard controls, ActiveX controls, Insertable objects, Arrays, Dynamic Arrays.

UNIT-III Procedure, Function Error Trapping & Debugging

Procedure, Function, call by value, call by reference, Type definition, with object, Validation, Overview of run-time errors, error handling process, The Error object, Errors and calling chain, Errors in an error-handling routine, Inline error handling, Error handling styles, General error-trapping options Type of errors, Break mode Debug toolbar, Watch window, Immediate window, Local window, Tracing Program flow with the Call Stack.

UNIT-IV Sequential and Random Files :

Saving data to file, basic filling, data analysis and file, the extended text editor, File organization Random access file, The design and coding, File Dialog Box, Picture Box, Image box, Dialog Box, using clipboard, Copy, Cut, Paste of Text & Picture in Clipboard, Use of Grid Control Multiple document interface, Single document interface.

UNIT-V Data Access Using the ADO Data Control & Report Generation

Overview of ActiveX data Objects, Visual Basic data access features, Relational database concepts Using the ADO Data control to access data, Overview of DAO, RDO, Data Control, structured query language (SQL), Manipulating data Using Data Form Wizard. Overview of Report, Data Report, Add groups, Data Environment, Connection to database Introduction to Crystal Report Generator.

BOOK REFERENCE :

1. Visual Basic Programming – Reeta Sahu, B.P.B. Publication.
2. Mastering in Visual Basic - By BPB Publications.
3. Visual Basic Programming - Mark Brit.

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B.Com-III
PAPER - II
SYSTEM ANALYSIS, DESIGN & MIS
(Paper Code-1166)

UNIT-I Introduction -

Systems Concepts and the information systems environment : Definition of system, Characteristics of system, elements of system, types of system, The system Development life cycle : consideration of candidates system. The Role of system Analyst : Introduction, the multiphase role of the analyst, the analyst / user interface, the place of the analyst in the MIS Organization

UNIT-II System Analysis, Tools of Structured Analysis, Feasibility Study-

System Planning and initial investigation : Basis for planning in systems analysis, initial investigation, fact finding, fact analysis, determination of feasibility.

Information Gathering : Kind of information, Information gathering tools.

Structured Analysis, Flow chart, DFD, Data Dictionary, Decision Tree, Structured English, Decision Table. System Performance, Feasibility Study. Data Analysis.

UNIT-III System Design & System Implementation -

The process of Design Methodologies. Input Design, Output Design, Form Design, File Structure, File organization, data base design, System Testing, the test plan, quality assurance, data processing auditor. Conversion, Post implementation review, Software Maintenance.

UNIT-IV Introduction to MIS & Other Subsystem-

Evolution of MIS, Need of MIS, Definition & Benefits of MIS, Characteristic, Role component of Information system, data base as a future of MIS, Decision making, logic of Management Information system, Structure of MIS.

UNIT-V Information System Concept -

Difference between Transaction Processing. System (TPS) and Management Information System, How MIS works, MIS and Information Resource Management, Quality information Building Blocks for the information system, information system concept, Other system characteristic (Open & Closed System), difference between MIS & Strategic System, Adaptive system, Business function information system.

BOOK REFERENCE :

1. System Analysis and Design - Elias M. Awad.
2. System Analysis and Design - Alan Dennis & Barbara Haley Wixom.
3. Management Information systems - C.S.V. Murthy, Himalaya Publication House.

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B.Com-III

PAPER – III

PRACTICAL EXERCISES BASED ON PAPER I & II

Practicals to be done –

1. At least 20 practical - exercises covering the contents of paper - I (e.g. Designing calculator, sorting of elements, Generating Fibonacci series)
2. Design the Project on one of the following - Application Software / Website Design/Accounting software / Inventory control System / System Software & other (e.g. Library Management System, Medical management, Stock Management, Hotel Management, Website for your institute / Website of any Organization)
3. The Project Report cover the following topic - Objective, Hardware & Software Requirements, Analysis, Design, Coding, input forms, testing, Reports, Future enhancement of s/w.
4. Practical exam is based on the Project Demonstration & report.


Abhinav
19/01/19
P.L.
19/01/19


M
19/01/19


K. D. Dubey
19/01/19
H
19/01/19


P. S. Singh
19/01/19

PAPER - IV

LABORATORY COURSE

INORGANIC CHEMISTRY

A. Semi-micro qualitative analysis (using H_2S or other methods) of mixtures - not more than four ionic species (two anions and two cations, excluding interfering, insoluble salts) out of the following:

Cations : NH_4^+ , Pb^{2+} , Bi^{3+} , Cu^{2+} , Cd^{2+} , Fe^{3+} , Al^{3+} , Co^{2+} , Ni^{2+} , Mn^{2+} , Zn^{2+} , Ba^{2+} , Sr^{2+} , Ca^{2+} , Na^+
Anions : CO_3^{2-} , S^{2-} , SO_3^{2-} , $S_2O_3^{2-}$, NO_2^- , CH_3COO^- , Cl^- , Br^- , I^- , NO_3^- , SO_4^{2-}
(Spot tests may be carried out wherever feasible)

B. Acid-Base Titrations

- Standardization of sodium hydroxide by oxalic acid solution.
- Determination of strength of HCl solution using sodium hydroxide as intermediate.
- Estimation of carbonate and hydroxide present together in mixture.
- Estimation of carbonate and bicarbonate present together in a mixture.
- Estimation of free alkali present in different soaps/detergents

C. Redox Titrations

- Standardization of $KMnO_4$ by oxalic acid solution.
- Estimation of Fe(II) using standardized $KMnO_4$ solution.
- Estimation of oxalic acid and sodium oxalate in a given mixture.
- Estimation of Fe(II) with $K_2Cr_2O_7$ using internal (diphenylamine, anthranilic acid) and external indicator.

D. Iodo / Iodimetric Titrations

- Estimation of Cu(II) and $K_2Cr_2O_7$ using sodium thiosulphate solution iodimetrically.
- Estimation of (a) arsenite and (b) antimony iodimetrically.
- Estimation of available chlorine in bleaching powder iodometrically.
- Estimation of Copper and Iron in mixture by standard solution of $K_2Cr_2O_7$ using sodium thiosulphate solution as titrants.

ORGANIC CHEMISTRY

1. Demonstration of laboratory Glasswares and Equipments.
2. Calibration of the thermometer. $80^\circ-82^\circ$ (Naphthalene), $113.5^\circ-114^\circ$ (Acetanilide), $132.5^\circ-133^\circ$ (Urea), 100° (Distilled Water.)
3. Purification of organic compounds by crystallization using different solvents.
 - Phthalic acid from hot water (using fluted filter paper and stemless funnel).
 - Acetanilide from boiling water.
 - Naphthalene from ethanol.
 - Benzoic acid from water.

B.Sc.-I

Handwritten signatures and dates:
Date: 20.6.2015
Divyanshu
24.6.15
Vats
G. P. S. S. S.
V. P. S. S.

4. Determination of the melting points of organic compounds.
Naphthalene 80° – 82° , Benzoic acid 121.5° – 122° , Urea 132.5° – 133° , Succinic acid 18
 185° , Cinnamic acid 132.5° – 133° , Salicylic acid 157.5° – 158° , Acetanilide 113.5° – 114° ,
Dinitrobenzene 90° , p-Dichlorobenzene 52° , Aspirin 135° .

5. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds.

- Urea – Cinnamic acid mixture of various compositions (1:4, 1:1, 4:1).

6. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100°C by distillation and capillary method).

- Ethanol 78° , Cyclohexane 81.4° , Toluene 110.6° , Benzene 80° .

- i. Distillation (Demonstration)

- Simple distillation of ethanol-water mixture using water condenser.
- Distillation of nitrobenzene and aniline using air condenser.

- ii. Sublimation

- Camphor, Naphthalene, Phthalic acid and Succinic acid.

- iii. Decolorisation and crystallization using charcoal.

- Decolorisation of brown sugar with animal charcoal using gravity filtrations
crystallization and decolorisation of impure naphthalene (100 g of naphthalene
mixed with 0.3 g of Congo red using 1 g of decolorizing carbon) from ethanol.

7. Qualitative Analysis

Detection of elements (N, S and halogens) and functional groups (Phenolic, Carboxylic, Carbonyl, Esters, Carbohydrates, Amines, Amides, Nitro and Anilide) in simple organic compounds.

PHYSICAL CHEMISTRY

1. Surface tension measurements.

- Determine the surface tension by (i) drop number (ii) drop weight method.
- Surface tension composition curve for a binary liquid mixture.

2. Viscosity measurement using Ostwald's viscometer.

- Determination of viscosity of aqueous solutions of (i) sugar (ii) ethanol at room temperature.

B.Sc.-I

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24.6.15

acetic acid 18
mp 113.5°-114°
anic

- Study of the variation of viscosity of sucrose solution with the concentration of solute.
- Viscosity Composition curve for a binary liquid mixture.

3. Chemical Kinetics

- To determine the specific rate of hydrolysis of methyl/ethyl acetate catalysed by hydrogen ions at room temperature.
- To study the effect of acid strength on the hydrolysis of an ester.
- To compare the strengths of HCl & H₂SO₄ by studying the kinetics of hydrolysis of ethyl acetate.

4. Colloids

- To prepare colloidal solution of silver nanoparticles (reduction method) and other metal nanoparticles using capping agents.

Note: Experiments may be added/ deleted subject to availability of time and facilities

B.Sc.-I

Asst
20.6.2015

Prasanna
24.6.15

Nals

Prabhat

V. J. Kumar

PRACTICAL EXAMINATION

05 Hrs. M.M

INORGANIC

Three experiments are to be performed

1. Inorganic Mixture Analysis, four radicals two basic & two acid (excluding insoluble, Interfering & combination of acid radicals) OR Two Titrations (Acid-Bases, Redox and Iodo/Iodimetry) **12 marks**
2. Detection of functional group in the given organic compound and determine its MPt/BPt. **8 marks**

O R

Crystallization of any one compound as given in the prospectus along with the Determination of mixed MPt.

O R

Decolorisation of brown sugar along with sublimation of camphor/ Naphthlene.

3. Any one physical experiment that can be completed in two hours including calculations. **14 marks**
4. Viva **10 marks**
5. Sessionals **06 marks**

In case of Ex-Students two marks will be added to each of the experiments

REFERENCE TEXT:

1. Mendham, J., A. I. Vogel's Quantitative Chemical Analysis 6th Ed., Pearson, 2009.
2. Ahluwalia, V. K., Dhingra, S. and Gulati, A. College practical Chemistry, University Press.
3. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
4. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
6. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
7. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York (2003).

