

Details of Subject Combinations offered across all programmes in Govt. College Khertha , Distt- Balod ( C.G)

1.2.1

S.No	Programme Level	Name of the programme	Duration( Months)	Affiliation
1	Undergraduation	B.A. Hindi literature+ Sociology+ Political science	36 Months	Hemchand Yadav University
2	Undergraduation	B.A. Hindi literature+ Sociology+ Geography	36 Months	Hemchand Yadav University
3	Undergraduation	B.A. Hindi literature+ Political Science+ Geography	36 Months	Hemchand Yadav University
4	Undergraduation	B.A. Geography+ Sociology+ Political science	36 Months	Hemchand Yadav University
5	Undergraduation	B.Com III. . Income Tax+ Auditing + Management Acc. +Indirect Tax with GST +Group A ( Finance Area)	36 Months	Hemchand Yadav University
6	Undergraduation	B.Com III. . Income Tax+ Auditing + Management Acc. +Indirect Tax with GST +Group B( Marketing Area)	36 Months	Hemchand Yadav University
7	Undergraduation	B.Com III. . Income Tax+ Auditing + Management Acc. +Indirect Tax with GST +Group C( Commerecial Area)	36 Months	Hemchand Yadav University
8	Undergraduation	B.Com III. . Income Tax+ Auditing + Management Acc. +Indirect Tax with GST +Group D( Money Banking & Insurance Area )	36 Months	Hemchand Yadav University
9	Undergraduation	B.Sc. Chemistry + Botany + Zoology	36 Months	Hemchand Yadav University
		B.Sc. Chemistry + Botany + Geography	36 Months	Hemchand Yadav University



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# 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. 1460 / अका. / 2019  
प्रति,

दुर्ग, दिनांक 04/07/2019

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, लाईब्रेरी 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

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**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



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## 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 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-I 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.



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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.




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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 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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# SCHEME OF EXAMINATION

Subject	Paper	Max. Mark	Total Marks	Min. Marks
Environmental Studies		75	100	33
Field Work		25		
<b>Foundation Course</b>				
Hindi Language	I	75	75	26
English Language	I	75	75	26
<b>नोट- प्रत्येक खंड में से 2 दो प्रश्न हल करने होंगे। सभी प्रश्नपत्र समान अंक के होंगे।</b>				
<b>Three Elective Subject:</b>				
1. Physics	I	50		
	II	50	100	33
	Practical		50	17
2. Chemistry	I	33		
	II	33	100	33
	III	34		
	Practical		50	17
3. Mathematics	I	50		
	II	50	150	50
	III	50		
4. Botany	I	50		
	II	50	100	33
	Practical		50	17
5. Zoology	I	50		
	II	50	100	33
	Practical		50	17
6. Geology	I	50		



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		II	50	100	33
		Practical		50	17
7. Statistics	I		50		
	II		50	100	33
	Practical			50	17
8. Anthropology	I		50		
	II		50	100	33
	Practical			50	17

Subject	Paper	Max. Marks	Total Marks	Min. Marks
9. Defense Studies	I	50		
	II	50	100	33
	Practical		50	17
10. Micro Biology	I	50		
	II	50	100	33
	Practical		50	17
11. Computer Science	I	50		
	II	50	100	33
	Practical		50	17
12. Information Technology	I	50		
	II	50	100	33
	Practical		50	17
13. Industrial Chemistry	I	34		
	I	33	100	33
	II	33		
	Practical		50	17
14. Bio Chemistry	I	50		
	II	50	100	33
	Practical		50	17
15. Bio Technology	I	50		
	II	50	100	33
	Practical		50	17



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### USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 examination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986.

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the University or examination centres.
3. Calculators with, memory and following variables be permitted +, -,  $\times$ ,  $\div$ , square, reciprocal, exponentials log, square root, trigonometric functions, wize, sine, cosine, tangent etc. factorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.



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

MM. 75

इन्वियरमेंटल 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: (तैंतीस 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।



  
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## 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.



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- 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.



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#### 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.



  
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### 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)
9. Bruinner R.C. 1989, Hazardous Waste Incineration. McGraw Hill Inc. 480p
10. Clark R.S. Marine pollution, Clanderson press Oxford (TB)
11. Cuningham, W.P. Cooper. T.H. Gorhani, E & Hepworth. M.T. 200
12. Dr. A.K.- Environmental Chemistry. Wiley Eastern Ltd.
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. m473p.
15. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R)
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17. Jadhav H. & Bhosale, V.H. 1995 Environmental Protection and Law. Himalayapub. House, Delhi 284p
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23. Sharma B.K. 2001, Environmental chemistry, Goel pub. House, Meerut
24. Survey of the Environment, The Hindu (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 I and II, Environment Media (R)
27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
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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।



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**पाठ्यक्रम संशोधन का औचित्य :-**

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



  
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FOUNDATION COURSE

PAPER - II

ENGLISH LANGUAGE

M.M. 75

(Paper code - 0792)

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.

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Session  
2019-20

## PHYSICS

### OBJECTIVES OF THE COURSE

The undergraduate training in physics is aimed at providing the necessary inputs so as to set forth the task of bringing about new and innovative ideas/concepts so that the formulated model curricula in physics becomes in tune with the changing scenario and incorporate new and rapid advancements and multi disciplinary skills, societal relevance, global interface, self sustaining and supportive learning.

It is desired that undergraduate i.e. B.Sc. level besides grasping the basic concepts of physics should in addition have broader vision. Therefore, they should be exposed to societal interface of physics and role of physics in the development of technologies.

### EXAMINATION SCHEME:

1. There shall be 2 theory papers of 3 hours duration each and one practical paper of 4 hours duration. Each paper shall carry 50 marks.
2. Numerical problems of at least 30% will compulsorily be asked in each theory paper.
3. In practical paper, each student has to perform two experiments one from each groups as listed in the list of experiments.
4. Practical examination will be of 4 hours duration- one experiment to be completed in 2 hours.

The distribution practical marks as follows:

Experiment	: 15+15=30
Viva voce	: 10
Internal assessment	: 10

5. The external examiner should ensure that at least 16 experiments are in working order at the time of examination and submit a certificate to this effect.

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HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)  
NEW CURRICULUM OF B.Sc. PART I

Session 2019-20  
CHEMISTRY

The new curriculum will comprise of three theory papers of 33, 33 and 34 marks each and practical work of 50 marks. The curriculum is to be completed in 180 working days as per the UGC norms & conforming to the directives of the Govt. of Chhattisgarh. The theory papers are of 60 hrs each duration and the practical work of 180 hrs duration.

PAPER I  
INORGANIC CHEMISTRY

60Hrs. M.M.33

UNIT-I

A. ATOMIC STRUCTURE

Bohr's theory, its limitation and atomic spectrum of hydrogen atom. General idea of de-Broglie matter-waves, Heisenberg uncertainty principle, Schrödinger wave equation, significance of  $\Psi$  and  $\Psi^2$ , radial & angular wave functions and probability distribution curves, quantum numbers, Atomic orbital and shapes of s, p, d orbitals, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements.

B. PERIODIC PROPERTIES

Detailed discussion of the following periodic properties of the elements, with reference to s and p-block. Trends in periodic table and applications in predicting and explaining the chemical behavior.

- Atomic and ionic radii,
- Ionization enthalpy,
- Electron gain enthalpy,
- Electronegativity, Pauling's, Mulliken's, Allred Rochow's scales.
- Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table.

UNIT-II

CHEMICAL BONDING I

**Ionic bond:** Ionic Solids - Ionic structures, radius ratio & co-ordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy Born- Haber cycle, Solvation energy and solubility of ionic solids, polarising power & polarisability of ions, Fajans rule, Ionic character in covalent compounds: Bond moment and dipole moment, Percentage ionic character from dipole moment and electronegativity difference, Metallic bond-free electron, Valence bond & band theories.

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### UNIT-III

#### CHEMICAL BONDING II

**Covalent bond:** Lewis structure, Valence bond theory and its limitations, Concept of hybridization, Energetics of hybridization, equivalent and non-equivalent hybrid orbitals. Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons:  $\text{H}_2\text{O}$ ,  $\text{NH}_3$ ,  $\text{PCl}_3$ ,  $\text{PCl}_5$ ,  $\text{SF}_6$ ,  $\text{H}_3\text{O}^+$ ,  $\text{SF}_4$ ,  $\text{ClF}_3$ , and  $\text{ICl}_2^-$ . Molecular orbital theory. Bond order and bond strength, Molecular orbital diagrams of diatomic and simple polyatomic molecules  $\text{N}_2$ ,  $\text{O}_2$ ,  $\text{F}_2$ ,  $\text{CO}$ ,  $\text{NO}$ .

### UNIT-IV

#### A. s-BLOCK ELEMENTS

General concepts on group relationships and gradation properties, Comparative study, salient features of hydrides, solvation & complexation tendencies including their function in biosystems and introduction to alkyl & aryls, Derivatives of alkali and alkaline earth metals

#### B. p-BLOCK ELEMENTS

General concepts on group relationships and gradation properties. Halides, hydrides, oxides and oxyacids of Boron, Aluminum, Nitrogen and Phosphorus. Boranes, borazines, fullerenes, graphene and silicates, interhalogens and pseudohalogens.

### UNIT-V

#### A CHEMISTRY OF NOBLE GASES

Chemical properties of the noble gases, chemistry of xenon, structure, bonding in xenon compounds

#### B. THEORETICAL PRINCIPLES IN QUALITATIVE ANALYSIS ( $\text{H}_2\text{S}$ SCHEME)

Basic principles involved in the analysis of cations and anions and solubility products, common ion effect. Principles involved in separation of cations into groups and choice of group reagents. Interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after Group II.

#### REFERENCE BOOKS:

1. Lee, J. D. Concise Inorganic Chemistry ELBS, 1991.
2. Douglas, B.E. and McDaniel, D.H. Concepts & Models of Inorganic Chemistry Oxford, 1970
3. Atkins, P.W. & Paula, J. Physical Chemistry, 10th Ed., Oxford University Press, 2014.
4. Day, M.C. and Selbin, J. Theoretical Inorganic Chemistry, ACS Publications, 1962.
5. Rodger, G.E. Inorganic and Solid State Chemistry, Cengage Learning India Edition, 2002.
6. Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Milestone Publishers/ Vishal Publishing Co.; 33rd Edition 2016
7. Madan, R. D. Modern Inorganic Chemistry, S Chand Publishing, 1987.

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**PAPER: II**  
**ORGANIC CHEMISTRY**

**UNIT-I BASICS OF ORGANIC CHEMISTRY**

Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications; Dipole moment. Electrophiles and Nucleophiles; Nucleophilicity and basicity; Homolytic and Heterolytic cleavage, Generation, shape and relative stability of Carbocations, Carbanions, Free radicals, Carbenes and Nitrenes. Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.

**UNIT-II INTRODUCTION TO STEREOCHEMISTRY**

Optical Isomerism: Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more chiral-centres, Diastereoisomers, meso compounds, Relative and absolute configuration: Fischer, Newmann and Sawhorse Projection formulae and their interconversions; Erythrose and threose, D/L, d/l system of nomenclature, Cahn-Ingold-Prelog system of nomenclature (C.I.P rules), R/S nomenclature. Geometrical isomerism: cis-trans, syn-anti and E/Z notations.

**UNIT-III CONFORMATIONAL ANALYSIS OF ALKANES**

Conformational analysis of alkanes, ethane, butane, cyclohexane and sugars. Relative stability and Energy diagrams. Types of cycloalkanes and their relative stability, Baeyer strain theory: Theory of strainless rings, Chair, Boat and Twist boat conformation of cyclohexane with energy diagrams; Relative stability of mono-substituted cycloalkanes and disubstituted cyclohexane.

**UNIT-IV CHEMISTRY OF ALIPHATIC HYDROCARBONS**

**A. Carbon-Carbon sigma ( $\sigma$ ) bonds**

Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reaction, Free radical substitutions: Halogenation-relative reactivity and selectivity.

**B. Carbon-Carbon Pi ( $\pi$ ) bonds:**

Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations.

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Reactions of alkenes: Electrophilic additions and mechanisms (Markownikoff/Anti -Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti-hydroxylation (oxidation). 1,2-and 1,4-addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene.

Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.

#### UNIT-V AROMATIC HYDROCARBONS

Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/ carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.

#### REFERENCE BOOKS:

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd.(Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Eliel, E. L. & Wilen, S. H. Stereochemistry of Organic Compounds, Wiley: London, 1994.
5. Kalsi, P. S. Stereochemistry Conformation and Mechanism, New Age International, 2005.
6. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.
7. Organic Chemistry, Paula Y. Bruice, 2nd Edition, Prentice-Hall, International Edition (1998).
8. A Guide Book of Reaction Mechanism by Peter Sykes.

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UNIT-I

MATHEMATICAL CONCEPTS FOR CHEMIST

Basic Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs, Properties of straight line, slope and intercept, Functions, Differentiation of functions, maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; Permutation and combination and probability theory, Significant figures and their applications.

UNIT-II

GASEOUS STATE CHEMISTRY

Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path; Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule Thomson effect, Liquification of Gases.

Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor (Z), and its variation with pressure and temperature for different gases. Causes of deviation from ideal behaviour. van der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.

UNIT-III

A. LIQUID STATE CHEMISTRY

Intermolecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension.

B. COLLOIDS and SURFACE CHEMISTRY

Classification, Optical, Kinetic and Electrical Properties of colloids, Coagulation, Hardy Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types, Gel, Syneresis and thixotrophy, Application of colloids.

Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Nature of adsorbed state. Qualitative discussion of BET.

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#### UNIT-IV

##### SOLID STATE CHEMISTRY

Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Crystal defects.

#### UNIT-V

##### A. CHEMICAL KINETICS

Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions.

Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non mathematical concept of transition state theory.

##### B. CATALYSIS

Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristic of catalyst, Enzyme catalysed reactions, Micellar catalysed reactions, Industrial applications of Catalysis.

##### REFERENCE BOOKS:

1. Atkins, P. W. & Paula, J. de Atkin's Physical Chemistry 10th Ed., Oxford University Press (2014).
2. Ball, D. W. Physical Chemistry Thomson Press, India (2007).
3. Castellan, G. W. Physical Chemistry 4th Ed. Narosa (2004).
4. Mortimer, R. G. Physical Chemistry 3rd Ed. Elsevier: NOIDA, UP (2009).
5. Engel, T. & Reid, P. Physical Chemistry 3rd Ed. Pearson (2013).
6. Puri, B.R., Sharma, L. R. and Pathania, M.S., Principles of Physical Chemistry, Vishal Publishing Co., 47th Ed. (2016).
7. Bahl, A., Bahl, B.S. and Tuli, G.D. Essentials of Physical Chemistry, S Chand Publishers (2010).
8. Rakshit P.C., Physical Chemistry, Sarat Book House Ed. (2014).
9. Singh B., Mathematics for Chemist, Pragati Publications.

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**PAPER - IV**  
**LABORATORY COURSE**

**INORGANIC CHEMISTRY**

**A. Semi-micro qualitative analysis** (using  $\text{H}_2\text{S}$  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 :  $\text{NH}_4^+$ ,  $\text{Pb}^{2+}$ ,  $\text{Bi}^{3+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Na}^+$   
Anions :  $\text{CO}_3^{2-}$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{S}_2\text{O}_3^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{CH}_3\text{COO}^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{NO}_3^-$ ,  $\text{SO}_4^{2-}$   
(Spot tests may be carried out wherever feasible)

**B. Acid-Base Titrations**

- Standardization of sodium hydroxide by oxalic acid solution.
- Determination of strength of  $\text{HCl}$  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  $\text{KMnO}_4$  by oxalic acid solution.
- Estimation of  $\text{Fe(II)}$  using standardized  $\text{KMnO}_4$  solution.
- Estimation of oxalic acid and sodium oxalate in a given mixture.
- Estimation of  $\text{Fe(II)}$  with  $\text{K}_2\text{Cr}_2\text{O}_7$  using internal (diphenylamine, anthranilic acid) and external indicator.

**D. Iodo / Iodimetric Titrations**

- Estimation of  $\text{Cu(II)}$  and  $\text{K}_2\text{Cr}_2\text{O}_7$  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  $\text{K}_2\text{Cr}_2\text{O}_7$  using sodium thiosulphate solution as titrants.

**ORGANIC CHEMISTRY**

1. Demonstration of laboratory Glasswares and Equipments.
2. Calibration of the thermometer.  $80^\circ\text{--}82^\circ$  (Naphthalene),  $113.5^\circ\text{--}114^\circ$  (Acetanilide),  $132.5^\circ\text{--}133^\circ$  (Urea),  $100^\circ$  (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.

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4. Determination of the melting points of organic compounds.

Naphthalene 80°–82°, Benzoic acid 121.5°–122°, Urea 132.5°–133° Succinic acid 184.5°–185°, Cinnamic acid 132.5°–133°, Salicylic acid 157.5°–158°, Acetanilide 113.5°–114°, m-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.

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- 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 & H<sub>2</sub>SO<sub>4</sub> 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**



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B.Sc.-I

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## PRACTICAL EXAMINATION

05 Hrs. M.M. 50

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

OR

Crystallization of any one compound as given in the prospectus along with the Determination of mixed MPt.

OR

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).



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**Hemchand Yadav Vishwavidyala, Durg (C.G.)**

**Zoology**

**B.Sc. Part I (2019-20)**

**Paper I**

**(Cell Biology and Non-chordata)**

**Unit:I**

1. The cell (Prokaryotic and Eukaryotic)
2. Organization of Cell: Extra-nuclear and nuclear Plasma membrane, Mitochondria, Endoplasmic reticulum, Golgi body, Ribosome and Lysosome).
3. Nucleus, Chromosomes, DNA and RNA

**Unit:II**

1. Cell division (Mitosis and Meiosis).
2. An elementary idea of Cancer cells And Cell transformation.
3. An elementary idea of Immunity: Innate & Acquired Immunity, Lymphoid organs, Cells of Immune System, Antigen, antibody and their interactions

**Unit:III**

- General characters and classification of Phylum Protozoa, Porifera, and Coelenterata up to order.
2. Protozoa: Type study - Paramecium,
  2. Porifera: Type study - Sycon.
  3. Coelenterata: Type study - Obelia

**Unit: IV**

- General characters and classification of Phylum Platyhelminthes, Nematelminthes, Annelida and Arthropoda up to order.
2. Platyhelminthes and Nematelminthes: Type Study – Fasciola, Ascaris
  3. Annelida: Type Study - Pheretima.
  4. Arthropoda: Type Study - Palaemone.

**Unit:V**

- General characters and classification of Phylum Mollusca and Echinodermata up to order.
2. Mollusca: Type Study - Pila.
  3. Echinodermata- Type Study- Asterias (Starfish).

  
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**Zoology**  
**B.Sc. Part I (2019-20)**  
**Paper II**  
**(Chordata and Embryology)**

**Unit-I**

1. Classification of Hemichordata
2. Hemichordata- Type study-Balanoglossus
3. Classification of Chordates upto orders..
4. Protochordata-Type study - Amphioxus.
5. A comparative account of Petromyzon and Myxine.

**Unit-II**

1. Fishes-Skin & Scales, migration in fishes, Parental care in fish.
2. Amphibia-Parental care and Neoteny.
3. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles

**Unit-III**

1. Birds- Flight Adaptation, Migration, and Perching mechanism, Discuss-Birds are glorified reptiles.
2. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities.
3. Aquatic Mammals and their adaptations.

**Unit:IV**

**1. Fertilization**

2. Gametogenesis, Structure of gamete and Types of eggs
3. Cleavage
4. Development of Frog up to formation of three germ layers.
5. Parthenogenesis

**Unit:V**

1. Embryonic induction, Differentiation and Regeneration.
2. Development of Chick (a) up to formation of three germ layers, (2) Extra-embryonic membranes.
3. Placenta in mammals.



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

**BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE**

**UNIT-I**

**VIRUSES:** General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.

**UNIT -II**

**BACTERIA:** General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, *Rhizobium*, *Azotobacter*, *Anabena*.

**UNIT-III**

**FUNGI:** General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi. Life cycles of *Saprolegnia*, *Albugo*, *Aspergillus*, *Peziza*, *Agaricus*, *Ustilago*, *Puccinia*, *Alternaria* and *Cercospora*. VAM Fungi

**UNIT-IV**

**ALGAE:** Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : *Nostoc*, *Gloeocapsa*, *Volvox*, *Oedogonium*, *Vaucheria*, *Chara*, *Ectocarpus*, *Polysiphonia*.

**UNIT -V**

Lichens- General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology

**Books Recommended:**

Dubey R.C. and Maheshwari D.K. *A text book of Microbiology*, S. Chand Publishing, New Delhi

Presscott, L. Harley, J. and Klein, D. *Microbiology*, 7<sup>th</sup> edition, Tata Mc Graw-Hill Co. New Delhi.

Sharma P.D., *Microbiology and Plant pathology*, Rastogi Publication. New Delhi.

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Alexopolous, C.J. Mims, C.W. and Blackwell, MM. *Introduction to Mycology*, John Wiley & Sons.

Dubey H.C. *An Introduction to Fungi*, Vikas Publishing, New Delhi

Mehrotra R.S. & Agrawal A., *Plant Pathology*, Tata McGraw, New Delhi

Sharma P.D. *Plant Pathology*, Rastogi Publishers, Meeruth.

Sristava, H.N. *Fungi*, Pradeep Publications, Jalandhar

Webster, J. & Weber, R. *Introduction to Fungi*, Cambridge University Press, Cambridge

Kumar H.D. *Introduction to phycology*, Aff. East-west Press, New Delhi

Lee RE, *Phycology*, Cambridge University Press U.K.

Srivastava, H.N., *Algae*, Pradeep Publications, Jalandhar

Pandey S.K. Quick *Concept of Botany*, Lambert Academic publishing, Germany

Pandey S.N., Mishra S.P. & Trivedi P.S. *A Text Book of Botany* (Vol.-I), Vikas Publishing, New Delhi

Singh, Pandey and Jain, *A Text book of Botany*, Rastogi Publication, Meerut.

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Govt. Bilasa Girls College, Bilaspur

(Mr. Shivakant Mishra)

(Mr. Sudheer Tiwari)

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**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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Pandey SN, Mishra SP and Trivedi PS *A text Book of Botany (Vol.II)*, Vikas Publishing, New Delhi

Bhatanagar, SP and Moitra, A. *Gymnosperm*, New Age International (P) Ltd., Publishers, New Delhi


Biswas C. and Johri BM, *The Gymnosperms*, Springer-Verlag, Germany.

Srivastava, HN, *Palaeobotany*, Pradeep Publications Jalandhar

Srivastava, HN, *Bryophyta*, Pradeep Publications Jalandhar

Singh, Pandey and Jain, *A Text Book of Botany*, Rastogi Publication, Meerut

Srivastava, HN, *Fundamentals of Pteridophytes*, Pradeep Publications, Jalandhar

  
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## B.Sc. I (BOTANY)

### PRACTICAL

Study of external (Morphological) and internal (microscopic/anatomical) features of representative genera given in the theory.

1. Algae: Gloeocapsa, Scytonema, Gloeotrichia, Volvox, Oedogonium, Vaucheria, Chara, Ectocarpus, Sargassum, Batrachospermum
2. Gram staining
3. Fungi: Albigo, Aspergillus, Peziza, Agaricus, Puccinia, Alternaria and Cercospora
4. Bryophyta: Riccia, Marchantia, Peltia, Anthoceros, Sphagnum, Funaria
5. Pteridophyta: Lycopodium, Selaginella, Equisetum, Marsilea.
6. Gymnosperm: Cycas, Pinus, Ephedra.

### PRACTICAL SCHEME

TIME: 4 Hrs.

M.M. : 50

1. Algae/Fungi/Gram Staining	10
2. Bryophyta/Pteridophyta	10
3. Gymnosperm	10
4. Spotting	10
5. Viva-Voce	05
6. Sessional	05



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(Dr. Ranjana Shrivastava)

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Govt. VYTPG Science College

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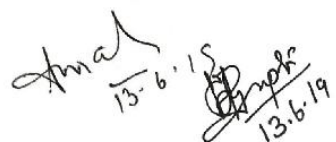
(Mrs. Sanchal Moghe)

Govt. Bilasa Girls College, Bilaspur



(Mr. Shivakant Mishra)

(Mr. Sudheer Tiwari)



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B.S.- (II)



## हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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दूरभाष : 0788-2359400

क्र. 2960/A / अका./2020

दुर्ग, दिनांक 10/9/2020

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

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 हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।



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Distt. Balod (C.G.)

सहा. कुलसचिव (अका.)

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**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.



  
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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.


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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 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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# SCHEME OF EXAMINATION

Subject	Paper	Max. Marks	Total Marks	Min. Marks
C Environmental Studies		75	100	33
Field Work		25		
Foundation Course				
Hindi Language		75	75	26
English Language		75	75	26

नोट:- प्रत्येक में से 02 (दो) प्रश्न करने होंगे । सभी प्रश्न समान अंक के होंगे ।

Three Elective Subject :

1. Physics	I	50	100	33
	II	50		
2. Chemistry	Practical		50	17
	I	33		
	II	33	100	33
	III	34		
3. Mathematics	Practical		50	17
	I	50		
	II	50	150	50
	III	50		
4. Botany	I	50	100	33
	II	50		
5. Zoology	Practical		50	17
	I	50	100	33
	II	50		
6. Geology	Practical		50	17
	I	50	100	33
	II	50		
7. Statistics	Practical	50		17
	I	50	100	33
	II	50		
8. Anthropology	Practical		50	17
	I	50	100	50
	II	50		
	Practical		50	17



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Subject	Paper	Max. Marks	Total Marks	Min. Marks
Compulsory Subject-Foundation Course:				
9. Defense Studies	I	50	100	33
	II	50		
10. MicroBiology	Practical		50	17
	I	50	100	33
	II	50		
11. Computer Sciences	Practical		50	17
	I	50	100	33
	II	50		
12. Information Technology	Practical		50	17
	I	50	100	33
	II	50		
13. Industrial Chemistry	Practical		50	17
	I	34	100	33
	II	33		
	III	33		
14. BioChemistry	Practical		50	17
	I	50	100	33
	II	50		
15. BioTechnology	Practical	50	50	17
	I		100	33
	II	50		
	Practical		50	17

#### USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 examination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986.

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the University or examination centres.
3. Calculators with, memory and following variables be permitted +, -, x, ., square, reciprocal, exponentials log, square root, trigonometric functions, sine, cosine, tangent etc. factorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.



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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) (पैपर 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 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, 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।

  
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**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 सके तथा व्याकरणिक एवं भाषा विषयक प्रस्तावित पाठ्यक्रम के माध्यम से हिन्दी भाषा संबंधित प्रयोग पक्ष से परिचित होते हुए प्रतियोगी परीक्षाओं की दृष्टि से ज्ञानार्जन कर सके।



  
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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 05 Marks  
(b) Vocabulary

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.



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**HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)**

**NEW CURRICULUM OF B.Sc. PART II**

**SESSION 2019-20**

**CHEMISTRY**

The new curriculum will comprise of three papers of 33, 33 and 34 marks each and practical work of 50 marks. The Curriculum is to be completed in 180 working days as per UGC norms and conforming to the directives of Govt. of Chhattisgarh. The theory papers are of 60 hrs. each duration and practical work of 180 hrs duration.

**Paper – I**

**INORGANIC CHEMISTRY**

**60 Hrs., Max Marks 33**

**UNIT-I**

**CHEMISTRY OF TRANSITION SERIES ELEMENTS**

Transition Elements: Position in periodic table, electronic configuration, General Characteristics, viz., atomic and ionic radii, variable oxidation states, ability to form complexes, formation of coloured ions, magnetic moment  $\mu_{so}$  (spin only) and  $\mu_{eff}$  and catalytic behaviour. General comparative treatment of 4d and 5d elements with their 3d analogues with respect to ionic radii, oxidation states and magnetic properties.

**UNIT-II**

**A. OXIDATION AND REDUCTION:** Redox potential, electrochemical series and its applications, Principles involved in extraction of the elements.

**B. COORDINATION COMPOUNDS:** Werner's theory and its experimental verification, IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. Chelates, polynuclear complexes.

**UNIT-III**

**COORDINATION CHEMISTRY**

Valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding. Crystal field theory, Crystal field splitting and stabilization energy, measurement of  $10 Dq$  ( $\Delta_o$ ), CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of  $10 Dq$  ( $\Delta_o$ ,  $\Delta_t$ ). Octahedral vs. tetrahedral coordination.

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#### UNIT-IV

##### A. CHEMISTRY OF LANTHANIDE ELEMENTS

Electronic structure, oxidation states and ionic radii and lanthanide contraction, complex formation, occurrence and isolation, lanthanide compounds.

##### B. CHEMISTRY OF ACTINIDES

General features and chemistry of actinides, chemistry of separation of Np, Pu and Am from uranium, similarities between the latter actinides and the latter lanthanides

#### UNIT-V

**A. ACIDS BASES :** Arrhenius, Bronsted-Lowry, conjugate acids and bases, relative strengths of acids and bases, the Lux-flood, Solvent system and Lewis concepts of acids and bases.

##### B. NON-AQUEOUS SOLVENTS

Physical properties of a solvent, types of solvents and their general characteristics, reaction in non-aqueous solvents with reference to liquid ammonia and liquid sulphur dioxide, HF, H<sub>2</sub>SO<sub>4</sub>, Ionic liquids.