B.Sc.-I

20.6.2015

Divastan
24.6.13

Nals

g. Subair

V. J. Kumar

INORGANIC CHEMISTRY

Gravimetric analysis:

- Estimation of nickel (II) using Dimethylglyoxime (DMG).
- Estimation of copper as CuSCN
- Estimation of iron as Fe_2O_3 by precipitating iron as $\text{Fe}(\text{OH})_3$.
- Estimation of Al (III) by precipitating with oxine and weighing as $\text{Al}(\text{oxine})_3$ (aluminium oxinate).
- Estimation of Barium as BaSO_4

Inorganic Preparations:

- Tetraamminecopper (II) sulphate, $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O}$
- Cis and trans $\text{K}[\text{Cr}(\text{C}_2\text{O}_4)_2 \cdot (\text{H}_2\text{O})_2]$ Potassium dioxalatodiaquachromate(III)
- Tetraamminecarbonatocobalt (III) ion
- Potassium tris(oxalate)ferrate(III)/ Sodium tris(oxalate)ferrate(III)
- Cu(I) thiourea complex, Bis (2,4-pentanedionate) zinc hydrate; Double salts (Chrome alum/ Mohr's salt)

ORGANIC CHEMISTRY

1. Preparation of organic Compounds

- Acetylation of one of the following compounds: amines (aniline, o-, m-, p- toluidines and o-,m-, p-anisidine) and phenols (β -naphthol, vanillin, salicylic acid)
- Benzoylation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m-, panisidine) and one of the following phenols (β -naphthol, resorcinol, p cresol) by Schotten-Baumann reaction.
- Bromination of any one of the following: a. Acetanilide by conventional methods b. Acetanilide using green approach (Bromate-bromide method)
- Nitration of any one of the following: a. Acetanilide/nitrobenzene by conventional method b. Salicylic acid by green approach (using ceric ammonium nitrate).
- Reduction of p-nitrobenzaldehyde by sodium borohydride.
- Hydrolysis of amides and esters.
- Semicarbazone of any one of the following compounds: acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde.
- Benzylisothiuronium salt of one each of water soluble and water insoluble acids (benzoic acid, oxalic acid, phenyl acetic acid and phthalic acid).
- Aldol condensation using either conventional or green method.

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(Dr. Alka Tripathi)

Dr. C. Bose
28.06.2021
(Dr. C. Bose)

Rajmani Patel
20.06.2021
(Dr. Rajmani Patel)

Aravind
28.6.2021

Legu
28.06.2021
Jagjit Kumar

- Benzil-Benzilic acid rearrangement.
- Preparation of sodium polyacrylate.
- Preparation of urea formaldehyde.
- Preparation of methyl orange.

The above derivatives should be prepared using 0.5-1g of the organic compound. The samples must be collected and may be used for recrystallization, melting point and TLC.

2. Qualitative Analysis Analysis of an organic mixture containing two solid components using water, NaHCO_3 , NaOH for separation and preparation of suitable derivatives.
3. Extraction of caffeine from tea leaves.
4. Analysis of Carbohydrate: aldoses and ketoses, reducing and non-reducing sugars.
5. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy. (Spectra to be provided).
6. Estimation of glycine by Sorenson's formalin method.
7. Study of the titration curve of glycine.
8. Estimation of proteins by Lowry's method.
9. Study of the action of salivary amylase on starch at optimum conditions.
10. Effect of temperature on the action of salivary amylase.

PHYSICAL CHEMISTRY

Conductometry

- Determination of cell constant
- Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid.
- Perform the following conductometric titrations:
 - i. Strong acid vs. strong base
 - ii. Weak acid vs. strong base
 - iii. Mixture of strong acid and weak acid vs. strong base
 - iv. Strong acid vs. weak base
- To determine the strength of the given acid conductometrically using standard alkali solution.
- To determine the solubility and solubility product of a sparingly soluble electrolyte conductometrically
- To study the saponification of ethyl acetate conductometrically.

Potentiometry/pH metry

Perform the following potentio/pH metric titrations:

- i. Strong acid vs. strong base
- ii. Weak acid vs. strong base
- iii. Dibasic acid vs. strong base
- iv. Potassium dichromate vs. Mohr's salt
- v. Determination of pK_a of monobasic acid

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Rajni
20.06.2021
(Dr. Rajmani Patel)

Ais
28.6.2021

Lagn
28.06.2021
Tajul Kumar

Verify Lab
in a solution
Determine the
Study the kin
Determi

sible spectroscopy

- Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration
- Determine the concentrations of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ in a mixture.
- Study the kinetics of iodination of propanone in acidic medium.
- Determine the amount of iron present in a sample using 1,10-phenanthroline.
- Determine the dissociation constant of an indicator (phenolphthalein).
- Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide.
- Study of pH-dependence of the UV-Vis spectrum (200-500 nm) of potassium dichromate.
- Spectral characteristics study (UV) of given compounds (acetone, acetaldehyde, acetic acid, etc.) in water.
- Absorption spectra of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ (in 0.1 M H_2SO_4) and determine λ_{max} values.

Note: Experiments may be added/deleted subject to availability of time and facilities

REFERENCE BOOKS:

1. Vogel, A.I. Quantitative Organic Analysis, Part 3, Pearson (2012).31
2. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
3. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
4. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
5. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000)
6. Manual of Biochemistry Workshop, 2012, Department of Chemistry, University of Delhi.

Alkita
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(Dr. Alka Tripathi)

Boose
28.06.2021
(Dr. C. Bose)

Rajmani
28.06.2021
(Dr. Rajmani Patel)

As
28.6.2021

Legu
28.06.2021
Jyoti Kumari

8 Hrs.

PRACTICAL EXAMINATION

M₂

INORGANIC
Quali

Five experiments are to be performed.

1. Inorganic - Two experiments to be performed.

- Gravimetric estimation compulsory **08 marks.** (Manipulation 3 marks)
- Anyone experiment from synthesis and analysis **04 marks.**

2. Organic - Two experiments to be performed.

- Qualitative analysis of organic mixture containing two solid components.
Compulsory carrying **08 marks** (03 marks for each compound and two marks for Separation).
- One experiment from synthesis of organic compound (Single step)
04 marks.

3. Physical-One physical experiment

12 marks.

4. Sessional

04 marks.

5. Viva Voce

10 marks.

In case of Ex-Students one mark each will be added to Gravimetric analysis and Qualitative analysis of organic mixture and two marks in Physical experiment.

Alka
28.06.21
(Dr. Alka Tiwari)

Bose
28.06.2021
(Dr. C. Bose)

Rajmani
20.06.2021
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Arora
28.6.2021

Legu
28.06.2021
Jagjit Kumar

LABORATORY COURSE

INORGANIC CHEMISTRY

Qualitative semimicro analysis of mixtures containing 5 radicals. Emphasis should be given to the understanding of the chemistry of different reactions. The following radicals are suggested:

CO_3^{2-} , NO_2^- , S^{2-} , SO_3^{2-} , $\text{S}_2\text{O}_3^{2-}$, CH_3COO^- , F^- , Cl^- , Br^- , I^- , NO_3^- , BO_3^{3-} , $\text{C}_2\text{O}_4^{2-}$, PO_4^{3-} , NH_4^+ , K^+ , Pb^{2+} , Cu^{2+} , Cd^{2+} , Bi^{3+} , Sn^{2+} , Sb^{3+} , Fe^{3+} , Al^{3+} , Cr^{3+} , Zn^{2+} , Mn^{2+} , Co^{2+} , Ni^{2+} , Ba^{2+} , Sr^{2+} , Ca^{2+} , Mg^{2+} .

Mixtures should preferably contain one interfering anion, or insoluble component (BaSO_4 , SrSO_4 , PbSO_4 , CaF_2 or Al_2O_3) or combination of anions e.g. CO_3^{2-} and SO_3^{2-} , NO_2^- and NO_3^- , Cl^- , Br^- , and I^- .

Volumetric analysis

- Determination of acetic acid in commercial vinegar using NaOH.
 - Determination of alkali content-antacid tablet using HCl.
 - Estimation of calcium content in chalk as calcium oxalate by permanganometry.
 - Estimation of hardness of water by EDTA.
 - Estimation of ferrous & ferric by dichromate method.
 - Estimation of copper using thiosulphate.
- Principles involved in chromatographic separations. Paper chromatographic separation of following metal ions: i. Ni (II) and Co (II) ii. Fe (III) and Al (III)

ORGANIC CHEMISTRY

- Detection of elements (X, N, S).
- Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, nitro, amine, amide, and carbonyl compounds, carbohydrates)
- Preparation of Organic Compounds:
 - m-dinitrobenzene, (ii) Acetanilide, (iii) Bromo/Nitro-acetanilide, (iv) Oxidation of primary alcohols-Benzoic acid from benzylalcohol, (v) azo dye.

B.Sc.-II

Asmi
30.6.2015

Divastan
24.6.13

Nals

G. Perforata

V. K. Kumar

PHYSICAL CHEMISTRY

HKS
Three Experiments
I. Inorganic

Transition Temperature

- Determination of the transition temperature of the given substance by thermometric/dialometric method (e.g. $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}/\text{SrBr}_2 \cdot 2\text{H}_2\text{O}$).

Thermochemistry

- Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution or enthalpy of neutralization).
- Determination of heat capacity of the calorimeter and enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
- To determine the solubility of benzoic acid at different temperature and to determine ΔH of the dissolution process.
- To determine the enthalpy of neutralization of a weak acid/ weak base versus strong base/ strong acid and determine the enthalpy of ionization of the weak acid/ weak base.
- To determine the enthalpy of solution of solid calcium chloride and calculate the lattice energy of calcium chloride from its enthalpy data using Born Haber cycle.

Phase Equilibrium

- To study the effect of a solute (e.g. NaCl, Succinic acid) on the critical solution temperature of two partially miscible liquids (e.g. phenol-water system) and to determine the concentration of that solute in the given phenol-water system.
- To construct the phase diagram of two component system (e.g. diphenylamine-benzophenone) by cooling curve method.
- Distribution of acetic/ benzoic acid between water and cyclohexane.
- Study the equilibrium of at least one of the following reactions by the distribution method:
 - (i) $\text{I}_2(\text{aq}) + \text{I}^- \rightarrow \text{I}_3(\text{aq})^{2-}$
 - (ii) $\text{Cu}^{2+}(\text{aq}) + n\text{NH}_3 \rightarrow \text{Cu}(\text{NH}_3)_n$

Molecular Weight Determination

Determination of molecular weight by Rast Camphor and Landsburger method.

Note: Experiments may be added/ deleted subject to availability of time and facilities.

B.Sc.-II

Basu
20.6.2019

Divakar
24.6.13

Naidu

Prakash

V. J. Kumar

Hrs.5

PRACTICAL EXAMINATION

M.M:50

Three Experiments are to be performed.