#### REFERENCE BOOKS

1. Basic Inorganic Chemistry, F. A. Cotton, G. Wilkinson and P. L. Gaus, Wiley
2. Concise Inorganic Chemistry, J. D. Lee, ELBS
3. Concepts of Models of Inorganic Chemistry, B. Douglas, D. Mc Daniel and J. Alexander, John Wiley.
4. Inorganic Chemistry, D. E. Shriver, P. W. Atkins and C. H. Langford, Oxford.
5. Inorganic Chemistry, W. W. Porterfield, Addison – Wiley.
6. Inorganic Chemistry, A. G. Sharp, ELBS.
7. Inorganic Chemistry, G. L. Miessler and D. A. Tarr, Prentice Hall.
8. Advanced Inorganic Chemistry, Satya Prakash.
9. Advanced Inorganic Chemistry, Agarwal and Agarwal
10. Advanced Inorganic Chemistry, Puri, Sharma, S. Naginchand
11. Inorganic Chemistry, Madan, S. Chand
12. Aadhunik Akarbanic Rasayan, A. K. Shrivastav & P. C. Jain, Goel Pub
13. Uchchattar Akarbanic Rasayan, satya Prakash & G. D. Tuli, Shyamal Prakashan
14. Uchchattar Akarbanic Rasayan, Puri & Sharma
15. Selected topic in Inorganic Chemistry by Madan Malik & Tuli, S. Chand.

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UNIT-I

CHEMISTRY OF ORGANIC HALIDES

Alkyl halides: Methods of preparation, nucleophilic substitution reactions –  $S_N1$ ,  $S_N2$  and  $S_N1$  mechanisms with stereochemical aspects and effect of solvent etc.; nucleophilic substitution, elimination reactions.

Aryl halides: Preparation, including preparation from diazonium salts, Nucleophilic Aromatic Substitution;  $S_NAr$ , Benzyne mechanism. Relative reactivity of alkyl, allyl/benzyl, vinyl and aryl halides towards nucleophilic substitution reactions.

UNIT-II

ALCOHOLS

A. Alcohols: Nomenclature, preparation, properties and relative reactivity of  $1^\circ$ ,  $2^\circ$ ,  $3^\circ$  alcohols, Bouvaelt-Blanc Reduction for the preparation of alcohols, Dihydric alcohols – methods of formation, chemical reactions of vicinal glycols, oxidative cleavage  $[Pb(OAc)_4]$  and  $HIO_4$  and pinacol-pinacolone rearrangement.

B. Trihydric alcohols - Nomenclature, methods of formation, chemical reactions of glycerol.

PHENOLS

A. Structure and bonding in phenols, physical properties and acidic character, Comparative acidic strength of alcohols and phenols, acylation and carboxylation.

B. Mechanism of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Hauben-Hoesch reaction, Lederer-Manasse reaction and Reimer-Tiemann reaction.

UNIT-III

ALDEHYDES AND KETONES

A. Nomenclature, structure and reactivity of carbonyl group. General methods of preparation of aldehydes and ketones.

Mechanism of nucleophilic addition to carbonyl groups: Benzoin, Aldol, Perkin and Knoevenagel condensation. Condensation with ammonia and its derivatives, Wittig reaction, Mannich reaction, Beckmann and Benzil- Benzilic rearrangement.

B. Use of acetate as protecting group, Oxidation of aldehydes, Baeyer-Villiger oxidation of ketones, Cannizzaro reaction, MPV, Clemmensen reduction, Wolf-Kishner reaction,  $LiAlH_4$  and  $NaBH_4$  reduction. Halogenation of enolizable ketones, An introduction to  $\alpha,\beta$ -unsaturated aldehydes and ketones.

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#### UNIT-IV

##### A. CARBOXYLIC ACIDS

Preparation, Structure and bonding, Physical and chemical properties including, acidity of carboxylic acids, effects of substituents on acid strength, Hell-Volhard Zeilinsky reaction. Reduction of carboxylic groups, Mechanism of decarboxylation.

Di carboxylic acids: Methods of formation and effect of heat and dehydrating agents, Hydroxyacids.

##### B. CARBOXYLIC ACID DERIVATIVES

Structure of acid chlorides, esters, amides and acid anhydrides, Relative stability of acyl derivatives.

Physical properties, inter-conversion of acid derivatives by nucleophilic acyl substitution.

Mechanism of acid and base catalyzed esterification and hydrolysis.

#### UNIT-V

##### ORGANIC COMPOUNDS OF NITROGEN

A. Preparation of nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes. Mechanism of nucleophilic substitution in nitroarenes and their reduction in acidic, neutral and alkaline medium.

B. Reactivity, structure and nomenclature of amines, physical properties. Stereochemistry of amines. Separation of mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines. Preparation of alkyl and aryl amines (reduction of nitro compounds and nitriles), reductive amination of aldehydic and ketonic compounds. Gabriel-Phthalimide reaction, Hofmann-Bromamide reaction, Reactions of amines, electrophilic aromatic substitution of aryl amines, Reaction of amines with nitrous acid. Synthetic transformations of aryl diazonium salts, Azo coupling.

##### REFERENCE BOOKS

1. Organic Chemistry, Morrison and Boyd, Prentice-Hall.
2. Organic Chemistry, L. G. Wade Jr. Prentice Hall.
3. Fundamentals of Organic Chemistry, Solomons, John Wiley.
4. Organic Chemistry, Vol I, II, III S. M. Mukherjee, S. P. Singh and R. P. Kapoor, Wiley Easterns (New Age).
5. Organic Chemistry, F. A. Carey, McGraw Hill.
6. Introduction to Organic Chemistry, Struweiesser, Heathcock and Kosover, Macmillan.
7. Organic Chemistry, P. L. Soni.
8. Organic Chemistry, Bahl and Bahl.
9. Organic Chemistry, Joginder Singh.
10. Carbanic Rasayan, Bahl and Bahl.
11. Carbanic Rasayan, R. N. Singh, S. M. I. Gupta, M. M. Bakidia & S. K. Wadhwa.
12. Carbanic Rasayan, Joginder Singh.

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**UNIT-I**

**A. THERMODYNAMICS-I**

Intensive and extensive variables; state and path functions; isolated, closed and open systems; Zeroth law of thermodynamics. First law: Concept of heat, work, internal energy and statement of first law; enthalpy, Relation between heat capacities, calculations of  $q$ ,  $w$ ,  $U$  and  $H$  for reversible, irreversible and free expansion of gases under isothermal and adiabatic conditions. Joule-Thomson expansion, inversion temperature of gases, expansion of ideal gases under isothermal and adiabatic condition

**B. THERMO CHEMISTRY**

Thermochemistry, Laws of Thermochemistry, Heats of reactions, standard states; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, effect of temperature (Kirchhoff's equations) and pressure on enthalpy of reactions, Adiabatic flame temperature, explosion temperature.

**UNIT-II**

**A. THERMODYNAMICS-II**

Second Law of Thermodynamics: Spontaneous process, Second law, Statement of Carnot cycle and efficiency of heat engine, Carnot's theorem, thermodynamic state of temperature. Concept of entropy: Entropy change in a reversible and irreversible process, entropy change in isothermal reversible expansion of an ideal gas, entropy change in isothermal mixing of ideal gases, physical signification of entropy, Molecular and statistical interpretation of entropy.

- B.** Gibbs and Helmholtz free energy, variation of  $G$  and  $A$  with pressure, volume, temperature, Gibbs-Helmholtz equation, Maxwell relations, Elementary idea of Third law of Thermodynamics, concept of residual entropy, calculation of absolute entropy of molecule.

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### UNIT III

#### A CHEMICAL EQUILIBRIUM

Criteria of thermodynamic equilibrium, degree of advancement of reaction, chemical equilibria in ideal gases. Concept of Fugacity, Thermodynamic derivation of relation between Gibbs free energy of reaction and reaction quotient. Coupling of exergonic and endergonic reactions. Equilibrium constants and their quantitative dependence on temperature, pressure and concentration. Thermodynamic derivation of relations between the various equilibrium constants  $K_p$ ,  $K_c$  and  $K_x$ . Le Chatelier principle (quantitative treatment). Equilibrium between ideal gas and a pure condensed phase.

#### B IONIC EQUILIBRIA

Ionization of weak acids and bases, pH scale, common ion effect; dissociation constants of mono protic acids (exact treatment). Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.

### UNIT-IV

#### PHASE EQUILIBRIUM

A. Phase rule, Phase, component and degree of freedom, derivation of Gibbs phase rule, Clausius-Clapeyron equation and its applications to Solid-Liquid, Liquid-Vapor and Solid-Vapor, limitation of phase rule, applications of phase rule to one component system: Water system and sulphur system.

Application of phase rule to two component system: Pb-Ag system, desilverization of lead, Zn-Mg system, Ferric chloride-water system, congruent and incongruent melting point and eutectic point.

Three component system: Solid solution liquid pairs.

B. Nernst distribution law, Henry's law, application, solvent extraction

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## UNIT V

### PHOTOCHEMISTRY

Characteristics of electromagnetic radiation, Interaction of radiation with matter, difference between thermal and photochemical processes, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry: Grothus-Drapper law, Stark-Einstein law, quantum yield, actinometry, examples of low and high quantum yields, Photochemical equilibrium and the differential rate of photochemical reactions, Quenching, Role of photochemical reaction in biochemical process.

Jablonski diagram depicting various process occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), photosensitized reactions, energy transfer processes (simple examples), photostationary states, Chemiluminescence.

### REFERENCE BOOKS

1. Physical Chemistry, G. M. Barrow, International student edition, McGraw Hill.
2. University General Chemistry, C. N. R. Rao, Macmillan.
3. Physical Chemistry, R. A. Alberty, Wiley Eastern.
4. The elements of physical chemistry, Wiley Eastern.
5. Physical Chemistry through problems, S. K. Dogra & S. Dogra, Wiley Eastern.
6. Physical Chemistry, B. D. Khosla,.
7. Physical Chemistry, Puri & Sharma.
8. Bhautik Rasayan, Puri, Sharma and Pathania, Vishal Publishing Company.
9. Bhautik Rasayan, P. L. Soni.
10. Bhautik Rasayan, Bahl and Tuli.
11. Physical Chemistry, R. L. Kapoor, Vol I-IV .
12. Chemical kinetics, K. J. Laidler, Pearson Educations, New Delhi (2004).

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Paper –IV  
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:

$\text{CO}_3^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{S}_2\text{O}_3^{2-}$ ,  $\text{CH}_3\text{COO}^-$ ,  $\text{F}^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{NO}_3^-$ ,  $\text{BO}_3^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{PO}_4^{3-}$ ,  $\text{NH}_4^+$ ,  $\text{K}^+$ ,  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Bi}^{3+}$ ,  $\text{Sn}^{2+}$ ,  $\text{Sb}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ .

Mixtures should preferably contain one interfering anion, or insoluble component ( $\text{BaSO}_4$ ,  $\text{SrSO}_4$ ,  $\text{PbSO}_4$ ,  $\text{CaF}_2$  or  $\text{Al}_2\text{O}_3$ ) or combination of anions e.g.  $\text{CO}_3^{2-}$  and  $\text{SO}_3^{2-}$ ,  $\text{NO}_2^-$  and  $\text{NO}_3^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ , and  $\text{I}^-$ .

**Volumetric analysis**

- (a) Determination of acetic acid in commercial vinegar using NaOH.
- (b) Determination of alkali content-antacid tablet using HCl.
- (c) Estimation of calcium content in chalk as calcium oxalate by permanganometry.
- (d) Estimation of hardness of water by EDTA.
- (e) Estimation of ferrous & ferric by dichromate method.
- (f) 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:
  - (i) m-dinitrobenzene, (ii) Acetanilide, (iii) Bromo/Nitro-acetanilide, (iv) Oxidation of primary alcohols-Benzoic acid from benzylalcohol, (v) azo dye.

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## PHYSICAL CHEMISTRY

### Transition Temperature

- Determination of the transition temperature of the given substance by thermometric/dilatometric 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  $\Delta H$  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.  $\text{NaCl}$ , 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

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### Reference Books

1. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
2. Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R. Practical Organic Chemistry, 5th Ed. Pearson (2012)
3. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000). 22
4. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000).
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011). Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
6. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York

  
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B.Sc.-II

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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 R<sub>f</sub> 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.



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B.Sc.-II

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*V. Khertha*

## PHYSICS

B.Sc. Part-II

Paper-I

## 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 CO<sub>2</sub> 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,  $\gamma$  phase space and  $\mu$  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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**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, sarpgandha, ---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 Jatropa, 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, polyembryony, apomixes and parthenocarpy.

**Books Recommended:**

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Singh, Pandey, Jain. *Diversity and Systematics of Seed Plants*, Rastogi Publications Merrut

Sharma OP, *Plant Taxonomy*, Tata Mc Graw Hill, New Delhi

Pandey BP, *Taxonomy of Angiosperms*, S. Chand Publishing, New Delhi

Pandey, BP, *Plant Anatomy*, S.Chand Publishing, New Delhi

Pandey, BP, *Economic Botany*, S.Chand Publishing, New Delhi

Bhojwani, SS and Bhatanagar SP, *Embryology of Angiosperm*, Vikas Publication House, New Delhi

Singh, Pandey, Jain, *Embryology of Angiosperms*, Rastogi Publication, Meerut

Sharma, V, Alum, A. *Ethnobotany*, Rastogi Publications, Meerut

Tayal, MS *Plant Anatomy*, Rastogi Publication, Meerut

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(Dr. Rekha Pimpalgaonkar)

Proff. & Head

Govt. N PG Science College

Raipur, (C.G.)

(Dr. Ranjana Shrivastava)

Proff. & Head

Govt. VYTPG Science College

Raipur, (C.G.)

(Mrs. Sanchal Moghe)

Govt. Bilasa Girls College, Bilaspur

(Mr. Shivakant Mishra)

(Mr. Sudheer Tiwari)

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**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, 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. C<sub>3</sub>, C<sub>4</sub> 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 Abscissic 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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Singh, JS Singh SP and Gupta SR. *Ecology and Environmental Science and Conservation*, S. Chand Publishing, New Delhi

Sharma, PD. *Ecology and Environment*, Rastogi Publications, Merrut

Hopkins, WG and Huner, PA. *Introduction to Plant Physiology*, John Wiley and Sons.

Pandey SN and Sinha BK, *Plant Physiology*, Vikas Publishing, New Delhi

Taiz, L and Zeiger, E. *Plant Physiology*, 5<sup>th</sup> edition, Sinauer Associates Inc. M.A, USA

Srivastava, HS *Plant Physiology and Biotechnology*, Rastogi Publications, Meerut

### B.Sc. II (BOTANY)

#### Practical

1. Taxonomy: Detailed description and identification of locally available plants of the families as prescribed in the theory paper.
2. Economic Botany: Identification and comment 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 O<sub>2</sub> in photosynthesis, factors affecting of photosynthesis.
9. Comparison of R.Q. of different respiratory substrates.
10. Demonstration of fermentation.
11. Determination of BOD of a water body.
12. Demonstration of mitosis.

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*Ravi*  
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*Dr. P. Singh*  
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# PRACTICAL SCHEME

TIME: 4 Hrs.

M.M. : 50

1.	Anatomy	08
2.	Economic Botany	04
3.	Physiology	08
4.	Ecology	10
5.	Spotting	10
6.	Viva-Voce	05
7.	Project Work/ Field Study	10



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( Dr.Ranjana Shrivastava)

Proff. & Head

Govt. VYTPG Science College

Raipur, (C.G.)




(Mrs. Sanchal Moghe)

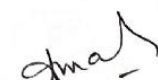
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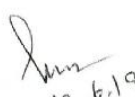



(Mr. Shivakant Mishra)

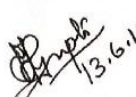
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# Hemchand Yadav Vishwavidyala, Durg (C.G.)

## Zoology

### B.Sc. Part – II (2019-20)

#### Paper – I

#### (Anatomy and Physiology)

Comparative Anatomy of various organ systems of vertebrates:

##### 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

##### 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

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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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**HEMCHAND YADAV VISHWAVIDYALAYA,  
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**SCHEME OF EXAMINATION  
&  
SYLLABUS  
of**

**B.Sc. Final Year  
Session 2021-22**



**(Approved by Board of Studies)  
Effective from July 2021**

  
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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](mailto:academic@durguniversity.ac.in)

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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।

—00—

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.  
Principal,  
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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 30/4/21

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.)  
**Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)**

## 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.



  
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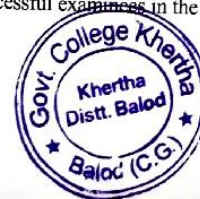
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19. Chemistry, Anthropology & Defence Studies.
20. Geology, Mathematics & Statistics.
21. Mathematics, Defence Studies & Statistics
22. Anthropology, Mathematics & Statistics
23. Chemistry, Anthropology & Applied Statistics
24. Zoology, Botany & Anthropology
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 into 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 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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- इकाई-एक** (क) भारत माता : सुमित्रानंदन पंत  
(ख) कथन की शैलियों  
1. विवरणात्मक शैली 2. मूल्यांकन शैली  
3. व्याख्यात्मक शैली 4. विचारात्मक शैली
- इकाई-दो** (क) सूरजी 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।

  
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Distt. Balod (C.G.)



 5/7/2024

डा. आशा निवान



  
डा. अरुण मरा

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 Diberaiation 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.



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**HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)**  
**NEW CURRICULUM OF B.Sc. PART III**

**SESSION 2021-22**

**CHEMISTRY**

The new curriculum will comprise of three papers of 33, 33 and 34 marks each and practical work of 50 marks. The Curriculum is to be completed in 180 working days as per UGC norms and conforming to the directives of Govt. of Chhattisgarh. The theory papers are of 60 hrs. Each duration and practical work of 180 hrs duration.

**Paper – I**  
**INORGANIC CHEMISTRY**      **60 Hrs., Max Marks 33**

**UNIT-I**

**METAL-LIGAND BONDING IN TRANSITION METAL COMPLEXES**

(A) Limitations of valence bond theory, Limitation of Crystal Field Theory, Application of CFSE, tetragonal distortions from octahedral geometry, Jahn-Teller distortion, square planar geometry. Qualitative aspect of Ligand field and MO Theory.

(B) Thermodynamic and kinetic aspects of metal complexes. A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes, Trans- effect, theories of trans effect. Mechanism of substitution reactions of square planar complexes.

**UNIT-II**

**MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES**

Types of magnetic behavior, methods of determining magnetic susceptibility, spin only formula, L-S coupling, correlation of  $\mu_{so}$  (spin only) and  $\mu_{eff}$  values, orbital contribution to magnetic moments, application of magnetic moment data for 3d metal complexes.

Electronic spectra of Transition Metal Complexes.

Types of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, spectro-chemical series. Orgel-energy level diagram for  $d^1$  and  $d^2$  states, discussion of the electronic spectrum of  $[Ti(H_2O)_6]^{3+}$  complex ion.

**UNIT-III**

**ORGANOMETALLIC CHEMISTRY**

Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18-electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.

Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT.  $\pi$ -acceptor behavior of CO (MO diagram of CO to be discussed), Zeise's salt: Preparation and structure.

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28.06.21  
(Dr. Alka Tiwari)

*Dr. C. Bose*  
28.06.2021  
(Dr. C. Bose)

*Dr. Rajmani Patel*  
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Dr. ...



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### Catalysts by Organometallic Compounds –

Study of the following industrial processes and their mechanism :

1. Alkene hydrogenation (Wilkinson's Catalyst)
2. Polymerization of ethane using Ziegler – Natta Catalyst

### UNIT-IV

#### BIOINORGANIC CHEMISTRY

Essential and trace elements in biological processes, Excess and deficiency of some trace metals, Toxicity of some metal ions (Hg, Pb, Cd and As), metalloporphyrins with special reference to hemoglobin and myoglobin. Biological role of alkali and alkaline earth metals with special reference to  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$ , nitrogen fixation.

### UNIT-V

**HARD AND SOFT ACIDS AND BASES (HSAB)** Classification of acids and bases as hard and soft. Pearson's HSAB concept, acid-base strength and hardness and softness. Symbiosis, Applications of HSAB principle.

#### INORGANIC POLYMERS

Types of inorganic polymers, comparison with organic polymers, synthesis, structural aspects and applications of silicones. Silicates, phosphazenes and polyphosphate.

#### REFERENCE BOOKS

1. Basic Inorganic Chemistry, F. A. Cotton, G. Wilkinson and P. L. Gaus, Wiley.
2. Concise Inorganic Chemistry, J. D. Lee, ELBS.
3. Concepts of Models of Inorganic Chemistry, B. Douglas, D. Mc Daniel and J. Alexander, John Wiley.
4. Inorganic Chemistry, D. E. Shriver, P. W. Atkins and C. H. Langford, Oxford.
5. Inorganic Chemistry, W. W. Porterfield, Addison – Wiley.
6. Inorganic Chemistry, A. G. Sharp, ELBS.
7. Inorganic Chemistry, G. L. Miessler and D. A. Tarr, Prentice Hall.
8. Advanced Inorganic Chemistry, Satya Prakash.
9. Advanced Inorganic Chemistry, Agarwal and Agarwal.
10. Advanced Inorganic Chemistry, Puri, Sharma, S. Naginchand.
11. Inorganic Chemistry, Madan, S. Chand.
12. Aadhunik Akarbanic Rasayan, A. K. Shrivastav & P. C. Jain, Goel Pub.
13. Uchchattar Akarbanic Rasayan, satya Prakash & G. D. Tuli, Shyamal Prakashan.
14. Uchchattar Akarbanic Rasayan, Puri & Sharma.
15. Selected topic in Inorganic Chemistry by Madan Malik & Tuli, S. Chand.



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*Anu*  
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*Lagan*  
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**UNIT-I**

**HETEROCYCLIC COMPOUNDS**

Classification and nomenclature, Structure, aromaticity in 5-membered and 6-membered rings containing one heteroatom; Synthesis, reactions and mechanism of substitution reactions of: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Indole (Fischer indole synthesis and Madelung synthesis), Quinoline and isoquinoline, (Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Doebner- Miller synthesis, Bischler-Napieralski reaction, Pictet- Spengler reaction, Pomeranz-Fritsch reaction).

**UNIT II**

**A. ORGANOMETALLIC REAGENT**

Organomagnesium compounds: Grignard reagents formation, structure and chemical reactions.

Organozinc compounds: formation and chemical reactions.

Organolithium compounds: formation and chemical reactions.

**B. ORGANIC SYNTHESIS VIA ENOLATES**

Active methylene group, alkylation of diethylmalonate and ethyl acetoacetate, Synthesis of ethyl acetoacetate: The Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate. Robinson annulations reaction.

**UNIT-III**

**BIOMOLECULES**

**A. CARBOHYDRATES**

Occurrence, classification and their biological importance. Monosaccharides: relative and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani Fischer synthesis and Ruff degradation; Disaccharides – Structural comparison of maltose, lactose and sucrose. Polysaccharides – Elementary treatment of starch and cellulose.

**B. AMINO ACIDS, PROTEINS AND NUCLEIC ACIDS**

Classification and Nomenclature of amino acids, Configuration and acid base properties of amino acids, Isoelectric Point, Peptide bonds, Protein structure, denaturation/renaturation, Constituents of nucleic acid, DNA, RNA nucleoside, nucleotides, double helical structure of DNA.

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#### UNIT-IV

##### SYNTHETIC POLYMERS

- A. Addition or chain growth polymerization, Free radical vinyl polymerization, Ziegler-Natta polymerization, Condensation or Step growth polymerization, polyesters, polyamides, phenols- formaldehyde resins, urea-formaldehyde resins, epoxy resins and polyurethanes, natural and synthetic rubbers.
- B. **SYNTHETIC DYES**  
Colour and constitution (Electronic Concept). Classification of Dyes. Chemistry of dyes. Chemistry and synthesis of Methyl Orange, Congo Red, Malachite Green, Crystal Violet, phenolphthalein, fluorescein, Alizarine and Indigo.

#### UNIT-V

- A. **INFRA-RED SPECTROSCOPY**  
Basic principle, IR absorption Band their position and intensity, IR spectra of organic compounds.
- B. **UV-VISIBLE SPECTROSCOPY**  
Beer Lambert's law, effect of Conjugation, Types of electronic transitions  $\lambda_{max}$ , Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption Visible spectrum and colour.
- C. **NMR SPECTROSCOPY**  
Basic principles of Proton Magnetic Resonance, Tetramethyl silane (TMS) as internal standard, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant (J); Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple organic compounds.  $^{13}\text{C}$ MR spectroscopy: Principle and applications.

#### REFERENCE BOOKS

1. Organic Chemistry, Morrison and Boyd, Prentice-Hall.
2. Organic Chemistry, L. G. Wade Jr. Prentice Hall.
3. Fundamentals of Organic Chemistry, Solomons, John Wiley.
4. Organic Chemistry, Vol I, II, III S. M. Mukherjee, S. P. Singh and R. P. Kapoor, Wiley Easters (New Age).
5. Organic Chemistry, F. A. Carey, McGraw Hill.
6. Introduction to Organic Chemistry, Struweiesser, Heathcock and Kosover, Macmillan.
7. Acheson, R.M. Introduction to the Chemistry of Heterocyclic compounds, John Wiley & Sons (1976).
8. Graham Solomons, T.W. Organic Chemistry, John Wiley & Sons, Inc.
9. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.
10. Kalsi, P. S. Textbook of Organic Chemistry 1st Ed., New Age International (P) Ltd. Pub.
11. Clayden, J.; Greeves, N.; Warren, S.; Wothers, P.; Organic Chemistry, Oxford University Press.

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UNIT-I

QUANTUM MECHANICS-I

Black-body radiation, Planck's radiation law, photoelectric effect, Compton effect. Operator: Hamiltonian operator, angular momentum operator, Laplacian operator, postulate of quantum mechanics, eigen values, eigen function, Schrodinger time independent wave equation, physical significance of  $\psi$  &  $\psi^2$ , application of Schrodinger wave equation to particle in a one dimensional box, hydrogen atom (separation into three equations) radial and angular wave functions.

UNIT-II

A. QUANTUM MECHANICS-II

Quantum Mechanical approach of Molecular orbital theory, basic ideas-criteria for forming M.O. and A.O., LCAO approximation, formation of  $H_2^+$  ion, calculation of energy levels from wave functions, bonding and antibonding wave functions, Concept of  $\sigma$ ,  $\sigma^*$ ,  $\pi$ ,  $\pi^*$  orbitals and their characteristics, Hybrid orbitals- $sp$ ,  $sp^2$ ,  $sp^3$  Calculation of coefficients of A.O.'s used in these hybrid orbitals.

Introduction to valence bond model of  $H_2$ , comparison of M.O. and V.B. models. Huckel theory, application of Huckel theory to ethene, propene, etc.

UNIT III

SPECTROSCOPY

**Introduction:** Characterization of Electromagnetic radiation, regions of the spectrum, representation of spectra, width and intensity of spectral transition, Rotational Spectrum of Diatomic molecules. Energy levels of a rigid rotor, selection rules, determination of bond length, qualitative description of non-rigid rotor, isotopic effect.

**Vibrational Spectroscopy:** Fundamental vibration and their symmetry vibrating diatomic molecules, Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, determination of force constant, anharmonic oscillator

**Raman spectrum:** Concept of polarizability, quantum theory of Raman spectra, stokes and antistokes lines, pure rotational and pure vibrational Raman spectra. Applications of Raman Spectra.

**Electronic Spectroscopy:** Basic principles, Electronic Spectra of diatomic molecule, Franck-Condon principle, types of electronic transition, application of electronic spectra.

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#### UNIT-IV

##### ELECTROCHEMISTRY-I

- A. Electrolytic conductance: Specific and equivalent conductance, measurement of equivalent conductance, effect of dilution on conductance, Kohlrausch law, application of Kohlrausch law in determination of dissociation constant of weak electrolyte, solubility of sparingly soluble electrolyte, absolute velocity of ions, ionic product of water, conductometric titrations.
- B. Theories of strong electrolyte: limitations of Ostwald's dilution law, weak and strong electrolytes, Elementary ideas of Debye - Huckel - Onsager's equation for strong electrolytes, relaxation and electrophoretic effects.
- C. Migration of ions: Transport number, Determination by Hittorf method and moving boundary method, ionic strength.

#### UNIT-V

##### ELECTROCHEMISTRY-II

- A. Electrochemical cell and Galvanic cells – reversible and irreversible cells, conventional representation of electrochemical cells, EMF of the cell and effect of temperature on EMF of the cell, Nernst equation Calculation of  $\Delta G$ ,  $\Delta H$  and  $\Delta S$  for cell reactions.
- B. Single electrode potential : standard hydrogen electrode, calomel electrode, quinhydrone electrode, redox electrodes, electrochemical series
- C. Concentration cell with and without transport, liquid - junction potential, application of concentration cells in determining of valency of ions, solubility product and activity coefficient
- D. Corrosion-types, theories and prevention

##### REFERENCE BOOKS

1. Physical chemistry, G.M.Barrow. International Student Edition McGraw Hill.
2. University General Chemistry, CNR Rao, Macmillan.
3. Physical Chemistry R.A.Alberty, Wiley Eastn.
4. The elements of Physical Chemistry P.W.Alkin,Oxford.
5. Physical Chemistry through problems, S.K.Dogra, Wiley Eastern.
6. Physical Chemistry B.D.Khosla.
7. Physical Chemistry, Puri & Sharma.
8. Bhoutic Rasayan, Puri & Sharma.
9. Bhoutic Rasayan, P.L.Soni.
10. Bhoutic Rasayan, Bahl & Tuli.
11. Physical Chemistry, R.L.Kapoor, Vol- I-IV.
12. Introduction to quantum chemistry, A.K.Chandra, Tata McGraw Hill.
13. Quantum Chemistry, Ira N.Levine, Prentice Hall.