1. Inorganic – Qualitative semimicro analysis of mixtures. **12 marks**

OR

One experiment from synthesis and analysis by preparing the standard solution.

2. (a) Identification of the given organic compound & determine its M.Pt./B.Pt. **6 marks**

(b) Determination of Rf value and identification of organic compounds by paper chromatography. **6 marks**

3. Any one physical experiment that can be completed in two hours including calculations. **12 marks**

4. Viva **10 marks**

5. Sessional **04 marks**

In case of Ex-Students one marks will be added to each of the experiment.

B.Sc.-II

Das
20.6.2015

Divakar
24.6.13

Vals

g. peralta

K. J. Kumar

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Department of Botany
List of practicals 2016-2017

B.Sc. Part I

Study of external (Morphological) and internal (Microscopic/anatomical) features of representative genera given in the theory.

1. Algae: Gleocapsa, Scytonema, Gloeotrichia, Volvox, Oedogonium, Vaucheria, Chara, Ectocarpus, Sargassum, Batrachospermum.
2. Gram's staining technique.
3. Fungi: Albugo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria, Cercospora.
4. Bryophyta: Riccia, Marchantia, Pellia, Anthoceros, Sphagnum, Funaria.
5. Pteridophyta : Lycopodium, Selaginella, Equisetum, Marsilea.

B.Sc. Part II

The following species are suitable for study. Plants can be selected according to their availability in the locality

1. Ranunculaceae: Ranunculus, Delphinium
2. Brassicaceae: Brassica, Alyssum, Iberis, Coronopus
3. Malvaceae: Hibiscus, Abutilon
4. Rutaceae: Murraya, Citrus
5. Fabaceae: Faboidae: Lathyrus, Cajanus, Meliloyus, Trigonella
Caesalpinoidae: Cassia, Caesalpinia
Mimosoidae: Prosopis, Mimosa, Acacia
6. Apiaceae: Coriandrum, Faeniculum, Anethum
7. Acantaceae: Adhathoda, Peristrophe
8. Apocyanaceae: Vinca, Thevetia, Nerium
9. Asclepiadaceae: Calotropis
10. Solanaceae: Solanum, Withania, Datura
11. Euphorbiaceae: Euphorbia, Phyllanthus
12. Lamiaceae: Ocimum, Salvia
13. Chenopodiaceae: Chenopodium, Beta
14. Liliaceae: Asphodelus, Asparagus
15. Poaceae: Avena, Triticum, Hordeum, Poa, Sorghum

Gymnosperms

Cycas

1. Habit, armour of leaf bases on the stem (if specimen is not available show photograph), very young leaf (circinate vernation), old foliage leaves, scale leaf, bulbils, male cone (specimen), microsporophyll, megasporophyll, mature seed.
2. Study through permanent slides- normal root (TS), stem (TS), ovule (LS)
3. Study through hand sections or dissections-coralloid root (TS), Rachis (TS), Leaflet (VS), microsporophyll (VS), pollen grain (WM)

Pinus

1. Habit, long and dwarf shoot showing cataphylls and scale leaves, TS wood showing growth rings, male cone, 1st year, 2nd year female cones, winged seed
2. Study through permanent slides- root (TS), female cone (TS), ovule (LS), embryo (WM) showing polycotyledonous condition

3. Study through hand sections or dissections-young stem (TS), old stem (wood) (TLS and RLS), Needle (TS), male cone (TS), pollen grain (WM)

Ephedra

1. Habit and structure of whole male and female cones
2. Permanent slides- female cone (LS)
3. Hand sections/dissections- node (LS), internode (TS), macerated stem to see vessel structure, epidermal peel mount of vegetative parts to study stomata, male cone (TS and LS) pollen grains

Embryology, anatomy and vegetative propagation

1. Study of commonly occurring dicotyledonous plant (E.G. *Solanum nigrum* or *Kalanchoe*) to understand the body plan and modular type of growth
2. Life forms exhibited by flowering plants (by a visit to a forest or garden), study of tree like habit in cycads, bamboos, banana, traveller's palm (*Ravenala madagascariensis*) or *Yucca* and comparison with true tree as exemplified by conifers and dicotyledons
3. LS shoot tip to study the cytohistological zonation and origin of leaf primordia
4. Monopodial and sympodial types of branching in stems (especially rhizomes).
5. Anatomy of primary and secondary growth in monocots and dicots using hand dissections (or prepared slides) structure of secondary phloem and xylem, growth rings in wood, Microscopic study of wood in T S, T L S, and RLS
6. Field study of diversity in leaf shape, size, thickness, surface properties, internal structure of leaf, structure and development of stomata (using epidermal peels of leaf)
7. Anatomy of the root, primary and secondary structure
8. Examination of a wide range of flowers available in the locality, and methods of their pollination
9. Structure of anther, microsporogenesis (Using Slides) and pollen grains (Using Whole mounts), pollen viability using in vitro pollen germination.
10. Structure of ovule and embryo sac development (using serial sections).
11. Test of self incompatibility (using *Petunia axillaris*, *Brassica campestris*, *Brassica oleracea* or suitable available material) using field pollination.
12. Nuclear and cellular endosperm, embryo development in monocots and dicots (using slides/dissections).
13. Simple experiments to show vegetative propagation (leaf cuttings in *Sansevieria*, *begonia*, stem cuttings in *rosa*, *salix*, money plant, *Bougainvillea*).
14. Germination of non dormant and dormant seeds.

B.Sc.III

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effect of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
4. To study the enzyme activity of catalase and peroxidase as influenced by pH and temperature
5. Comparison of the rate of respiration of various plant parts.
6. Separation of chloroplast pigment by solvent method.
7. Determining the osmotic potential of vacuolar sap by plasmolytic method.
8. Determining the water potential of any tuber

9. Separation of amino acids in a mixture by paper chromatography and their identification by comparison with standards.
10. Bioassay of auxin, cytokinin, GA, ABA and ethylene using appropriate plant material.
11. Demonstration of the technique of micropropagation by using different explants, e.g. axillary buds, shoot meristem.
12. Demonstration of the technique of anther culture.
13. Isolation of protoplasts from different tissues using commercially available enzymes.
14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.

Heenuakshin'
विभागाध्यक्ष
घनस्पति शास्त्र
इन्द्रा गांधी शा कला विज्ञान
एवं वाणिज्य महाविद्यालय
धराली नगर, भिलाई, जिला-दुर्ग (छ.ग.)


Principal
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Vishali Nagar Bhilai

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Department of Botany
List of practicals 2017-2018

B.Sc. Part I

Study of external (Morphological) and internal (Microscopic/anatomical) features of representative genera given in the theory.

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2. Gram's staining technique.
3. Fungi: Albugo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria, Cercospora.
4. Bryophyta: Riccia, Marchantia, Peltia, Anthoceros, Sphagnum, Funaria.
5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.

B.Sc. Part II

Angiosperms

The following species are suitable for study. Plants can be selected according to their availability in the locality

1. Ranunculaceae: Ranunculus, Delphinium
2. Brassicaceae: Brassica, Alyssum, Iberis, Coronopus
3. Malvaceae: Hibiscus, Abutilon
4. Rutaceae: Murraya, Citrus
5. Fabaceae: Faboidae: Lathyrus, Cajanus, Meliloyus, Trigonella
Caesalpinoidae: Cassia, Caesalpinia
Mimosoidae: Prosopis, Mimosa, Acacia
6. Apiaceae: Coriandrum, Faeniculum, Anethum
7. Acantahceae: Adhathoda, Peristrophe
8. Apocyanaceae: Vinca, Thevetia, Nerium
9. Asclepiadaceae: Calotropis
10. Solanaceae: Solanum, Withania, Datura
11. Euphorbiaceae: Euphorbia, Phyllanthus
12. Lamiaceae: Ocimum, Salvia
13. Chenopodiaceae: Chenopodium, Beta
14. Liliaceae: Asphodelus, Asparagus
15. Poaceae: Avena, Triticum, Hordeum, Poa, Sorghum

Gymnosperms

Cycas

1. Habit, armour of leaf bases on the stem (if specimen is not available show photograph), very young leaf (circinate vernation), old foliage leaves, scale leaf, bulbils, male cone (specimen), microsporophyll, megasporophyll, mature seed.
2. Study through permanent slides- normal root (TS), stem (TS), ovule (LS)
3. Study through hand sections or dissections- coralloid root (TS), Rachis (TS), Leaflet (VS), microsporophyll (VS), pollen grain (WM)

Pinus

1. Habit, long and dwarf shoot showing cataphylls and scale leaves, TS wood showing growth rings, male cone, 1st year, 2nd year female cones, winged seed
2. Study through permanent slides- root (TS), female cone (TS), ovule (LS), embryo (WM) showing polycotyledonous condition

3. Study through hand sections or dissections-young stem (TS), old stem (wood) (TL S and RLS), Needle (TS), male cone (TS), pollen grain (WM)

Ephedra

1. Habit and structure of whole male and female cones
2. Permanent slides- female cone (LS)
3. Hand sections/dissections- node (LS), internode (TS), macerated stem to see vessel structure, epidermal peel mount of vegetative parts to study stomata, male cone (TS and LS) pollen grains

Embryology, anatomy and vegetative propagation

1. Study of commonly occurring dicotyledonous plant (E.G. Solanum nigrum or Kalanchoe) to understand the body plan and modular type of growth
2. Life forms exhibited by flowering plants (by a visit to a forest or garden), study of tree like habit in cycads, bamboos, banana, traveller's palm (Ravenala madagascariensis) or Yucca and comparison with true tree as exemplified by conifers and dicotyledons
3. LS shoot tip to study the cytohistological zonation and origin of leaf primordia
4. Monopodial and sympodial types of branching in stems (especially rhizomes).
5. Anatomy of primary and secondary growth in monocots and dicots using hand dissections (or prepared slides) structure of secondary phloem and xylem, growth rings in wood, Microscopic study of wood in T S, T L S, and RLS
6. Field study of diversity in leaf shape, size, thickness, surface properties, internal structure of leaf, structure and development of stomata (using epidermal peels of leaf)
7. Anatomy of the root, primary and secondary structure
8. Examination of a wide range of flowers available in the locality, and methods of their pollination
9. Structure of anther, microsporogenesis (Using Slides) and pollen grains (Using Whole mounts), pollen viability using in vitro pollen germination.
10. Structure of ovule and embryo sac development (using serial sections).
11. Test of self incompatibility (using Petunia axillaris, Brassica campestris, Brassica oleracea or suitable available material) using field pollination.
12. Nuclear and cellular endosperm, embryo development in monocots and dicots (using slides/dissections).
13. Simple experiments to show vegetative propagation (leaf cuttings in Sansevieria, begonia, stem cuttings in rosa, salix, money plant, Bougainvillea).
14. Germination of non dormant and dormant seeds.