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**INORGANIC CHEMISTRY**

Gravimetric analysis:

- Estimation of nickel (II) using Dimethylglyoxime (DMG).
- Estimation of copper as  $\text{CuSCN}$
- Estimation of iron as  $\text{Fe}_2\text{O}_3$  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  $\text{BaSO}_4$

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 ( $\beta$ -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 ( $\beta$ -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.

Alumina  
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(Dr. Aika Tiwari)

Boose  
28.06.2021  
(Dr. C. Boose)

Boose  
28.06.2021  
(Dr. Rajmani Patel)

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28.06.2021  
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- 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 solid 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,  $\text{NaHCO}_3$ ,  $\text{NaOH}$  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  $\text{pK}_a$  of monobasic acid



*Amrinder*  
28.06.21  
(Dr. Anika Tinsani)

*Pooja*  
28.06.2021  
(Dr. C. Pooja)

*Rajmani*  
28.06.2021  
(Dr. Rajmani Patel)

*Arjun*  
28.06.2021

*Lagna*  
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#### UV/Visible 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  $\text{KMnO}_4$  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  $\text{KMnO}_4$  and  $\text{K}_2\text{Cr}_2\text{O}_7$  (in 0.1 M  $\text{H}_2\text{SO}_4$ ) and determine  $\lambda_{\text{max}}$  values.

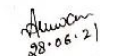
**Note:** Experiments may be added/deleted subject to availability of time and facilities

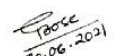
#### REFERENCE BOOKS:

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.

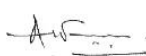
  
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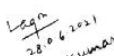


  
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28.06.2021  
(Dr. C. C. Bose)

  
28.06.2021  
(Dr. Rajmani Patel)

  
28.6.2021

  
28.06.2021  
Jagrit Kumar



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.**

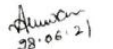
5. Viva Voce

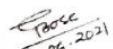
**10 marks.**

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.


  
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(Dr. C. Bose)

  
28.06.2021  
(Dr. Rajmani Patel)

  
28.6.2021

  
28.06.2021  
Jagjit Kumar

## Session 2021-22

### PHYSICS

#### OBJECTIVES OF THE COURSE

The undergraduate training in physics is aimed at providing the necessary inputs so as to set forth the task of bringing about new and innovative ideas/concepts so that the formulated model curricula in physics becomes in tune with the changing scenario and incorporate new and rapid advancements and multi-disciplinary skills, societal relevance, global interface, self-sustaining and supportive learning.

It is desired that undergraduate i.e. B.Sc. level besides grasping the basic concepts of physics should in addition have broader vision. Therefore, they should be exposed to societal interface of physics and role of physics in the development of technologies.


#### EXAMINATION SCHEME:

1. There shall be 2 theory papers of 3 hours duration each and one practical paper of 4 hours duration. Each paper shall carry 50 marks.
2. Numerical problems of at least 30% will compulsorily be asked in each theory paper.
3. In practical paper, each student has to perform two experiments one from each groups as listed in the list of experiments.
4. Practical examination will be of 4 hours duration- one experiment to be completed in 2 hours.

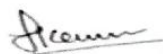
The distribution practical marks as follows:

Experiment	: 15+15=30
Viva voce	: 10
Internal assessment	: 10

5. The external examiner should ensure that at least 16 experiments are in working order at the time of examination and submit a certificate to this effect.

  
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DOKHU RAM SARKAR







**B.SC.-III**

**PAPER- I (BOTANY)**

**(ANALYTICAL TECHNOLOGY PLANT PATHOLOGY, EXPERIMENTAL  
EMBRYOLOGY, ELEMENTARY BIOSTATISTICS, ENVIRONMENTAL  
POLLUTION AND CONSERVATION)**

**UNIT-I**

Structure, Principle and applications of analytical instrumentation.

Chromatography technique, Oven, Incubator, Autoclave, Centrifuge, Spectrophotometere

**UNIT-II**

Plant Tissue culture techniques, growth media, totipotency, protoplast culture, somatic hybrids and cybrids, micropropagation, somaclonal variations, haploid culture.

Analytical techniques: Microscopy-Light microscope, Electron microscope

**UNIT-III**

General principles of plant pathology, general symptoms of fungal, bacterial and viral diseases, mode of infection] diseases resistance and control measures, plant quarantine. A study of epidemiology and etiology of following plant diseases.

Rust diseases of wheat, Tikka diseases of ground nut, Red rot of sugar cane, Bacterial blight of rice, yellow vein mosaic of brinjal, Little Leaf of brinjal.

**UNIT-IV**

Introduction to pollution, green house gases, Ozone depletion, Dissolved oxygen, B.O.D., C.O.D.

Bio magnification, Eutrophication, Acid precipitation, Phytoremediation. Plant indicators, Biogeographical Zones of India, Concept of Biodiversity, CBD, MAB, National parks and biodiversity Hot spots, Conservation strategies, Red Data Book, IUCN threat categories, invasive species, endemic species. concept of sustainable development.

**UNIT-V**

**ELEMENTARY BIOSTATISTICS:**

Introduction and application of Biostatistics, measure of central tendency-Mean, Median, Mode, measures of dispersal-Standard deviation, standard error.

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**Books Recommended:**

Singh, RS, **Plant Diseases**, Oxford & IBH, New Delhi.

Pandey, BP, **Plant Pathology**, S. Chand Publishing, New Delhi

Sharma, PD, **Microbiology and Plant pathology**, Rastogi Publications, Meerut

Sharma PD, **Mycology and Phytopathology**, Rastogi Publications, Meerut

Singh JS, Singh SP and Gupta, SR, **Ecology Environmental Science and Conservation**, S. Chand Publishing, New Delhi

Sharma, PD. **Ecology and Environment**, Rastogi Publications, Meerut

Bhojwani, SS and Razdan, MK, **Plant Tissue Culture: Theory and Practices**, Elsevier

Sharma AK, **Text book of Biostatistics**, Discovery Publishing House Pvt.Ltd.



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Govt. College, Khertha  
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**B.SC.-III**  
**PAPER- II (BOTANY)**  
**(GENETICS, MOLECULAR BIOLOGY, BIOTECHNOLOGY AND**  
**BIOCHEMISTRY)**

**UNIT-I**

Cell and cell organelles, organization and morphology of chromosomes, giant chromosomes, cell division, Mendel's laws, gene interactions, linkage and crossing over, chromosomal aberration, polyploidy, sex linked inheritance, sex determination, cytoplasmic inheritance, gene concept: cistron muton, recon.

**UNIT- II**

Nucleic acids, Structure and forms of DNA and RNA, DNA/RNA as genetic material, replication of DNA, biochemical and molecular basis of mutation, genetic code and its properties, mechanism of transcription and translation in prokaryotes, regulation of gene expression, Operon model.

**UNIT- III**

Recombinant DNA, Enzymes in recombinant DNA technology, cloning vectors (Plasmid, Bacteriophages, Cosmids, Phagemids), gene cloning, PCR, Application of Biotechnology; G.M.Plants, Monoclonal antibodies, DNA finger printing

**UNIT- IV**


Protein: Chemical composition, primary, secondary and tertiary structure of Proteins.

Carbohydrate: general account of monosaccharides, disaccharids and Polsaccharides

Fat: Structure and properties of fats and fatty acids, synthesis and breakdown.

**UNIT- V**

ENZYMES: Nomenclature and classifaction, components of enzymes, theories of enzyme action, enzyme kinetics (Michaelis-Menten constant), allosteric enzymes, isozymes, Abzymes. Ribozymes, factors affecting enzyme activity.

  
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**Books Recommended:**

Nelson, DL, Cox, MM, Lehninger Principles of Biochemistry, W.H. Freeman and Company, New York, USA.

Cooper, GM, The Cell: A Molecular Approach, ASM Press & Sunderland, Washington, D.C. Sinauer Associates, MA.

Singh BD, Fundamental of Genetics, Kalyani Publication

Singh BD, Genetics, Kalyani Publication

Gupta, PK, Cell and Molecular Biology, Rastogi Publications, Meerut

Singh, BD, Biotechnology: Expanding Horizons, Kalyani Publications

Gupta, PK, Elements of Plant Biotechnology, Rastogi Publications, Meerut

Gupta, SN, concepts of Biochemistry, Rastogi Publications, Meerut

Jain, JL, Jain S, Jain, N, Fundamentals of Biochemistry, S Chand Publishing, New Delhi

**B.Sc.- III (Botany)****Practical**

1. Study of host parasite relationship of plant diseases listed above.
2. Demonstration of preparation of Czapek's Dox medium and potato dextrose agar medium, sterilization of culture medium and pouring.
3. Inoculation in culture tubes and petriplates.
4. Gram Staining.
5. Microscopic examination of Curd.
6. Study of plant diseases as listed in the theory paper.
7. Biochemical test of carbohydrate and protein.
8. Instrumentation techniques

**PRACTICAL SCHEME****TIME: 4 Hrs.****M.M.: 50**

1. Plant Disease/Symptoms
2. Instrumentation techniques
3. Staining of Microbes
4. Tissue Culture techniques
5. Spotting
6. Project Work/ Field Study
7. Viva-Voce
8. Sessional

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# Hemchand Yadav Vishwavidyala, Durg (C.G.)

## Zoology

B.Sc. Part III (2021-22)

### Paper-I

#### ECOLOGY, ENVIRONMENTAL BIOLOGY: TOXICOLOGY, MICROBIOLOGY AND MEDICAL ZOOLOGY

##### Unit: I (Ecology)

- Aims and scopes of ecology
- Major ecosystems of the world-Brief introduction
- Population- Characteristics and regulation of densities
- Communities and ecosystem
- Bio-geo chemical cycles
- Air & water pollution
- Ecological succession

##### Unit: II (Environmental Biology)

- Laws of limiting factor
- Food chain in fresh water ecosystem
- Energy flow in ecosystem- Trophic levels
- Conservation of natural resources
- Environmental impact assessment

##### Unit: III (Toxicology)

- Definition and classification of Toxicants
- Basic Concept of toxicology
- Principal of systematic toxicology
- Heavy metal Toxicity (Arsenic, Murcury, Lead, Cadmium)
- Animal poisons- snake venom, scorpion & bee poisoning
- Food poisoning

##### Unit: IV (Microbiology)

- General and applied microbiology
- Microbiology of domestic water and sewage
- Microbiology of milk & milk products
- Industrial microbiology: fermentation process, production of penicillin, alcoholic beverages, bioleaching.

##### Unit: V (Medical Zoology)

- Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes, AIDS and Typhoid
- Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment
- Pathogenic protozoan's- Entamoeba, Trypanosome & Plasmodium
- Pathogenic helminthes- Schistosoma
- Nematode pathogenic parasites of man
- Vector insects

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Dr. Anil Kumar

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Usha Thakur

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Usha Thakur

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(Prashant Kumar Varde)

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Sankar Kumar

**Zoology**  
**B.Sc. Part III (2021-22)**  
**Paper II**

**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND BIOTECHNIQUES**

**Unit: I (Genetics)**

- Linkage & linkage maps, Sex Determination and Sex Linkage
- Gene interaction- Incomplete dominance & Codominance, Supplementary gene, Complementary gene, Epistasis Lethal gene, Pleiotropic gene and multiple alleles.
- Mutation: Gene and chromosomal mutation
- Human genetics: chromosomal alteration: Down, Edward, Patau, Turner and Klinefelter Syndrome Single gene disorders: Alkaptonuria, Phenylketonuria, Sickle cell anemia, albinism and colour blindness

**Unit: II (Cell Physiology)**

- General idea about pH & buffer
- Transport across membrane: Diffusion and Osmosis
- Active transport in mitochondria & endoplasmic reticulum
- Enzymes-classification and Action

**Unit: III (Biochemistry)**

- Amino acids & peptides- Basic structure & biological function
- Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cose-cycle
- Lipid metabolism- Oxidation of glycerol; Oxidation of fatty acids
- Protein Catabolism- Deamination, transamination, transmethylation


**Unit: IV (Biotechnology)**

- Application of Biotechnology
- Recombinant DNA & Gene cloning
- Cloned genes & other tools of biotechnology (Tissue culture, Hybridoma, Transgenic Animals and Gene library)

**Unit: V (Biotechniques)**

1. Principles & techniques about the following:

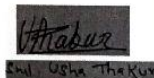
- (i) pH meter
- (ii) Colorimeter
- (iii) Microscopy- Light microscopes: Compound, Phase contrast & Electron microscopes
- (iv) Centrifuge
- (v) Separation of biomolecules by chromatography & electrophoresis

  
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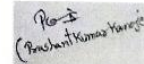


  
Dr. Anil Kumar

  
Dr. Nitin Kumar

  
Dr. Usha Thakur

  
Dr. Anil Kumar

  
(Prasanta Kumar Barik)

  
Dr. Sanjay Kumar



## B. Sc. Part III (2021-22)

### Zoology Practical

The practical work in general shall be based on syllabus prescribed in theory.


The candidates will be required to show knowledge of the following:

- Estimation of population density, percentage frequency, relative density.
- Analysis of producers and consumers in grassland.
- Detection of gram-negative and gram-positive bacteria.
- Blood group detection (A,B,AB,O)
- R. B. C. and W.B.C count
- Blood coagulation time
- Preparation of hematin crystals from blood of rat
- Observation of Drosophila, wild and mutant.
- Chromatography-Paper or gel.
- Colorimetric estimation of Protein.
- Mitosis in onion root tip.
- Biochemical detection of Carbohydrate, Protein and Lipid.
- Study of permanent slides of parasites, based on theory paper.
- Working principles of pH meter, colorimeter, centrifuge and microscope.

#### Scheme of marks distribution

Time: 3:30hrs

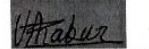
• Hematological Experiment	08
• Ecological Experiment: Grassland Ecosystem/ Population Density/Frequency/relative density	06
• Bacterial staining	05
• Biochemical experiment	06
• Practical based on Instrumentation (Chromatography/ pH meter/microscope/centrifuge.	05
• Spotting (5 spots)	10
7 Viva	05
8. Sessional	05

  
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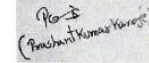


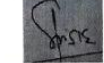
  
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Shri Usha Thakur

  
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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](mailto:academic@durguniversity.ac.in)

वेब साइट : [www.durguniversity.ac.in](http://www.durguniversity.ac.in)

दूरभाष : 0788-2359400

क्र. 1460 / अका. / 2019

दुर्ग, दिनांक 04/07/2019

प्रति,

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।

—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।



  
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Distt. Balod (C.G.)

कुलसचिव

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B.A. Part-1



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**REVISED ORDINANCE NO. 11**  
**(As per State U.G.C. Scheme)**  
**BACHELOR OF ARTS**

1. The three year course has 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, C.G. or any other examination recognized by the University or C.G. Board of Secondary Education as equivalent there to, has attended 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 recognized by the University as equivalent there to has attended 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-college students who have appeared at the examination shall be eligible for admission to other examination as per provisions of Ordinance N. 6 relating to Examinations (General). Provided that non-college students who have appeared at the examination 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 A - Hindi Language  
(ii) Group B - English Language  
B Three course subjects: One subject from any three group out of the following six groups:  
1 Sociology / Ancient Indian History/Anthropology  
2 Political Science/Home Science / Drawing & Painting / Vocational Course.  
3 Hindi Literature/ Sanskrit Literature/Urdu Literature/Mathematics.  
4 Economics/Music/Defense Studies/Linguistics/ Urdu;  
5 Philosophy/Psychology/ Geography/ Education/Management.  
6 History/English Literature/Statistics.  
7 Practicals (If Necessary) for each core subject.

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- 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 subject 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 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 the theory and practical part so 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 mark so obtained in the subject in which he appeared at the supplementary examination.
- 10 Successful examinee 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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# SCHEME OF EXAMINATION

Subject		Paper	Max. Marks	Min. Marks
i)	Environmental Studies		75	33
	Field Work		25	
A. Foundation Course				
i)	Hindi Language - I		75	26
ii)	English Language - II		75	26
B. Three Core Subject :				
1.	Hindi Literature	I	75	50
		II	75	
2.	Sanskrit Literature	I	75	50
		II	75	
3.	English Literature	I	75	50
		II	75	
4.	Philosophy	I	75	50
		II	75	
5.	Economics	I	75	50
		II	75	
6.	Political Science	I	75	50
		II	75	
7.	History	I	75	50
		II	75	
8.	Ancient Indian History	I	75	50
		II	75	
9.	Culture & Archaeology	I	75	50
		II	75	
10.	Geography	I	50	33
		II	50	
11.	Mathematics	Practical	50	17
		I	50	
		II	50	50
		III	50	
12.	Statistics	I	50	33
		II	50	
		Practical	50	17

B.A. Part-1



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Subject	Paper	Max. Marks	Min. Marks
13. Anthropology	I	50	33
	II	50	
	Practical	50	
14. Linguistics	I	75	50
	II	75	
	Practical	50	
15. Music	I	50	33
	II	50	
	Practical	50	
16. Home Science	I	50	33
	II	50	
	Practical	50	
17. Education	I	75	50
	II	75	
	Practical	50	
18. Psychology	I	50	33
	II	50	
	Practical	50	
19. Management	I	75	50
	II	75	
	Practical	50	
20. Defence Studies	I	50	33
	II	50	
	Practical	50	
21. Urdu	I	75	50
	II	75	
	Practical	50	
22. Dance	I	50	33
	II	50	
	Practical	50	



*[Signature]*  
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## Part - I

### SYLLABUS FORENVIRONMENTAL STUDIES AND HUMAN RIGHTS

(Papercode-0828)

MM. 75

इन्वारमेंटल साईसे 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 अंकक्षेत्रीय 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।



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## 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 an 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 options
- 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.



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### 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, 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.



  
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#### 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- International Law and Human Rights
3. एस.के. कपूर -मानव अधिकार
4. जे.एन. पान्देय - 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)
9. Bruinner R.C. 1989, Hazardous Waste Incineration. McGraw Hill Inc. 480p
10. Clark R.S. Marine pollution, Clanderson press Oxford (TB)
11. Cuningham, W.P. Cooper. T.H. Gorhani, E & Hepworth. M.T, 200
12. Dr. A.K.- Environmental Chemistry. Wiley Eastern Ltd.
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. m473p.
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, 639
19. Mhadkar A.K. Matter Hazardous, Techno-Science publication (TB)
20. Miller T.G. Jr. Environment Science, Wadsworth publication co. (TB)
21. Odum E.P. 1971, Fundamentals of Ecology, W.B. Saunders Co. USA, 574p
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 Hindu (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 I and 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 499p



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।



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**पाठ्यक्रम संशोधन का औचित्य :-**

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



  
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## 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.

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 place; 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.

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1. Part-1

*Dr. M. C. Chakraborty*

*Dr. S. G. ...*

*DR. MERILY RO*

R

संशोधित पाठ्यक्रम

बी. ए. भाग-1

हिन्दी साहित्य

प्रथम- प्रश्न पत्र

(प्राचीन हिन्दी काव्य)

पूर्णांक 75

(पेपर कोड- 0103)

उद्देश्य एवं प्रस्तावना-

प्राचीन से तात्पर्य है- आधुनिक काल से पूर्व का काल। सही अर्थ में हिन्दी भाषा और साहित्य का विकास आदिकाल से शुरू होता है। इसमें धार्मिक तथा ऐतिहासिक दो प्रकार का साहित्य मिलता है, जो प्रबंध, मुक्तक, रासो, फागु, चरित, सुभाषित आदि विविध काव्यरूपों में अभिव्यंजित है। मध्यकालीन साहित्य की पृष्ठभूमि के रूप में इसे प्रतिष्ठापित किया जाता है।

मध्यकालीन काव्य में भक्तिकाव्य, जहां लोक जागरण को स्वर देने वाला है, वहीं शैतिकाल अपने लौकिक- श्रृंगारिका, परिदृश्य में तत्कालीन सामाजिक, सांस्कृतिक, राजनीतिक स्थितियों को बेलौस अभिव्यंजित करता है। अतः भाषा, संस्कृति, विचार, मानवता, काव्यरूपता, लौकिकता- पारलौकिकता, आदि दृष्टियों से इसका अध्ययन अत्यावश्यक है।

पाठ्य विषय-

1. कबीर (कबीर- कातिकुमार जैन, प्रारंभिक 50 साखियाँ)
  2. जायसी- (संक्षिप्त पद्यावत- श्यामसुंदर दास, नागमती वियोग वर्णन)
  3. सूर (भ्रमर गीत सार- सं. आचार्य रामचन्द्र शुक्ल, प्रारंभिक 25 पद)
  4. तुलसी - "रामचरित मानस" के सुंदरकाण्ड से प्रारंभिक 30 दोहे चौपाई छंद साहित्य
  5. घनानन्द (घनानन्द- सं. विश्वनाथ प्रसाद मिश्र, प्रारंभिक 25 छंद)
- द्रुत पाठ हेतु निम्नांकित तीन कवियों का अध्ययन किया जावेगा- जिसमें से किन्हीं दो पर लघुउत्तरीय प्रश्न पूछे जायेंगे-

1. विद्यापति
2. रहीम
3. रसखान

अंक विभाजन-

1. व्याख्याएँ (3) - 21 अंक
2. आलोचनात्मक प्रश्न (2) - 24 अंक
3. लघुउत्तरीय प्रश्न (5) - 15 अंक
4. वस्तुनिष्ठ प्रश्न (15) - 15 अंक



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Distt. Balod (C.G.)

संशोधित  
बी. ए. भाग-1  
हिन्दी साहित्य  
द्वितीय- प्रश्न पत्र  
हिन्दी कथा साहित्य  
(पेपर कोड- 0104)

पूर्णांक 75

उद्देश्य एवं प्रस्तावना-

गद्य की प्रमुख विधाओं का इतना द्रुत विकास इनकी लोकप्रियता का प्रमाण प्रस्तुत करता है। इसमें आधुनिक जीवन, अपनी विविध कमियों के साथ यथार्थ रूप में अभिव्यंजित हुआ है। जीवन की अनुभूतियाँ, संवेदनाओं तथा विविध परिस्थितियों के साक्षात्कार के लिए इनका अध्ययन सर्वथा अपेक्षित है।

पाठ्य विषय-

व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक उपन्यास एवं आठ कहानीकारों की एक- एक प्रतिनिधि कहानी का अध्ययन आवश्यक है।

उपन्यास	1. प्रेमचंद	- गबन
कहानी	1. प्रेमचंद	- कफन
	2. जयशंकर प्रसाद	- आकाश दीप
	3. यशपाल	- परदा
	4. फणीश्वननाथ रेणु	- ठेस
	5. मोहन राकेश	- मलबे का मालिक
	6. भीष्म साहनी	- चीफ की दावत
	7. गुलशेर खॉं शानी	- जली हुई रस्सी
	8. रांगेय राघव	- गदल

द्रुत पाठ के लिए निम्नांकित तीन कथाकारों का अध्ययन अपेक्षित है, जिनमें से किन्हीं दो पर लघुउत्तरीय प्रश्न पूछे जावेंगे-

1. उपेन्द्रनाथ अश्व, 2. बाल शौरि रेड्डी 3. शिवानी

अंक विभाजन- व्याख्या (3)	21 अंक
आलोचनात्मक प्रश्न (2)	24 अंक
लघुउत्तरीय प्रश्न (5)	15 अंक
वस्तुनिष्ठ प्रश्न (15)	15 अंक

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# Syllabus of Geography

(B.A./B. Sc. I Year)



Session

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Distt. Balod (C.G.)

2019-2020  
2020-2021

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27.5.19  
(Dr. S. K. Das)

*[Signature]*  
27.5.19  
A. S. Das

*[Signature]*  
27.5.19  
DR. R. Sharma

V.S. 27/05/19

## Brief Summary

### 3 Year Integrated UG Courses (B.A./ B.Sc.) in Geography

#### B.A. /B.Sc. Part I

The B.A. /B.Sc. Part-I Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

- Paper - I      Physical Geography
- Paper - II     Human Geography.
- Paper - III    Practical Geography

#### B.A. /B.Sc. Part-II

The B.A./B.Sc. Part-II Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

- Paper-I       Economic and Resources Geography
- Paper-II      Regional Geography of India
- Paper-III     Practical Geography

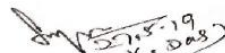
#### B.A. /B.Sc. Part III

The B.A. /B.Sc. Part III Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows


- Paper – I      Remote Sensing and GIS
- Paper - II     Geography of Chhattisgarh
- Paper - III    Practical Geography

  
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(Dr. S. K. Das)  
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DR. R. Chaudhary

VS  
27/05/19

**B.A. /B.Sc. Part I**

**PAPER - I  
PHYSICAL GEOGRAPHY**

**Max. Marks: 50**

**(Paper Code-0117)**

- Unit I** The Nature and Scope of Physical Geography. Origin of the Earth, Geological Time Scale, Earth's Interior, Continental Drift Theory (Wegner), Plate Tectonics, Isostasy.
- Unit II** Earth movements: Earthquakes and Volcanoes. Rocks, Weathering, Erosion, and Normal cycle of erosion, Evaluation of landscapes- Fluvial, Arid, Glacial, Karts and Coastal landscape.
- Unit III** Elements of Weather and Climate, Composition and Structure of the Atmosphere. World patterns of Atmospheric Temperature, Pressure, and Wind.
- Unit IV** Atmospheric Moisture, and Disturbances, Climatic Classification (Koppen and Thornthwait ) types, characteristics and World patterns.
- Unit V** Surface relief of Pacific Ocean, Atlantic Ocean, and Indian Ocean. Distribution of Temperature and Salinity of oceans and seas, Currents and Tides, Ocean Deposits and Coral Reefs, and Oceanic Resources.

**Books Recommended:**

1. Barry, R. G. and Chorley, R. J. (1998): Atmosphere, Weather and Climate. Routledge, London.
2. Bryant, H. Richard (2001): Physical Geography Made Simple, Rupa and Company. New Delhi
3. Bunnett, R.B. (2003): Physical Geography in Diagrams, Fourth GCSE edition, Pearson Education (Singapore) Private Ltd.
4. Garrison, T. (1998): Oceanography, Wordsworth Company., Belmont.
5. Lake, P. (1979): Physical Geography (English and Hindi editions), Cambridge University Press, Cambridge.
6. Lal, D.S. 1993 : Climatology, 3rd edition, Chaitanya Pub. House, New Delhi
7. Leong Goh Cheng (2003): Certificate Physical and Human Geography, Oxford University Press, New Delhi.
8. Monkhouse, F.J. (1979): Physical Geography. Methuen, London
9. Singh, S. (2003): Physical Geography. (English and Hindi editions.). Prayag Pustak Bhawan, Allahabad;
10. Trewartha, G.T., Robinson, A.H., Hammond, E.H., and Horn, A.T. (1976/1990): Fundamentals of Physical Geography, 3rd edition. MacGraw-Hill, New York.
11. Singh, M.B. (2001): *Bhoutik Bhugol*, Tara Book Agency, Varanasi
12. Strahler, A.N. and Stahler, A.M. (1992): Modern Physical Geography. John Wiley and Sons, New York.

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**B.A. /B.Sc. Part I**

**PAPER - II**

**HUMAN GEOGRAPHY**

**Max. Marks: 50**

**(Paper Code-0118)**

- Unit I** Definition and Scope of Human Geography. Man - environment relationship; Determinism, Possibilism, and Probabilism; Human Development Index (HDI).
- Unit II** Classification of Human Races – their Characteristics and Distribution; Human adaptation to environment; Eskimos, Bushman, Pigmy, Gond, Masai, and Naga.
- Unit III** Growth, Density and Distribution of World Population and factors influencing Spatial distribution; Over, Under, and Optimum Population; Migration of Population.
- Unit IV** Settlements – Urban Settlements: Urbanization, Evolution and Classification, Trends of Urbanization.  
Rural settlements: Characteristics, Types and Regional Pattern, Rural Houses in India - Types, Classification and Regional Pattern.
- Unit V** Issues – Global Warming, Climate Change, Deforestation, Desertification, Air, Water and Soil Pollution.

**Books Recommended:**

1. Chisholm, M. (1985): Human Geography, 2nd edition, Penguin Books, London.
2. De Blij, H.J. (1996): Human Geography: Culture, Society and Space, 2nd edition. John Wiley and Sons, New York.
3. Fellman, J. D., Arthur, G., Judith, G., Hopkins, J. and Dan, S. (2007): Human Geography: Landscapes of Human Activities. McGraw-Hill, New York. 10<sup>th</sup> edition.
4. Haggett, P. (2004): Geography: A Modern Synthesis. 8th edition, Harper and Row, New York.
5. Huggett, R. J. (1998): Fundamentals of Biogeography, Routledge, London.
6. Hussain, M. (1994): Human Geography, Rawat Publications, Jaipur.
7. Johnston, R. J., Gregory, D., Pratt, G. and Watts, M. (2009): The Dictionary of Human Geography. 5th edition, Basil Blackwell Publishers, Oxford.
8. Kaushik, S.D. and Sharma, A.K. (1996): Principles of Human Geography (in Hindi), Rastogi Publication, Meerut.
9. Norton, W. (2008): Human Geography, Oxford University Press, New York. 5<sup>th</sup> ed.
10. Saxena, H. M. (2000): Environmental Management. Rawat Publications, Jaipur and New Delhi.
11. Singh, K. N. and Singh, J. (2001): *Manav Bhugol*. Gyanodaya Prakashan, Gorakhpur. 2<sup>nd</sup> edition.
12. Singh, L.R. (2005): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad
13. Smith, D. M. (1977): Human Geography- A Welfare Approach, Edward Arnold (Publishers) Ltd., London
14. Stoddard, R.H., Wishart, D.J. and Blouet, B.W. (1986): Human Geography. Prentice-Hall, Englewood Cliffs, New Jersey.