B.Sc.III

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effect of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
4. To study the enzyme activity of catalase and peroxidase as influenced by pH and temperature
5. Comparison of the rate of respiration of various plant parts.
6. Separation of chloroplast pigment by solvent method.
7. Determining the osmotic potential of vacuolar sap by plasmolytic method.
8. Determining the water potential of any tuber
9. Separation of amino acids in a mixture by paper chromatography and their identification by comparison with standards.

10. Bioassay of auxin, cytokinin, GA, ABA and ethylene using appropriate plant material.
11. Demonstration of the technique of micropropagation by using different explants, e.g. axillary buds, shoot meristem.
12. Demonstration of the technique of anther culture.
13. Isolation of protoplasts from different tissues using commercially available enzymes.
14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.

Yeevalshn

विभागाध्यक्ष
वनस्पति शास्त्र

इन्दिरा गांधी शा कला विज्ञान
एवं वाणिज्य महाविद्यालय
वेशाली नगर, मिसाई, जिला-दुर्ग (उ.प्र.)



Principal

Govt. Indra Gandhi P.G. College
Vishali Nagar, Misai.

Indira Gandhi Government Arts and Commerce College, Vaishali Nagar, Bhilai
Department of Botany
List of practicals 2018-2019

B.Sc. Part I

Study of external (Morphological) and internal (Microscopic/anatomical) features of representative genera given in the theory.

1. Algae: Gleocapsa, Scytonema, Gloeotrichia, Volvox, Oedogonium, Vaucheria, Chara, Ectocarpus, Sargassum, Batrachospermum.
2. Gram's staining technique.
3. Fungi: Albugo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria, Cercospora.
4. Bryophyta: Riccia, Marchantia, Pellia, Anthoceros, Sphagnum, Funaria.
5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.

B.Sc. Part II

Angiosperms

The following species are suitable for study. Plants can be selected according to their availability in the locality

1. Ranunculaceae: Ranunculus, Delphinium
2. Brassicaceae: Brassica, Alyssum, Iberis, Coronopus
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6. Apiaceae: Coriandrum, Faeniculum, Anethum
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15. Poaceae: Avena, Triticum, Hordeum, Poa, Sorghum

Gymnosperms

Cycas

1. Habit, armour of leaf bases on the stem (if specimen is not available show photograph), very young leaf (circinate vernation), old foliage leaves, scale leaf, bulbils, male cone (specimen), microsporophyll, megasporophyll, mature seed.
2. Study through permanent slides- normal root (TS), stem (TS), ovule (LS)
3. Study through hand sections or dissections-coralloid root (TS), Rachis (TS), Leaflet (VS), microsporophyll (VS), pollen grain (WM)

Pinus

1. Habit, long and dwarf shoot showing cataphylls and scale leaves, TS wood showing growth rings, male cone, 1st year, 2nd year female cones, winged seed
2. Study through permanent slides- root (TS), female cone (TS), ovule (LS), embryo (WM) showing polycotyledonous condition

3. Study through hand sections or dissections-young stem (TS), old stem (wood) (TLS and RLS), Needle (TS), male cone (TS), pollen grain (WM)

Ephedra

1. Habit and structure of whole male and female cones
2. Permanent slides- female cone (LS)
3. Hand sections/dissections- node (LS), internode (TS), macerated stem to see vessel structure. epidermal peel mount of vegetative parts to study stomata, male cone (TS and LS) pollen grains

Embryology, anatomy and vegetative propagation

1. Study of commonly occurring dicotyledonous plant (E.G. *Solanum nigrum* or *Kalanchoe*) to understand the body plan and modular type of growth
2. Life forms exhibited by flowering plants (by a visit to a forest or garden), study of tree like habit in cycads, bamboos, banana, traveller's palm (*Ravenala madagascarensis*) or *Yucca* and comparison with true tree as exemplified by conifers and dicotyledons
3. LS shoot tip to study the cytohistological zonation and origin of leaf primordia
4. Monopodial and sympodial types of branching in stems (especially rhizomes).
5. Anatomy of primary and secondary growth in monocots and dicots using hand dissections (or prepared slides) structure of secondary phloem and xylem, growth rings in wood. Microscopic study of wood in T S, T L S, and RLS
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7. Anatomy of the root, primary and secondary structure
8. Examination of a wide range of flowers available in the locality, and methods of their pollination
9. Structure of anther, microsporogenesis (Using Slides) and pollen grains (Using Whole mounts), pollen viability using in vitro pollen germination.
10. Structure of ovule and embryo sac development (using serial sections).
11. Test of self incompatibility (using *Petunia axillaris*, *Brassica campestris*, *Brassica oleracea* or suitable available material) using field pollination.
12. Nuclear and cellular endosperm, embryo development in monocots and dicots (using slides dissections).
13. Simple experiments to show vegetative propagation (leaf cuttings in *Sansevieria*, *begonia*, stem cuttings in *rose*, *salix*, *money plant*, *Bougainvillea*).
14. Germination of non dormant and dormant seeds.

B.Sc.III

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effect of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
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6. Separation of chloroplast pigment by solvent method.
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8. Determining the water potential of any tuber
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10. Bioassay of auxin, cytokinin, GA, ABA and ethylene using appropriate plant material.
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14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.

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5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.
6. Gymnosperm: Cycas, Pinus, Ephedra.

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The following species are suitable for study. Plants can be selected according to their availability in the locality

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B.Sc.III

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Ueenabeshu

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3. Fungi: Albugo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria, Cercospora.
4. Bryophyta: Riccia, Marchantia, Pellia, Anthoceros, Sphagnum, Funaria.
5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.
6. Gymnosperm: Cycas, Pinus, Ephedra.

B.Sc.II

1. Taxonomy: Detailed description and identification of locally available plants of the families prescribed in the syllabus.
2. Economic Botany: Identification and comments on the plants and plant products belonging to different economic use categories.
3. Preparation of Herbarium of local wild plants.
4. Quantitative vegetation analysis of a grassland ecosystem.
5. Anatomical characteristics of Hydrophytes and Xerophytes.
6. Demonstration of root pressure.
7. Demonstration of Transpiration.
8. Demonstration of evolution of O₂ in photosynthesis, factors affecting photosynthesis.
9. Comparison of RQ of different respiratory substrates.
10. Demonstration of fermentation.
11. Determination of BOD of a water body.
12. Demonstration of mitosis.

B.Sc.III

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effect of temperature on permeability of plasma membrane.
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Meenabehn

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वनस्पति शास्त्र
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Vishali Nagar Bhilai

प्राच्यक्रम

प्रायोगिक भौतिकी (छ. ग.) बी.एस-सी. तृतीय वर्ष

समय : 4 घण्टे

अंक : 50

Minimum 16 (Sixteen) out of the following or similar experiments of equal standard.

1. Determination of Planck's constant.
2. Determination of e/m by using Thomson's tube.
3. Determination of e by Millikan's method.
4. Study of spectra of hydrogen and deuterium (Rydberg constant and ratio of masses of electron proton)
5. Absorption spectrum of iodine vapour.
6. Study of alkali or alkaline earth spectra using a concave gra's.
7. Study of Zeeman effect for determination of Lande g-factor.
8. Analysis of a given band spectrum.
9. Study of Raman spectrum using laser as an excitation source.
10. Study of absorption of alpha and beta rays.
11. Study of statistics in radioactive measurement.
12. Coniometric study of crystal faces.
13. Determination of dielectric constant.
14. Hysteresis curve of transformer core.
15. Hall- probe method for measurement of magnetic field.
16. Specific resistance and energy gap of a semiconductor.
17. Characteristics of transistor.
18. Characteristics of a tunnel diode.
19. Study of voltage regulation system.
20. Study of a regulated power supply.
21. Study of lissajous figures using a CRO.
22. Study of VTVM.
23. Study of RC and TC coupled amplifiers.
24. Study of AF and RF oscillators.
25. Find roots of $f(x) = 0$ by using Newton-Raphson method.
26. Find roots of $f(x) = 0$ by using secant method.
27. Integration by Simpson rule.
28. To find the value of V at.
29. String manipulations.
30. Towers of Hanoi (Nonrecursive)
31. Finding first four perfect numbers.
32. Quadratic interpolation using Newton's forward- difference formula of degree

AND REFERENCE BOOKS:

1. E M Purcell, Ed Berkely physics course, vol. Mechanics (Mc. Gr. Hill) R P Feynman.
2. R B Lighton and M Sands, the Feynman lectures in physics, vol I (B) publications, Bombay, Delhi, Calcutta, Madras.
3. D P Khandelwal, Oscillations and waves (Himalaya Publishing House Bombay).
4. R. K. Ghosh, The Mathematics of waves and vibrations (Macmillan 1975).
5. J.C. Upadhyaya- Mechanics (Hindi and English Edition.)
6. D.S. Mathur- Mechanics and properties of matter.
7. Brijlal and Subramaniam- Oscillations and waves. Resnick and Halliday- Volume I
8. Physics Part -1: Resnick and Halliday.

M. K. S.

year

P. K. S.

A. S. S.

Experiments out of the following or similar experiments of equal standard

GROUP-A

1. Study of laws of parallel and perpendicular axes for moment of inertia.
2. Moment of inertia of Fly wheel.
3. Moment of inertia of irregular bodies by inertia table.
4. Study of conservation of momentum in two dimensional oscillations.
5. Study of a compound pendulum.
6. Study of damping of a bar pendulum under various mechanics.
7. Study of oscillations under a bifilar suspension.
8. Study of modulus of rigidity by Maxwell's needle.
9. Determination of Y , k , η by Searl's apparatus.
10. To study the oscillation of a rubber band and hence to draw a potential energy curve from it.
11. Study of oscillation of a mass under different combinations of springs.
12. Study of torsion of wire (static and dynamic method).
13. Poisson's ratio of rubber tube.
14. Study of bending of a cantilever or a beam.
15. Study of flow of liquids through capillaries.
16. Determination of surface tension of a liquid.
17. Study of viscosity of a fluid by different methods.

GROUP-B

1. Use of a vibration magnetometer to study a field.
2. Study of magnetic field B due to a current.
3. Measurement of low resistance by Carey-Foster bridge.
4. Measurement of inductance using impedance at different frequencies.
5. Study of decay of currents in LR and RC circuits.
6. Response curve for LCR circuit and response frequency and quality factor.
7. Study of waveforms using cathode-ray oscilloscope.
8. Characteristics of a choke and Measurement of inductance.
9. Study of Lorentz force.
10. Study of discrete and continuous LC transmission line.
11. Elementary FORTRAN programs, Flowcharts and their interpretation.
12. To find the product of two matrices.
13. Numerical solution of equation of motion.
14. To find the roots of quadratic equation.