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**B.A. /B.Sc. Part I**  
**PAPER - III**  
**PRACTICAL GEOGRAPHY**  
**Max. Marks: 50**

**SECTION A**

**CARTOGRAPHY AND STATISTICAL METHODS**

(M.M. 25)

**Unit I** Scale: Statement Scale, Representative Fraction (R.F.), Linear scale – Simple, Diagonal, Comparative, and Time Scales.

**Unit II** Contour: Methods of showing relief; Hachures, Contours; Representation of different landforms by contours.

**Unit III** Graph and Diagram: Line graph, Bar Diagram (Simple and Compound), Circle Diagram, Pie Diagram

**Unit IV** Statistical Technique: Mean, Median and Mode

**SECTION B**

**SURVEYING -**

(M.M. 15)

**Unit V** Chain and Tape Survey. Triangulation method, Open Traverse and Closed Traverse

**PRACTICAL RECORD AND VIVA VOCE**

(M.M. 10)

**Books Recommended:**

1. Davis, R.E. and Foote, F.S. (1953): Surveying, 4<sup>th</sup> 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. 5<sup>th</sup> edition.
7. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
8. Sharma, J. P. (2001): *Prayogik Bhugol*, Rastogi Publication, Meerut 3<sup>rd</sup> 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.

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बी.ए./बी.एस.सी. – प्रथम वर्ष  
प्रश्न पत्र-प्रथम  
भौतिक भूगोल

अधिकतम अंक : 50

(कोड क्रमांक 0117)

- इकाई –1.** भौतिक भूगोल की प्रकृति एवं विषय क्षेत्र, पृथ्वी की उत्पत्ति, भूगर्भिक समय मापनी, पृथ्वी की आंतरिक संरचना, वेगनर का महाद्वीपीय प्रवाह सिद्धांत, पट्ट विवर्तन, भूसंतुलन ।
- इकाई –2.** पृथ्वी की हलचल-भूकंप, ज्वालामुखी, चट्टान अपक्षय, अपरदन, सामान्य अपरदन चक्र, वायु, हिम बहता जल, भूमिगत जल और सागरीय जल से निर्मित भूदृश्य ।
- इकाई –3.** मौसम और जलवायु के तत्त्व, वायुमंडल की संरचना एवं संघटन, वायुमंडलीय ताप, दाब तथा हवाएं ।
- इकाई –4.** वायुमंडलीय आर्द्रता विक्षोभ, जलवायु वर्गीकरण कोपेन और थार्नथ्वेट के आधार पर वैश्विक जलवायु की विशेषताएँ और विश्व प्रतिरूप ।
- इकाई –5.** महासागरीय उच्चावच प्रशांत महासागर, आंध्रमहासागर एवं हिन्द महासागर । सामुद्रिक तापमान लवणता जलधाराएँ एवं, ज्वारभाटा, सामुद्रिक निक्षेप एवं प्रवाल भित्ती, सामुद्रिक संसाधन ।

**Books Recommended:**

1. Barry, R. G. and Chorley, R. J. (1998): Atmosphere, Weather and Climate. Routledge, London.
2. Bryant, H. Richard (2001): Physical Geography Made Simple, Rupa and Company. New Delhi
3. Bunnett, R.B. (2003): Physical Geography in Diagrams, Fourth GCSE edition, Pearson Education (Singapore) Private Ltd.
4. Garrison, T. (1998): Oceanography, Wordsworth Company., Belmont.
5. Lake, P. (1979): Physical Geography (English and Hindi editions), Cambridge University Press, Cambridge.
6. Lal, D.S. 1993: Climatology, 3rd edition, Chaitanya Pub. House, New Delhi
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DR. R. Sharma

बी.ए./बी.एस.सी. - प्रथम वर्ष  
प्रश्न पत्र-द्वितीय  
मानव भूगोल

अधिकतम अंक : 50

(कोड क्रमांक 0118)

- इकाई -1.** मानव भूगोल की परिभाषा एवं विषय क्षेत्र मानव वातावरण संबंध, निश्चयवाद, संभववाद  
प्रसम्भववाद, मानव विकास सूचकांक ।
- इकाई -2.** मानव प्रजाति उद्भव प्रकार विशेषताएँ एवं वितरण, मानव द्वारा वातावरण से अनुकूलन एस्किमो, बुशमेन,  
पिग्मी, गोंड, मसाई, और नागा ।
- इकाई -3.** वैश्विक जनसंख्या- वृद्धि, घनत्व, जनसंख्या के वितरण को प्रभावित करने वाले स्थानिक कारक,  
जनाधिक्य, न्यूनतम जनसंख्या और अनुकूलतम आदर्श जनसंख्या, जनसंख्या एवं प्रवास ।
- इकाई -4.** अधिवास- नगरीय अधिवास: नगरीयकरण उद्भव, प्रकार एवं नगरीकरण के प्रतिरूप ।  
ग्रामीण अधिवास : विशेषताएँ, प्रकार और क्षेत्रीय प्रतिरूप, भारत में ग्रामीण अधिवास, प्रकार, वर्गीकरण  
और क्षेत्रीय प्रतिरूप ।
- इकाई -5.** उभरते पर्यावरणीय मुद्दे- ग्लोबल वार्मिंग, जलवायु परिवर्तन निर्वनिकरण, मरुस्थलीकरण प्रदूषण -  
जल, वायु और मृदा प्रदूषण ।

**Books Recommended:**

1. Chisholm, M. (1985): Human Geography, 2nd edition, Penguin Books, London.
2. De Blij, H.J. (1996): Human Geography: Culture, Society and Space, 2nd edition. John Wiley and Sons, New York,
3. Fellman, J. D., Arthur, G., Judith, G., Hopkins, J. and Dan, S. (2007): Human Geography: Landscapes of Human Activities. McGraw-Hill, New York. 10<sup>th</sup> edition.
4. Haggett, P. (2004): Geography: A Modern Synthesis. 8th edition, Harper and Row, New York.
5. Huggett, R. J. (1998): Fundamentals of Biogeography, Routledge, London.
6. Hussain, M. (1994): Human Geography, Rawat Publications, Jaipur.
7. Johnston, R. J., Gregory, D., Pratt, G. and Watts, M. (2009): The Dictionary of Human Geography. 5th edition, Basil Blackwell Publishers, Oxford.
8. Kaushik, S.D. and Sharma, A.K. (1996): Principles of Human Geography (in Hindi), Rastogi Publication, Meerut.
9. Norton, W. (2008): Human Geography, Oxford University Press, New York. 5<sup>th</sup> ed.
10. Saxena, H. M. (2000): Environmental Management. Rawat Publications, Jaipur and New Delhi.
11. Singh, K. N. and Singh, J. (2001): *Manav Bhugol*. Gyanodaya Prakashan, Gorakhpur. 2<sup>nd</sup> edition.
12. Singh, L.R. (2005): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad
13. Smith, D. M. (1977): Human Geography- A Welfare Approach, Edward Arnold (Publishers) Ltd., London
14. Stoddard, R.H., Wishart, D.J. and Blouet, B.W. (1986): Human Geography. Prentice-Hall, Englewood Cliffs, New Jersey.

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भाग- अ मानचित्र तकनीक एवं सांख्यिकी विधियां (25)

इकाई -1 मपनी- कथनात्मक मापन, प्रतिनिधि भिन्न सामान्य शैखिक मापनी विकर्ण तुलनात्मक एवं समय मापनी.

इकाई -2 उच्चावच प्रदर्शन की विधियां - हैशयूर समोच्च रेखा, तथा विविध स्थलाकृतियों की प्रदर्शन.

इकाई -3 शैखिक 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, 4<sup>th</sup> 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. 5<sup>th</sup> edition.
7. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
8. Sharma, J. P. (2001): *Prayogik Bhugol*, Rastogi Publication, Meerut 3<sup>rd</sup> 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.

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*Dr. R. Sharma*  
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**Revised syllabus**  
**SOCIOLOGY**      2019 - 2020

**B.A. PART-I**

**Paper - I**

**INTRODUCTION TO SOCIOLOGY (Paper Code - 0115)**

- UNIT-I **Sociology** : Meaning, Nature, scope, Subject matter and significance.  
**Basic concepts** : Society, Community, institution, Association, group, Status and role.
- UNIT-II **Social Institutions**: Marriage, Family and kinship.  
**Culture and society**: Culture, socialization, The individual and society, social control, norms and values.
- UNIT-III **Social Stratification**: Meaning, forms and theories.  
**Social Mobility**: Meaning, forms and theories.
- UNIT-IV **Social change**: Meaning and patterns, types, factors, evolution and progress.
- UNIT-V **Social System and process**: Social System- meaning, characteristics and elements.  
Social process- Meaning, elements, characteristics and types.

**ESSENTIAL READINGS :-**

- 1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
- 2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
- 3 Jayram, N., Introductory Sociology, Madras Maomillan India 1988.
- 4 Johnson Harry, M., Sociology of systematic Introduction New Delhi Allied Publishers 1995.

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**Revised syllabus**  
**SOCIOLOGY -2019-2020**

**B.A. PART-I**

**Paper -II**

**CONTEMPORARY INDIAN SOCIETY (Paper Code-0116)**

- UNIT-I Classical View about Indian Society:** Verna, Asharam, Karma, Dharma and Purusharth.
- UNIT-II The Structure and composition of Indian society.**  
**Structure ;** Village , Towns, Cities and Rural – Urban Linkage,  
**Compositions:** Tribes, Dalits, Women and Minorities.
- UNIT-III Basic Institutions of Indian Society:**  
Caste system, Joint Family, Marriage and Changing dimensions.
- UNIT-IV Familial Problems:**  
Dowry, Domestic violence, Divorce, Intra-intergenerational conflict, problem of elderly.
- UNIT-V Social Problems:**  
Surrogate Motherhood, Live in Relationship, Regionalism, Communalism, Corruption, Youth unrest.

**ESSENTIAL READINGS :-**

- 1 Dube, S. C. 1995. Society in India, New Delhi: National Book Trust.
- 2 Mandelbaum, D.G. 1970. Society in India, Bombay: Poular Prakashan.
- 3 Shrinivas, M.N. 1973. Social Change in Modern India, California: University of California Press.
- 4 Shrinivas, M.N. 1990. Social Change Structure, New Delhi: Hindustan Publishing Corporation.
- 5 Uberoi Patricia, 1993. Family and Marriage In India, New Delhi: Oxford University Press.

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बी. ए. भाग एक B.A. Part I

राजनीति विज्ञान Political Science

प्रथम प्रश्न पत्र : राजनीतिक सिद्धान्त Paper I : Political Theory

- इकाई 1 : राजनीति विज्ञान का अर्थ, परिभाषा ( आधुनिक अवधारणा सहित ) । राजनीति एक विशिष्ट मानवीय व्यवहार के रूप में । शक्ति, सत्ता, प्रभाव : अर्थ, विशेषताएं, प्रकार । राजनीति विज्ञान की अध्ययन पद्धतियां : परम्परागत एवं व्यवहारवाद एवं उत्तर व्यवहारवाद ।
- Unit 1 : Meaning and Definition of Political Science ( with modern concept ). Politics as a specific human behaviour. Power, Authority and Influence : meaning, features and kinds. Method of Study to Political Science : Traditional , Behaviouralism and Post Behaviouralism.
- इकाई 2 : राज्य एवं उसके आवश्यक तत्व । राज्योत्पत्ति के विभिन्न सिद्धान्त, मार्क्सवादी सिद्धान्त । सावयविक सिद्धान्त ।
- Unit 2 : State and its essential elements. Various theories of the origin of the State, Marxist theory . Organismic Theory.
- इकाई 3 : सम्प्रभुता एवं उसकी बहुलवादी आलोचना । अधिकार: अर्थ, प्रकार , सिद्धान्त । कर्तव्य । स्वतन्त्रता : अर्थ , प्रकार, संरक्षण । समानता : अर्थ , प्रकार एवं स्वतन्त्रता से सम्बंध । प्रजातन्त्र : परिभाषा, व्यापक अर्थ, चुनौतियां, सफलता के लिए आवश्यक शर्तें , गुण-दोष । प्रत्यक्ष प्रजातन्त्र ।
- Unit 3: Sovereignty and its pluralistic criticism. Rights : meaning, kinds and theories. Duties. Liberty : meaning, kinds , safeguards. Equality : meaning, kinds and relations with Liberty. Democracy : meaning, comprehensive meaning, challenges, conditions for its success, merits and demerits. Direct Democracy.
- इकाई 4 : शासन के प्रकार : एकात्मक व संघात्मक , संसदीय व अध्यक्षीय, निरंकुशतन्त्र । शासन के अंग : कार्यपालिका, व्यवस्थापिका, न्यायपालिका । शक्ति पृथक्करण का सिद्धान्त व नियंत्रण -संतुलन का सिद्धान्त । संविधान : अर्थ , प्रकार । प्रतिनिधित्व के सिद्धान्त एवं निर्वाचन प्रणालियां ।
- Unit 4 : Kinds of Government : Unitary and Federal, Parliamentary and Presidential. Dictatorship. Organs of Government : Executive, Legislature and Judiciary. Theory of Separation of Powers and Checks and Balances. Constitution : meaning and kinds. Theories of representation and Electoral Process.
- इकाई 5 : लोककल्याणकारी राज्य । दल पद्धति : अर्थ , प्रकार, पद्धति । दबाव समूह : अर्थ, प्रकार, तकनीक । सामाजिक परिवर्तन : अर्थ, विशेषताएं , सिद्धान्त । नारीवाद, राष्ट्रवाद ।
- Unit 5 : Public Welfare State. Party System : meaning , kinds , process. Pressure Groups : meaning, kinds and technique. Social Change : meaning, characteristics, theories. Feminis. Nationalism.