Handwritten signatures and initials:
A large signature at the top left.
A signature at the top right.
Initials "AS" at the bottom left.
A signature "An" at the bottom right.

TEXT AND REFERENCE BOOKS:

1. B saraf et al Mechanical Systems(Vikas publishing House,New Delhi).
2. D.P. khandelwal, A Laboratory Manual of Physics for Undergraduate classes (Vani Publication House,New Delhi).
3. C G Lambe Elements of statistics (Longmans Green and Co London New York, Tppnto).
4. C Dixon, Numerical analysis.
5. S Lipsdutz and A Poe, schaum's outline of theory and problems of programming with Fortran (MC Graw-Hill Book Company, Singapore 1986).

M. P. S.

P. M. S.

A. G.

Bye

Sun

बी.ए./बी.एस.सी.-प्रथम वर्ष
प्रश्न पत्र-तृतीय
प्रायोगिक भूगोल

अधिकतम अंक : 50

भाग- अ मानचित्र तकनीक एवं सांख्यिकी विधियां (25)

इकाई -1 मपनी- कथनात्मक मापन, प्रतिनिधि भिन्न सामान्य रेखिक मापनी विकर्ण तुलनात्मक एवं समय मापनी.

इकाई -2 उच्चायच प्रदर्शन की विधियां - हैशयूर समोच्च रेखा, तथा विविध स्थलाकृतियों की प्रदर्शन.

इकाई -3 रेखिक आरेख, दंड आरेख, (सामान्य एवं मिश्रित) चक्र आरेख - समानुपातिक वृत्त आरेख विभाजित वृत्त आरेख

इकाई -4 सांख्यिकी विधियां : औसत, माध्यिका, बहुलक

भाग- ब सर्वेक्षण (15)

इकाई -5 चैन और फीता सर्वेक्षण-त्रिभुजीकरण, खुला एवं बंद मार्ग मापन,

प्रायोगिक पुस्तिका और मौखिक परिक्षण परीक्षा (10)

Books Recommended:

1. Davis, R.E. and Foote, F.S. (1953): Surveying, 4th edition, McGraw Hill Publication, New York
2. Jones, P.A.(1968): Fieldwork in Geography, Longmans, Green and Company Ltd., First Publication, London
3. Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London
4. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai
5. Pugh, J.C. (1975): Surveying for Field Scientists, Methuen and Company Ltd., London, First Publication.
6. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition.
7. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
8. Sharma, J. P. (2001): *Prayogik Bhugol.* Rastogi Publication, Meerut 3rd edition.
9. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi,.
10. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
11. Venkatramaiah, C. (1997): A Text Book of Surveying, Universities Press, Hyderabad.

B.A./B.Sc. Part II
PAPER - III
PRACTICAL GEOGRAPHY
Max. Marks: 50

SECTION A

MAP INTERPRETATION, PROJECTIONS AND STATISTICAL METHODS (M.M. 20)

- Unit I** Distribution Maps: Dot Map, Choropleth Map and Isopleth Map.
- Unit II** Map Projections: Definition and classification; Conical, Zonal, and Cylindrical Projections.
- Unit III** Interpretation of Weather Maps: Use of Meteorological Instruments.
- Unit IV** Statistical Methods: Quartile, Mean Deviation, Standard Deviation and Quartile Deviation; Relative Variability and Co-efficient of Variation.

SECTION B

SURVEYING (M.M. 15)

- Unit V** Surveying: Whole Circle Bearing and Reduced Bearing, Methods of Prismatic Compass Survey.

PRACTICAL RECORD AND VIVA VOCE (M.M. 15)

Books Recommended:

1. Atli, Z. (1975): *Statistical Geography: Methods and Applications*, Rawat Pub. New Delhi.
2. Davis, H.L. and Foran, F.B. (1952): *Surveying*, 4 edition, McGraw Hill Publications, New York.
3. Karver, T.P. and Halkorn, S.V. (1967): *Surveying and Levelling*, Vol I and II V.C. Publications, Pune.
4. Nandani, V. (1976): *Advanced Surveying*, B.I. Publications - Mumbai.
5. Pal, S.B. (1959): *Statistics for Geographers*, Concept Publishing Company, New Delhi.
6. Ramia, P.S. (1964): *Surveying*, Vol I, Laxmi Publications Private Ltd, New Delhi.
7. Raisz, L. (1962): *General Cartography*, John Wiley and Sons, New York, 5 edition.
8. Sarkar, A.K. (1957): *Practical Geography: A Systematic Approach*, Orient Longman, Kolkata.
9. Sharma, I.P. (2001): *Practical Geography*, Eastern Publications, Meerut, 2 edition.
10. Sli, I. (1979): *Statistical techniques in Geography*, George Allen and Unwin, London.
11. Singh, R.L. and Singh, P.N. (1952): *Elements of Practical Geography*, Hindi and English editions, Kalyani Publishers, New Delhi.
12. Singh, L.P. (1999): *Fundamentals of Practical Geography*, Sharda Prasad Dwivedi, Allahabad.
13. Venkateswari, C. (1957): *A Text Book of Surveying*, Universities Press, Hyderabad.

Zoology
B.Sc. Part I (2019-20)
Practical

The practical work will, in general be based on the syllabus prescribed in theory and the candidates will be required to show knowledge of the following:-

- Dissection of Earthworm, Cockroach, Palaemon and Pila
- Minor dissection—appendages of Prawn & hastate plate, mouth parts of insects, radulla of Pila.

(Alternative methods: By Clay/Thermacol/drawing/Model etc.)

- Adaptive characters of Aquatic, terrestrial, aerial and desert animals.
- Museum specimen invertebrate
- Slides- Invertebrates, frog embryology, Chick embryology and cytology,

Scheme of Practical Exam

Time: 3hrs

1. Major Dissection	10 Marks
2. Minor Dissection	05 Marks
3. Comments on Excercise based on Adaptation	04 Marks
4. Cytological Preparation	05 Marks
5. Spots-8 (Slides-4, Specimens-4)	16 Marks
6. Sessional	10 Marks

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Zoology
B.Sc. Part II (2019-20)
Practical

The practical work in general shall be based on the syllabus prescribed and the students will be required to show the knowledge of the following:

- Study of the representative examples of the different chordates (Classified characters).
- Dissection of various systems of scoliodon-Afferent and Efferent branchial cranial nerves, internal ear.

Alternative methods: By Clay/Thermacol/ Drawing/ Model etc.)

- Simple microscopic technique through unstained or stained permanent mount.
- Study of prepared slides histological, as per theory papers.
- Study of limb girdles and vertebrae of Frog, Varanus, Fowl and Rabbit.
- Identification of species and individual of honey bee.
- Life cycle of honey bee and silkworm.
- Exercise based on Evolution and Animal behavior.

Scheme of Practical Exam

Time: 3:30hrs

• Major dissection (Cranial nerves/efferent branchial vessel)	10
• Exercise based on evolution	05
• Exercise based on applied zoology	05
• Exercise based on animal behavior	04
• Spotting-8 (slides-4,bones-2,specimen-2)	16
• Viva	05
• Sessional marks.	05

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PRACTICAL WORK

The Practical work in general shall be based on syllabus prescribed in theory.

The candidates will be required to show knowledge of the following :

1. Estimation of population density, Percentage frequency, Relative density.
2. Analysis of Producers and consumers in grassland.
3. Detection of gram-negative and gram-positive bacteria.
4. Blood group detection (A,B, AB & O).
6. R.B.C., W.B.C. count.
6. Blood coagulation time.
7. Preparation of Hematin crystals from blood of rat.
8. Observation of Drosophila, wild and mutant.
9. Chromatography-Paper or gel.
10. Colorimetric estimation of hemoglobin.
11. Mitosis in onion root tip.
12. Biochemical detection of Carbohydrate, Protein and Lipid.
13. Study of Permanent slides of Parasites, based on theory paper.
14. Working Principles of pH meter, Colorimeter, centrifuge and microscopes.

SCHEDULE FOR PRACTICALEXAMINATION

Duration : 4 Hrs.		Max Marks : 50
1.	Haematological Experiment : (R.B.Cs./W.B.Cs. Counting/Blood group detection)	08 marks
2.	Ecological Experiment : (Estimation of Population Density/Frequency/relative Density)	06 marks
3.	Staining of Gram +ve and Gram -ve Bacteria/cytological experiment : Mitosis in onion root tip	05 marks
4.	Biochemical Experiment : (biochemical detection of carbohydrate/protein lipid)	06 marks
5.	Chromatography	05 marks
6.	Spotting : Study of permanent slides of Parasites : 3 Comments on working Principles of pH meter / Calorimeter / centrifuge and Microscope :	10 marks
7.	Viva Voce	05 marks
8.	Sessional :	05 marks

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INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	Agriculture and Food Microbiology	3 hrs.	50
Second	Fermentation Technology & Government Regulations	3 hrs.	50
	PRACTICAL Examination (including sessionals)	4 hrs.	(20+5) 25
	Viva-Voce Exam. based on "Summer Job-Training Report"		25

PAPER-I

(Paper Code-0930)

AGRICULTURE AND FOOD MICROBIOLOGY M.M. : 50

- UNIT-I** Soil fertility and management of agricultural soils. Influence of available nitrogen on soil-fertility. Importance of crop-rotation. Soil management. Management practices : Pesticides and their impact and effect on soil fertility.
- UNIT-II** Microbial diseases of crop plants with special reference to Wheat, Rice, Maize, Groundnut, Mustard, Grapes, Potato and Papaya.
- UNIT-III** Control of plant diseases. Chemical control of plant diseases. Biological Control- its mechanism and importance. Biopesticides. Concept of integrated pest management (IPM). Bacterial insecticides.
- UNIT-IV** Food spoilage mechanism. Spoilage of stored products, fruits and vegetables. Microbial spoilage of milk and meat. Food borne diseases.
- UNIT-V** Food preservation methods - Asepsis, Pasteurisation canning, dessication, low temperature, Anaerobiosis, filtration.
Chemical preservation of food - salt and sugar, organic acids. Use of SO₂, ethylene and propylene oxides, wood smoke.

PRACTICALS

1. Study of microbial diseases of crop plants.
2. Study of effect of fungicides and insecticides on microorganisms.
3. Study of antagonistic activities amongst microorganisms.
4. Study of fungal contaminants from stored agricultural products.
5. Study of food spoilage microorganisms from sweets and bakery products.
6. Study of effect of the preservatives on the growth of microorganisms.
7. Study of UV radiations on microorganisms.
8. Study of the effect of agrochemicals on soil inhabiting microorganisms.

RECOMMENDED BOOKS :

1. Modern Plant Pathology by Bilgramy and Dubey.
2. Food Microbiology by Frazier.
3. Microbiology by S.S. Purohit.
4. Microbiology by P.D. Sharma.
5. Agricultural Microbiology by Rangaswami.
6. Plant Pathology by R.S. Mehrotra.

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PAPER - II
MOLECULAR BIOLOGY, BIOCHEMISTRY AND MICROBIAL GENETICS
(paper code - 0827)

M.M. 50

UNIT-1 Nucleic Acids - Structure of DNA and RNA(s), Replication of DNA, Synthesis of RNAs and their types, Genetic code, Concept of genes.

UNIT-2 Molecular Biology - Translation and Protein Synthesis, Operon Concept, CAMP CAP (Catabolic activator protein), Gene expression in Prokaryotes, Lac-Operon. Gene regulation in Eukaryotes (Britton-Davison Model of Gene Expression).

UNIT-3 Genetic recombination in Bacteria - Transformation, Transduction and conjugation, Genetic Mapping, Extrachromosomal genetic material, Plasmids, Cosmids, Transposons, Overlapping genes, Silent genes and their evolutionary significance. Mutation -Molecular mechanism of mutation, Chemical and Physical Mutagens, Repair of Mutation Damage.

UNIT-4 Biochemistry - Classification of carbohydrates, Chemical structure and property of starch, Cellulose, Glycogen, Synthesis of Purines & Pyrimidine, Lipids - Saturated and unsaturated fatty acids, Biosynthesis of fatty acids, Distribution and functions of lipids in microorganisms, Degradation of lipids by α - β and Co oxidation, Lipid peroxidation.

UNIT-5 Enzymes - Classification, Co-enzymes, Cofactors, Mechanism of enzyme action, Competitive and non-competitive inhibition, Allosteric regulations of enzymes, isoenzymes, factors contributing to catalytic efficiency of enzymes.

Amino acids - Classification of essential amino acids based on polarity, Acid-base properties and solubilities. Amino acid sequencing of proteins; Primary, Secondary and Tertiary structure.

PRACTICAL

The Practical work will, in general, be based on the syllabus prescribed in theory and the candidates will be required to show the knowledge of the following -

1. Isolation of antibiotic resistant bacteria.
2. Estimation of alkaline phosphatase activity.
3. Measurement of α -amylase activity in extra-cellular fraction of microbial cultures.
4. Estimation of glycogen in bacterial cells.
5. Measurement of cellulase activity by Viscometric technique.
6. Determination of cellulase and amylase activity by reducing sugar assay test.
7. Isolation of DNA.

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BOOK RECOMMENDED :

1. General Microbiology, Vol. 1 by Power & Dagainawala.
 2. Microbial Biochemistry by Moat.
 3. Principles of Biochemistry by Lehninger.
 4. Outline of Biochemistry by Cohn and Stumph.
 5. Biochemistry by Harper.
 6. Text book of Biochemistry by Rama Rao.
 7. Text book of Biochemistry by O.P. Agrawal.
-

INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	Environmental Microbiology and Biostatistics	3 hrs.	50
Second	Microbial Physiology and Immunobiotechnology	3 hrs.	50
	PRACTICAL Examination (including sessionals)	4 hrs.	50 (40+10)

Note : During Two months Summer Vacation, students will visit some Industries. He/She will submit "Summer Job-Training Report" in B.Sc. IInd Year Viva Voce Exam.

PAPER - I

ENVIRONMENTAL MICROBIOLOGY AND BIOSTATISTICS

(Paper Code - 0876)

MM50

- UNIT-1** Our environment : Soil, water and air. Concept of environment in relation to microbes. Environment included physiological adaptations in microorganisms. Nature of microbial population in soil, water and air. Biogeochemical cycling - Carbon, Nitrogen, Sulphur and Phosphorus.
- UNIT-2** Population interactions : Neutralism, Commensalism, Synergism, Mutualism, Antagonistic relationships. Mycorrhizal associations. VAM and its importance.
- UNIT-3** Nitrogen fixation by symbiotic and non-symbiotic microorganisms. Use of microorganisms as biofertilizers. Mass cultivation of Rhizobium and Azotobacter. Use of blue-green algae as biofertilizers.
- UNIT-4** Liquid waste disposal. Nature of domestic and municipal waste and sewage. Sewage treatment. Solid waste disposal. Methods of disposal of Agricultural waste.
- UNIT-5** Basic idea of probability, normal, binomial and poisson distribution. Mean, Mode and Median. Chi-Square test. Exponential and Logarithmic Functions.

PRACTICALS

1. Isolation of Microorganisms from Air.
2. Isolation of Microorganisms from Water.
3. Isolation of Microorganisms from soil.
4. Determination of MPN of faecal contaminants in water.
5. Measurement & confirmation of *E. coli* in water sample.
6. Biochemical tests for identification of enteric bacteria.
7. Study of Rhizobium from root nodules.
8. Study of symbiotic and non-symbiotic blue-green algae.
9. Problems based on the determination of Mean, Median and Mode.
10. Problems on Chi-Square Test.
11. Experiments to demonstrate Symbiotic, Antagonistic activities and relations amongst microbes and their interactions with plants.

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PAPER-II

(Paper Code-0931)

FERMENTATION TECHNOLOGY AND GOVERNMENT REGULATIONS

MLM : 50

- UNIT-I** Fermentation equipments and production process. Principal types of fermenters - The batch fermenters, continuous stirred tank fermenters, Tubular fermenter, The fluidised bed fermenter, Solid State fermenters. Computer control of fermentation process. Strain improvement process.
- UNIT-II** Industrial production of organic acids - Lactic and citric acid.
Enzymes - amylase, protease and amino acids - L-lysine and glutamic acid.
- UNIT-III** Production of alcohol, wine, beer and acetic acid.
Production of antibiotics - Penicillin and Streptomycine.
Industrial production of vitamins - Vitamin B12 and Riboflavin.
- UNIT-IV** Importance of microorganisms in dairy industries. Production of cheese, Butter milk; and in bakery industries - leavening of bread, Indian fermented foods. Fungi and bacteria as a source of single cell proteins (SCP) and proteins.
- UNIT-V** Role of international organisation in biotechnology. Government programmes for biotechnology development. Government regulations of recombinant DNA research. Hazardous industrial wastes, Mycotoxin hazards in the production of fungal products. Regulations for disposal of biohazardous materials. Patenting of the products in Industries.

PRACTICALS

1. Measurement of production of citric acid by *Aspergillus niger*.
2. Measurement and production of alcohol by yeast.
3. Demonstration of Transformation of steroids.
4. Demonstration of IAA production by microbes.
5. Demonstration of enzyme production by microorganisms.
(a) Amylase (b) Cellulase
6. Demonstration of mushroom cultivation.

RECOMMENDED BOOKS :

1. Industrial Microbiology by L.E. Casida.
2. Fermentation Technology by Whittakar.
3. General Microbiology, Vol. II, by Powar and Dagainawala.
4. Molecular Biology and Biotechnology by H.D. Kumar.
5. Elements of Biotechnology by P.K. Gupta.

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INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	Environmental Microbiology and Biostatistics	3 hrs.	50
Second	Microbial Physiology and Immunobiotechnology	3 hrs.	50
	PRACTICAL Examination (including sessionals)	4 hrs.	50 (40+10)

Note : During Two months Summer Vacation, students will visit some Industries. He/She will submit "Summer Job-Training Report" in B.Sc. IInd Year Viva Voce Exam.

PAPER - I

ENVIRONMENTAL MICROBIOLOGY AND BIOSTATISTICS

(Paper Code - 0876)

M.M.50

- UNIT-1** Our environment : Soil, water and air. Concept of environment in relation to microbes. Environment included physiological adaptations in microorganisms. Nature of microbial population in soil, water and air. Biogeochemical cycling - Carbon, Nitrogen, Sulphur and Phosphorus.
- UNIT-2** Population interactions : Neutralism, Commensalism, Synergism, Mutualism, Antagonistic relationships. Mycorrhizal associations. VAM and its importance.
- UNIT-3** Nitrogen fixation by symbiotic and non-symbiotic microorganisms. Use of microorganisms as biofertilizers. Mass cultivation of Rhizobium and Azotobacter. Use of blue-green algae as biofertilizers.
- UNIT-4** Liquid waste disposal. Nature of domestic and municipal waste and sewage. Sewage treatment. Solid waste disposal. Methods of disposal of Agricultural waste.
- UNIT-5** Basic idea of probability, normal, binomial and poisson distribution. Mean, Mode and Median. Chi-Square test. Exponential and Logarithmic Functions.

PRACTICALS

1. Isolation of Microorganisms from Air.
2. Isolation of Microorganisms from Water.
3. Isolation of Microorganisms from soil.
4. Determination of MPN of faecal contaminants in water.
5. Measurement & confirmation of *E. coli* in water sample.
6. Biochemical tests for identification of enteric bacteria.
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9. Problems based on the determination of Mean, Median and Mode.
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11. Experiments to demonstrate Symbiotic, Antagonistic activities and relations amongst microbes and their interactions with plants.

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INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	General Microbiology, Tools and Techniques	3 hrs.	50
Second	Molecular Biology, Biochemistry and Microbial Genetics	3 hrs.	50
	PRACTICAL (including sessionals)	4 hrs.	50 (40+10)

PAPER -

GENERAL MICROBIOLOGY, TOOLS AND TECHNIQUES

M.M.50

I (paper code - 0826)

- UNIT-1** History and development of Industrial Microbiology. Contributions of Antony von Leeuwenhoek, Louis Pasteur, Robert Koch, Edward Jenner, Wakman, Alexander Fleming.
- UNIT-2** General characteristics and structure of Bacteria, Cyanobacteria, Fungi, Actinomycetes, Mycoplasmas, Viruses.
- UNIT-3** Microscopy - Invention of Microscope, Compound microscope, Dark field, Fluorescent, Phase contrast and Electron microscope.
- UNIT-4** Method of sterilization, culture media and isolation techniques. Methods of preservation of microbial cultures.
- UNIT-5** Basic principles and usage - pH meter, Densitometer, Colorimeter, Spectrophotometry, Fluorimetry, Centrifugation - Principles and applications. Usage of Fermentation.

PRACTICALS

The Practical works will, in general be based on the prescribed syllabus in theory and the candidates will be required to show the knowledge of the following :

1. Preparation of media, autoclaving and sterilization of glassware.
2. Isolation of Phytopathogens.
3. Isolation of Microorganisms from soil and water : Bacteria, Fungi, and Algae.
4. Purification of microbial cultures.
5. Camera Lucida Drawing.
6. Standard Plate count.
7. Haemocytometer.
8. Chromatographic techniques : Separation of amino acids by paper and thin layer chromatography.
9. Measurement of pH of fruit juice.
10. Estimation of carbohydrate by colorimeter.

BOOK RECOMMENDED :

1. General Microbiology, Vol. II by Power and Daganawala.
2. Microbiology by Pelezar, Reid and Chan.
3. General Microbiology by Davis and Harper.
4. A Treatise on Media and Methods Used in Bacteriological Techniques by V. Iswarn.
5. Introductory Mycology by C.J. Alexopoulos & Mims.
6. Microbiology by P.D. Sharma.


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D.S. 21/7/12 V. Iswarn 23/7/12

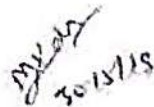
Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one-dimensional box and one-dimensional harmonic oscillator.

Unit-5 Indistinguishability of particles and its consequences, Bose-Einstein & Fermi-Dirac conditions, Concept of partition function, Derivation of Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac Statistics, Limits of B-E and F-D statistics to M-B statistics. Application of B-E statistics to black body radiation, Application of F-D statistics to free electrons in a metal.

TEXT AND REFERENCE BOOKS:

1. B.B. Laud, "Introduction to Statistical Mechanics" (Mcmillan 1981)
2. F. Reif : "Statistical Physics" (Mcgraw-Hill, 1998).
3. K, Haug : "Statistical Physics" (Wiley Eastern, 1988).
4. Thermal and statistical Physics: R.K. Singh, Y.M. Gupta and S. Sivraman.
5. Statistical Physics: Berkeley Physics Course, Vol. 5
6. Physics (Part-2): Editor, Prof. B.P. Chandra, M.P. Hindi Granth Academy.
7. Heat and Thermodynamics: K.W. Zeemansky.
8. Thermal Physics: B.K. Agarwal.
9. Heat and Thermodynamics: Brij Lal and N. Subramanyam.
10. Heat and Thermodynamics: Dayal, Verma and Pandey.
11. A Treatise on Heat: M.N. Saha and B.N. Srivastava.




30/12/18





THERMODYNAMICS, KINETIC THEORY AND STATISTICAL PHYSICS

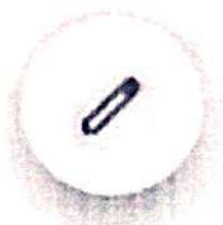
Unit-1 The laws of thermodynamics : The Zeroth law, first law of thermodynamics, internal energy as a state function, reversible and irreversible change, Carnot's cycle, Carnot theorem, second law of thermodynamics, Clausius theorem inequality. Entropy, Change of entropy in simple cases (i) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Concept of entropy, Entropy of the universe. Entropy change in reversible and irreversible processes, Entropy of Ideal gas, Entropy as a thermodynamic variable, S-T diagram, Principle of increase of entropy. The thermodynamic scale of temperature, Third law of thermodynamics, Concept of negative temperature.

Unit-2 Thermodynamic functions, Internal energy, Enthalpy, Helmholtz function and Gibb's free energy, Maxwell's thermodynamical equations and their applications, TdS equations, Energy and heat capacity equations Application of Maxwell's equation in Joule-Thomson cooling, adiabatic cooling of a system, Van der Waals gas, Clausius-Clapeyron heat equation. Blackbody spectrum, Stefan-Boltzmann law, Wien's displacement law, Rayleigh-Jean's law, Planck's quantum theory of radiation.

Unit-3 Maxwellian distribution of speeds in an ideal gas: Distribution of speeds and velocities, experimental verification, distinction between mean, rms and most probable speed values. Doppler broadening of spectral lines. Transport phenomena in gases: Molecular collisions mean free path and collision cross sections. Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure.
Behaviour of Real Gases: Deviations from the Ideal Gas Equation. The Virial Equation. Andrew's Experiments on CO₂ Gas. Critical Constants.

Unit-4 The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibb's ensemble, accessible and inaccessible states. Concept of phase space, γ phase space and μ phase space. Equilibrium between two systems in thermal contact, probability and entropy, Boltzmann entropy relation. Boltzmann canonical distribution law and its applications, law of equipartition of energy.

M.P.B.
20/11/14
P. Kumar
A.S.
Sharma



PHYSICS

Paper-II

WAVES, ACOUSTICS AND OPTICS

Unit-1 Waves in media: Speed of transverse waves on uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves. Waves over liquid surface: gravity waves and ripples. Group velocity and phase velocity and relationship between them. Production and detection of ultrasonic and infrasonic waves and applications.

Reflection, refraction and diffraction of sound : Acoustic impedance of a medium, percentage reflection & refraction at a boundary, impedance matching for transducers, diffraction of sound, principle of a sonar system, sound ranging.

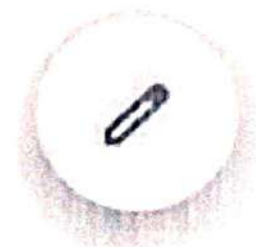
Unit-2 Fermat's Principle of extremum path, the aplanatic points of a sphere and other applications. Cardinal points of an optical system, thick lens and lens combinations. Lagrange equation of magnification, telescopic combinations, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates, aplanatic points, oil immersion objectives, meniscus lens.

Optical instruments: Entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces. (Ramsdon and Hygen's eyepieces).

Unit-3 Interference of light: The principle of superpositions, two slit interference, coherence requirement for the sources, optical path retardations, Conditions for sustained interference, Theory of interference, Thin films. Newton's rings and Michelson interferometer and their applications, its application for precision determinations of wavelength, wavelength difference and the width of spectral lines. Multiple beam interference in parallel film and Fabry-Perot interferometer. Rayleigh refractometer, Twyman-Green interferometer and its uses.

Unit-4 Diffraction, Types of Diffraction, Fresnel's diffraction, half-period zones, phasor diagram and integral calculus methods, the intensity distribution, Zone plates, diffraction due to straight edge, Fraunhofer diffraction due to a single slit and double slit, Diffraction at N-Parallel slit, Plane Diffraction grating. Rayleigh criterion, resolving power of grating, Prism, telescope.

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Polarized light and its mathematical representation, Production of polarized light by reflection, refraction and scattering. Polarization by double refraction and Huygen's theory, Nicol prism, Retardation plates, Production and analysis of circularly and elliptically polarized light, Optical activity and Fresnel's theory, Biquartz polarimeter.

Unit-5 Laser system: Basic properties of Lasers, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion, Types of Laser : Ruby and He-Ne laser, and Applications of laser : Application in communication, Holography and Basics of non linear optics and Generation of Harmonic.

TEXT AND REFERENCE BOOKS:

1. A.K. Ghatak, 'Physical Optics'
2. D.P. Khandelwal, 'Optical and Atomic Physics' (Himalaya Publishing House, Bombay, 1988)
3. K.D. Moltey, 'Optics' (Oxford University Press)
4. Sears: 'Optics'
5. Jenkins and White: 'Fundamental of Optics' (McGraw-Hill)
6. B.B. Laud: 'Lasers and Non-linear Optics' (Wiley Eastern 1985)
7. Smith and Thomson: 'Optics' (John Wiley and Sons)
8. Berkely Physics Courses: Vol.-III, 'Waves and Oscillations'
9. I.G. Main, 'Vibrations and Waves' (Cambridge University Press)
10. H.J. Pain: 'The Physics of Vibrations and Waves' (MacMillan 1975)
11. Text Book of Optics: B.K. Mathur
12. B.Sc. (Part III) Physics: Editor: B.P. Chandra, M.P. Hindi Granth Academy.
13. F. Smith and J.H. Thomson, Manchester Physics series: optics (John wiley, 1971)
14. Born and Wolf : 'Optics'.
15. Physical Optics: B. K. Mathur and T. P. Pandya.
16. A textbook of Optics: N. Subrahmanyam, Brijlal and M. N. Avadhanulu.
17. Geometrical and Physical Optics: Longhurst.
18. Introduction to Modern Optics: G. R. Fowels.
19. Optics: P. K. Srivastav.

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Session 2019-20

PHYSICS

B.Sc. Part-I

Paper-I

MECHANICS, OSCILLATIONS AND PROPERTIES OF MATTER

(Paper code 0793)

- Unit-1 Cartesian, Cylindrical and Spherical coordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications. Motion under a central force, Kepler's laws, Effect of Centrifugal and Coriolis forces due to earth's rotation, Center of mass (C.M.), Lab and C.M. frame of reference, motion of C.M. of system of particles subject to external forces, elastic, and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference, Conservation of linear and angular momentum, Conservation of energy.
- Unit-2 Rigid body motion, rotational motion, moments of inertia and their products, principal moments & axes, introductory idea of Euler's equations. Potential well and Periodic Oscillations, case of harmonic small oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations: spring and mass system, simple and compound pendulum, torsional pendulum.
- Unit-3 Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, damped harmonic oscillator, case of different frequencies. Power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance.
- Unit-4 E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as deflecting field- CRO sensitivity, Transverse B field, 180° deflection, mass spectrograph, curvatures of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields: velocity selector, its resolution. Parallel E and B fields, positive ray parabolas, discovery of isotopes, elements of mass spectrography, principle of magnetic focusing lens.
- Unit-5 Elasticity: Strain and stress, elastic limit, Hooke's law, Modulus of rigidity, Poisson's ratio, Bulk modulus, relation connecting different elastic- constants, twisting couple of a cylinder (solid and hollow), Bending moment, Cantilever, Young modulus by bending of beam.
- Viscosity: Poiseuille's equation of liquid flow through a narrow tube, equations of continuity, Euler's equation, Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law, Coefficient of viscosity, Stoke's law, Surface tension and molecular interpretation of surface tension, Surface energy, Angle of contact, wetting.

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TEXT AND REFERENCE BOOKS:

1. E M Purcell, Ed Berkeley physics course, vol. Mechanics (Mc. Gr. Hill) R P Feynman.
2. R B Lighton and M Sands, the Feynman lectures in physics, vol I (B) publications. Bombay, Delhi, Calcutta, Madras.
3. D P Khandelwal, Oscillations and waves (Himalaya Publishing House Bombay).
4. R. K. Ghosh, The Mathematics of waves and vibrations (Macmillan 1975).
5. J.C. Upadhyaya- Mechanics (Hindi and English Edition.)
6. D.S. Mathur- Mechanics and properties of matter.
7. Brijlal and Subramaniam- Oscillations and waves. Resnick and Halliday- Volume I
8. Physics Part -1: Resnick and Halliday.

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Session 2019-20

PHYSICS

Paper-II

ELECTRICITY, MAGNETISM AND ELECTROMAGNETIC THEORY

Unit-1 Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field, and their geometrical interpretation, line, surface and volume integrals, flux of a vector field. Gauss's divergence theorem, Green's theorem and Stoke's theorem and their physical significance. Kirchoff's law, Ideal Constant-voltage and Constant-current Sources, Thevenin theorem, Norton theorem, Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem.

Unit-2 Coulomb's law in vacuum expressed in Vector forms, calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in a electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Relation between Electric potential and Electric field, torque on a dipole in a uniform electric field and its energy, flux of the electric field. Gauss's law and its application; E due to (1) an Infinite Line of Charge, (2) a Charged Cylindrical Conductor, (3) an Infinite Sheet of Charge and Two Parallel Charged Sheets, capacitors, electrostatic field energy, force per unit area of the surface of a conductor in an electric field, conducting sphere in a uniform electric field.

Unit-3 Dielectric constant, Polar and Non Polar dielectrics, Dielectrics and Gauss's Law, Dielectric Polarization, Electric Polarization vector P, Electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity, Polarizability and mechanism of Polarization, Lorentz local field, Clausius Mossotti equation, Debye equation,

Ferroelectric and Paraelectric dielectrics, Steady current, current density J, non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits, complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor.

Unit-4 Magnetization Current and magnetization vector M, three magnetic vectors and their relationship, Magnetic permeability and susceptibility, Diamagnetic, paramagnetic and ferromagnetic substances. B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss.

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Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole). Ampere's Circuital law (Integral and Differential Forms).

Unit-5 Electromagnetic induction, Faraday's law, electromotive force, integral and differential forms of Faraday's law Mutual and self inductance, Transformers, energy in a static magnetic field. Maxwell's displacement current, Maxwell's equations, electromagnetic field energy density. The wave equation satisfied by E and B, plane electromagnetic waves in vacuum, Poynting's vector.

TEXT AND REFERENCE BOOKS:

1. Berkeley Physics Course, Electricity and Magnetism, Ed. E.M. Purcell (Mc Graw - Hill).
2. Halliday and Resnik, Physics, Vol. 2.
3. D J Griffith, Introduction to Electrodynamics (Prentice-Hall of India).
4. Raitz and Milford, Electricity and Magnetism (Addison-Wesley).
5. A S Mahajan and A A Rangwala, Electricity and Magnetism (Tata Mc Graw-hill).
6. A M Portis, Electromagnetic fields.
7. Pugh & Pugh, Principles of Electricity and Magnetism (Addison-Wesley).
8. Panofsky and Phillips, Classical Electricity and Magnetism, (India Book House).
9. S S Atwood, Electricity and Magnetism (Dover).

M. K. Jaiswal
P. K. Jaiswal
Q. K. Jaiswal
J. K. Jaiswal

Minimum 16 (Eight from each group)

Experiments out of the following or similar experiments of equal standard

GROUP-A

1. Study of laws of parallel and perpendicular axes for moment of inertia.
2. Moment of inertia of Fly wheel.
3. Moment of inertia of irregular bodies by inertia table.
4. Study of conservation of momentum in two dimensional oscillations.
5. Study of a compound pendulum.
6. Study of damping of a bar pendulum under various mechanics.
7. Study of oscillations under a bifilar suspension.
8. Study of modulus of rigidity by Maxwell's needle.
9. Determination of Y , k , η by Searl's apparatus.
10. To study the oscillation of a rubber band and hence to draw a potential energy curve from it.
11. Study of oscillation of a mass under different combinations of springs.
12. Study of torsion of wire (static and dynamic method).
13. Poisson's ratio of rubber tube.
14. Study of bending of a cantilever or a beam.
15. Study of flow of liquids through capillaries.
16. Determination of surface tension of a liquid.
17. Study of viscosity of a fluid by different methods.

GROUP-B

1. Use of a vibration magnetometer to study a field.
2. Study of magnetic field B due to a current.
3. Measurement of low resistance by Carey-Foster bridge.
4. Measurement of inductance using impedance at different frequencies.
5. Study of decay of currents in LR and RC circuits.
6. Response curve for LCR circuit and response frequency and quality factor.
7. Study of waveforms using cathode-ray oscilloscope.
8. Characteristics of a choke and Measurement of inductance.
9. Study of Lorentz force.
10. Study of discrete and continuous LC transmission line.
11. Elementary FORTRAN programs, Flowcharts and their interpretation.
18. To find the product of two matrices.
19. Numerical solution of equation of motion.
20. To find the roots of quadratic equation.

M. J. B.
S. M. A.
Q. S.
20/11/19
A. S.

TEXT AND REFERENCE BOOKS:

1. B saraf et al Mechanical Systems(Vikas publishing House,New Delhi).
2. D.P. khandelwal, A Laboratory Manual of Physics for Undergraduate classes (Vani Publication House,New Delhi).
3. C G Lambe Elements of statistics (Longmans Green and Co London New York, Tppato).
4. C Dixon, Numerical analysis.
5. S Lipsditz and A Poe, schaum's outline of theory and problems of programming with Fortran (MC Graw-Hill Book Company, Singapore 1986).

M. P. B.

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J. M.

पाठ्यक्रम

प्रायोगिक भौतिकी (छ. ग.) बी.एस-सी. तृतीय वर्ष

समय : ५ घण्टे

अंक : 50

Minimum 16 (Sixteen) out of the following or similar experiments of equal standard.

1. Determination of Planck's constant.
2. Determination of e/m by using Thomson's tube.
3. Determination of e by Millikan's method.
4. Study of spectra of hydrogen and deuterium (Rydberg constant and ratio of masses of electron proton)
5. Absorption spectrum of iodine vapour.
6. Study of alkali or alkaline earth spectra using a concave gra's.
7. Study of Zeeman effect for determination of Lande g -factor.
8. Analysis of a given band spectrum.
9. Study of Raman spectrum using laser as an excitation source.
10. Study of absorption of alpha and beta rays.
11. Study of statistics in radioactive measurement.
12. Coniometric study of crystal faces.
13. Determination of dielectric constant.
14. Hysteresis curve of transformer core.
15. Hall- probe method for measurement of magnetic field.
16. Specific resistance and energy gap of a semiconductor.
17. Characteristics of transistor.
18. Characteristics of a tunnel diode.
19. Study of voltage regulation system.
20. Study of a regulated power supply.
21. Study of lissajous figures using a CRO.
22. Study of VTVM.
23. Study of RC and TC coupled amplifiers.
24. Study of AF and RF oscillators.
25. Find roots of $f(x) = 0$ by using Newton-Raphson method.
26. Find roots of $f(x) = 0$ by using secant method.
27. Integration by Simpson rule.
28. To find the value of V at.
29. String manipulations.
30. Towers of Hanoi (Nonrecursive)
31. Finding first four perfect numbers.
32. Quadratic interpolation using Newton's forward- difference formula of degree

भौतिकी

बी.एस-सी. तृतीय वर्ष

RELATIVITY, QUANTUM MECHANICS, ATOMIC MOLECULAR AND NUCLEAR PHYSICS

PAPER - I

- Unit 1.** Reference systems, inertial frames, Galilean invariance and conservation law: propagation of light, Michelson-Morley experiment, search for ether. Postulate for the special theory of relativity, Lorentz transformations, length contraction, time dilation, velocity addition theorem, variation of mass with velocity, mass energy equivalence, particle with zero rest mass, Compton effect.
- Unit 2. Origin of the Quantum Theory :** Failure of classical physics to explain the phenomena such as black-body spectrum, photoelectric effect. Wave-particle duality and uncertainty principle: de Broglie's hypothesis for matter waves: The concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Davisson and Germer experiment. Consequence of de Broglie's concepts, quantisation in hydrogen atom energies of a particle in a box, packets. Consequence of the uncertainty relation gamma ray microscope, diffraction at a slit.
- Unit 3. Quantum Mechanics :** Schrodinger's equation. Postulatory basis of quantum mechanics, operators, expectation values, transition probabilities, applications to particle in a one- and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier. Hydrogen atom: Natural occurrence of n , l and m quantum numbers, the related physical quantities.
- Unit 4.** Spectra of hydrogen, deuterium and alkali atoms spectral terms, doublet fine structure, screening constants for alkali spectra for s , p , d and f states, selection rules. Discrete set of electronic energies of molecules, quantisation of vibrational and rotational energies, determination of internuclear distance, pure rotational and rotation vibration spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic vibration spectra. Raman effect, Stokes and anti-stokes lines, complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.
- Unit 5.** Interaction of charged particles and neutrons with matter, working of nuclear detectors G-M counter, proportional counter and scintillation counter, cloud chambers, spark chamber, emulsions. Structure of nuclei, basic properties (m , Z and binding energy), deuteron binding energy, p - p and n - p scattering and general concepts of nuclear forces, Beta decay, range of alpha particle Geiger-Nuttall law Gamow's explanation of beta decay, alpha decay and continuous and discrete spectra. Nuclear reactions, channels, compound nucleus, direct reaction (concepts) Shell model and liquid drop model. fission and fusion (concepts), energy production

PAPER- II**Solid State Physics, Solid State Devices and Electronics**

- Unit 1.** Amorphous and crystalline solids, elements of symmetry, seven crystal system, cubic lattices, crystal planes, Miller indices, Laue's equation for X-ray diffraction, Bragg's Law. Bonding in solids, classification. Cohesive energy of solid. Madelung constant, evaluation of parameters. Specific heat of solids, classical theory (Dulong-Petit's law). Einstein and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin zone.
- Unit 2.** Free electron model of a metal, solution of one dimensional Schrodinger equation in a constant potential. Density of states. Fermi Energy, energy bands in a solid (Kronig-Penny model without mathematical details). Metals, Insulator and Semiconductors. Hall effect.
Dia, para and ferromagnetism. Langevins theory of dia and para-magnetism. Curie-Weiss's Law. Qualitative description of Ferromagnetism (Magnetic domains), B-H curve and Hysteresis loss.
- Unit 3.** Intrinsic semiconductors, carrier concentration in thermal equilibrium, Fermi level, Impurity semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emitting diode, solar cell, Bipolar transistors, *p-n-p* and *n-p-n* transistors characteristics of transistors, different configurations, current amplification factor, FET.
- Unit 4.** Half and full wave rectifier, rectifier efficiency ripple factor, Bridge rectifier, filters, inductor filter, T and N filters, Zener diode, regulated power supply. Application of transistors. Bipolar transistor as amplifier. Single stage and CE small signal amplifiers, emitter followers, transistor as power amplifier, transistor as oscillator, Wein-Bridge oscillator and Hartley oscillator.
- Unit 5.** Introduction to computer organisation, time sharing and multi programming systems, window based word processing packages, MS Word.
Introduction to C programming and application to simple problems of arranging numbers in ascending / descending orders : sorting a given data in an array, solution of simultaneous equation.
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