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बी.ए. प्रथम  
प्रथम प्रश्न पत्र

राजनीतिक सिद्धान्त

1. ओ.पी. गाबा, समकालीन राजनीतिक सिद्धांत, मयूर पेपर बैक्स नोएडा।
2. ओ.पी. गाबा, राजनीति सिद्धांत की रूपरेखा, मयूर पेपर बैक्स नोएडा।
3. जे.सी. जौहरी व सीमा जौहरी, आधुनिक राजनीति विज्ञान के सिद्धांत, स्टर्लिंग पब्लिकेशन।
4. पंत गुप्ता जैन, राजनीति शास्त्र के आधार, सेन्ट्रल पब्लिकेशिंग हाऊस इलाहाबाद।
5. प्रो. आनंद प्रकाश अवस्थी, भारतीय शासन एवं राजनीति, लक्ष्मीनारायण अग्रवाल, आगरा।
6. Andrew Haywood Political Theory, An Introduction.
7. O.P. Gaba An Introduction to Political Theory, Macmillan India Ltd.



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बी. ए. भाग एक B. A. Part I

राजनीति विज्ञान Political Science

द्वितीय प्रश्न पत्र : भारतीय शासन एवं राजनीति Paper II : Indian Government and Politics

- इकाई 1 : भारतीय राष्ट्रीय आन्दोलन : 1858 का प्रथम स्वतन्त्रता संग्राम, असहयोग आन्दोलन, सविनय अवज्ञा आन्दोलन, भारत छोड़ो आन्दोलन । भारत का संविधानिक विकास : 1858, 1909, 1919 और 1935 का भारत शासन अधिनियम ।
- Unit 1 : Indian National Movement : First Independence Movement 1858, Non cooperation Movement, Civil Disobedience Movement and Quit India Movement. Constitutional Development of India : Govt. of India Act of 1858, 1909, 1919 and 1935.
- इकाई 2 : भारतीय संविधान : विशेषताएं , प्रस्तावना, स्रोत, । संघीय व्यवस्था , मौलिक अधिकार, मूल कर्तव्य, नीति निर्देशक तत्व । संविधान संशोधन प्रक्रिया ।
- Unit 2 : Constitution of India : Characteristics, Preamble, Sources. Federal System. Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.
- इकाई 3 : संघीय कार्यपालिका : राष्ट्रपति, उपराष्ट्रपति, मन्त्रिपरिषद् और प्रधानमन्त्री । संघीय व्यवस्थापिका : संसद : लोकसभा और राज्यसभा । संसदीय प्रक्रिया ।
- Unit 3 : Union Executive : President , Vice President, Council of Ministers and Prime Minister. Union Legislature : Parliament: Lok Sabha and Rajya Sabha. Parliamentary Procedure.
- इकाई 4 : संघीय न्यायपालिका : सर्वोच्च न्यायालय : गठन, क्षेत्राधिकार, न्यायिक पुनरावलोकन, न्यायिक सक्रियतावाद । राज्य कार्यपालिका : राज्यपाल , मन्त्रिपरिषद् और मुख्यमन्त्री ।
- Unit 4 : Union Judiciary : Supreme Court : Organisation, Jurisdiction, Judicial Review, Judicial Activism. State Executive : Governor, Council of Ministers and Chief Minister.
- इकाई 5 : राज्य व्यवस्थापिका : विधानसभा एवं विधानपरिषद् । निर्वाचन आयोग व चुनाव सुधार । राष्ट्रीय व क्षेत्रीय दल । भारतीय राजनीति के प्रमुख मुद्दे : जाति, धर्म, भाषा और क्षेत्र । पंचायती राज व्यवस्था ।
- Unit 5 : State Legislature : Legislative Assembly and Legislative Council. Election Commission and Election Reforms. National and Regional Parties. Major issues of Indian Politics : Caste, Religion, Language and Region. Panchayati Raj System.

संदर्भ पुस्तक (Reference Books)

8. डॉ. सुभाष कश्यप, भारत का संवैधानिक विकास और संविधान, हिन्दी माध्यम कार्यान्वयन निदेशालय दिल्ली विश्वविद्यालय ।
- डॉ. सुभाष कश्यप, हमारी संसद, भारत की संसद एक परिचय, राष्ट्रीय पुस्तक न्यास ।
10. डॉ. रूपा मंगलानी, भारतीय शासन एवं राजनीति, राजस्थान हिन्दी ग्रंथ अकादमी जयपुर ।
- 11- M.V. Pylee , Constitutional History of India , S.Chand.
- 12- D.D. Basu Indian Constitution

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## हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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दूरभाष : 0788-2359400

क्र. 2960/A / अका. / 2020

दुर्ग, दिनांक 10/9/2020

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।

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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 हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।



सह. कुलसचिव (अका.)  
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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 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.


B.A. Part-2

  
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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.

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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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SCHEME OF EXAMINATION			
Subject	Paper	Max. Marks	Min. Marks
i) Environmental Studies		75	
Fild Work		25	33
A. Foundation Course			
i) Hindi Language - I		75	26
ii) English Language - II		75	26
B. Three Core Subject :			
1. Hindi Literature	I	75	
	II	75	50
2. Sanskrit Literature	I	75	
	II	75	50
3. English Literature	I	75	
			50
	II	75	
4. Philosophy	I	75	
			50
	II	75	
5. Economics	I	75	
			50
	II	75	
6. Political Science	I	75	
	II	75	50
7. History	I	75	
	II	75	50
8. Ancient Indian History	I	75	
Culture & Archaeology	II	75	50
9. Sociology	I	75	
	II	75	50
10. Geography	I	50	
			33
	II	50	
	Practical	50	17
11. Mathematics	I	50	
	II	50	50
	III	50	
12. Statistics	I	50	
	II	50	33
	Practical	50	17
13. Anthropology	I	50	
			33
	II	50	
	Practical	50	17

B.A. Part-2



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14. Linguistics	I	75	50
	II	75	
15. Indian Music	I	50	33
	II	50	
	Practical	50	17
16. Home Science	I	50	33
	II	50	
	Practical	50	17
17. Education	I	75	50
	II	75	
18. Psychology	I	50	33
	II	50	
	Practical	50	17
19. Management	I	75	50
	II	75	
20. Defence Studies	I	50	33
	II	50	
	Practical	50	17
21. Urdu	I	75	50
	II	75	
22. Dance	I	50	33
	II	50	
	Practical	50	17
23. Vocational Course	I	50	33
	II	50	
	Practical	50	17

#### USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 examination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986-

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the university or examination centres.
3. Calculators with, memory and following variables be permitted +, -, x, , square, reciprocal, exponentials log, square root, trigonometric functions, wize, sine, cosine, tangent etc. factiorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.



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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 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, 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 (कमश '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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**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 सके तथा व्याकरणिक 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।



*[Signature]*  
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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.

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प्रथम प्रश्न पत्र

अर्वाचीन हिन्दी काव्य (पेपर कोड- 0173)

पूर्णांक- 75

प्रस्तावना- आधुनिक काव्य आधुनिकता की समस्त विशेषताओं को समेटे हुए है। स्वतंत्रता प्राप्ति के पूर्व की भाव- भाषा, शिल्प, अन्तर्वस्तु सम्बन्धी समस्त विकास धारा यहाँ सजीव रूप में देखी जा सकती है। इसे अनदेखा करना मनुष्य की विकास यात्रा को नजर अंदाज करना है। इस यात्रा के साक्षात्कार के लिए आधुनिक काव्य का अध्ययन अपेक्षित ही नहीं अपितु अनिवार्य है।

पाठ्य विषय-

- |                               |   |
|-------------------------------|---|
| 1. मैथिलीशरण गुप्त            | - भारत- भारती की कविताएँ  |
| 2. सूर्यकान्त त्रिपाठी निराला | - (1) सखि बसन्त आया।<br>(2) वर दे, वीणा वादिनी वर दे।<br>(3) हिन्दी के सुगनों के प्रति पत्र।<br>(4) तोड़ती- पत्थर।<br>(5) राजे ने अपनी रखवाली की। |
| 3. सुमित्रानंदन पंत           | - (1) बादल।<br>(2) परिवर्तन 2 पद (1. खोलता इधर जन्मलोचन<br>2. आज का दुख कल का आल्हाद)<br>(3) ताज।<br>(4) झंझा में नीम।<br>(5) भारत माता।          |
| 4. माखन लाल चतुर्वेदी         | - (1) बलि पंथी से।<br>(2) सौँझ और ढोलक की थापें।<br>(3) मैं बेच रही हूँ दही।<br>(4) उलाहना।<br>(5) निः शस्त्र सेनानी।                             |
| 5. स. ही. वात्स्यायन अज्ञेय   | - (1) सबेरे उठा तो धूप खिली थी।<br>(2) साम्राज्य का नैवेद्य दान।<br>(3) घर।<br>(4) चांदनी जी लो।<br>(5) दूर्वांचल।                                |

द्रुतपाठ हेतु निम्न कवियों का अध्ययन किया जाएगा, जिन पर लघुउत्तरीय प्रश्न पूछे जायेंगे-

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11/02/2019  
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हिन्दी निबंध तथा अन्य गद्य विधाएँ (पैपर कोड- 0174)

पूर्णांक- 75

पाठ्य विषय-

व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक नाटक, पांच प्रतिनिधि निबंध और पाँच एकांकी का निर्धारण किया गया है।

नाटक- अंधेरी नगरी- भारतेन्दु हरिश्चन्द्र

निबंध-	1. क्रोध	- आचार्य रामचन्द्र शुक्ल।
	2. वसन्त	- डॉ. हजारी प्रसाद द्विवेदी।
	3. उस अमराई ने राम- राम कही है	- डॉ. विद्यानिवास मिश्र।
	4. काव्येषु नाट्यम् रम्यम्	- बाबू गुलाब राय।
	5. बेईमानी की परत	- हरिशंकर परसाई
एकांकी-	1. औरंगजेब की आखिरी रात	- डॉ. रामकुमार वर्मा
	2. स्ट्राईक	- भुनेश्वर
	3. एक दिन	- लक्ष्मीनारायण मिश्र
	4. दस हजार	- उदयशंकर भट्ट
	5. मम्मी ठकुराईन	- डॉ. लक्ष्मीनारायण लाल

दुत पाठ के लिए तीन गद्यकारों का अध्ययन किया जायेगा, जिन पर लघुउत्तरीय प्रश्न पूछे जायेंगे।

1. राहुल सांकृत्यायन 2. महादेवी वर्मा 3. हबीब तनवीर

अंक विभाजन- व्याख्याएं (3)	- 21 अंक
आलोचनात्मक प्रश्न (2)	- 24 अंक
लघुउत्तरीय प्रश्न (5)	- 15 अंक
वस्तुनिष्ठ (15)	- 15 अंक
कुल अंक	75 अंक

इकाई विभाजन-

इकाई- 1 व्याख्या

इकाई- 2 अंधेरी नगरी एवं क्रोध, वसन्त, उस अमराई ने राम- राम कही हैं।

इकाई- 3 औरंगजेब की आखिरी रात, स्ट्राईक, एक दिन, दस हजार, मम्मी ठकुराईन

इकाई- 4 दुतपाठ के गद्यकार- राहुल सांकृत्यायन, महादेवी वर्मा, हबीब तनवीर।

इकाई- 5 वस्तुनिष्ठ (समग्र पाठ्य विषय से)

*Devi*  
Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)



*R. K. Singh*  
11/10/08  
*At*

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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 आवरण ।  
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 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 : एकात्मनववाद ।
- 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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पुस्तक

क्र	पुस्तक का नाम	लेखक का नाम
1.	राजनीतिक चिन्तन की रूपरेखा	ओ.पी. गावा
2.	राजनीतिक चिन्तन का इतिहास	जीवन मेहता
3.	राजनीतिक चिन्तन का इतिहास	बी.एल. फाडिया
4.	पाश्चात्य एवं आधुनिक राजनीतिक चिन्तन का इतिहास	प्रभु दत्त शर्मा
5.	पाश्चात्य राजनीतिक चिन्तन	जे.पी. सूद
6.	भारतीय राजनीतिक चिन्तन	वी.पी. वर्मा
7.	भारतीय राजनातिक चिन्तन	अवस्था एव अवस्था
8.	भारतीय राजनातिक चिन्तन	आ.पी. गावा
9.	पालाटकल थाट	सा.एल. बपर
10.	हस्ट्रा आफ पालाटकल थयरा	जाज एच सबाइन
11.	रिसन्ट पालाटकल थाट	फ्रान्सस डब्लू काकर
12.	मास्टर आफ पालाटकल थाट	माइकल बा. फास्टर
13.	ग्रंट पालाटकल थाट	वाटयम इवस्टान

Reference:-

- W.A. Dunning: **A History of Political Theories**, (Vols. I, II & III), New York: Mcmillan, 1930
- G.H. Sabine: **A History of Political Theory** (English & Hindi), New Delhi: Oxford & IBH Publishing Co., 1963
- C.L. Wayper: **Political Thought** (English & Hindi), Bombay: B.I. Publications Pvt. Ltd., 1974
- E. Barker: **Greek Political Theory: Plato and His Predecessors**, London: Methuen & Co. Ltd., 1918
- **Political Thought in England**, London: Thornton Butterworth Ltd., 1928
- Gettell: **History of Political Thought** (English & Hindi)
- K.P. Jaiswal: **Hindu Polity** (English & Hindi), Bangalore: Bangalore Printing & Publishing Co., 1955
- V.P. Verma: **Modern Social and Political Thought of India**, Agra: L.N. Agrawal Educational Publishers, 1961
- N.C. Bandopadhyaya: **Development of Hindu Polity and Political Theory**, New Delhi: Munshiram & Manoharlal, 1980
- Arvind Sharma, **Modern Hindu Thought: The Essential Texts**, New Delhi: OUP, 2002
- John Dunn, **Western Political Theory in the Face of the Future**, New York: Cambridge University Press, 1993
- Jonathan Wolff, **An Introduction to Political Philosophy**, Revised Edition, Oxford: OUP, 2006
- J.E. Parsons Jr., **Essays in Political Philosophy**, Washington D.C., University Press of America, 1982
- Mark N. Hagopian, **Ideals and Ideologies of Modern Politics**, New York & London: Longman, 1985
- John Elster (Ed.) **Karl Marx: A Reader**, New York: OUP, 1977
- Thomas Sowell, **Marxism: Philosophy and Economics**, New York: Quill, 1985
- Brian R. Nelson, **Western Political Thought**, Delhi NCR: Pearson Education Ltd., 1996
- Vishwanath Mishra, **Rajavidya evam Rajanitikashashtra**, Sagar: Vishwavidyalaya Prakashan, 2007
- Brian R. Nelson, **Western Political Thought**, Delhi NCR: Pearson Education Ltd., 1996

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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, Salient 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 : Salient 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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बी.ए. द्वितीय वर्ष  
द्वितीय प्रश्न पत्र  
तुलनात्मक शासन एवं राजनीति

संदर्भ पुस्तक

क्र	पुस्तक का नाम	लेखक का नाम
1.	तुलनात्मक राजनीति एवं राजनीतिक संस्थाएं	सी बी गेना
2.	तुलनात्मक राजनीति	जे.सी. जौहरी
3.	तुलनात्मक राजनीति	पी.डी. शर्मा
4.	तुलनात्मक राजनीति	एस.आर. महेष्चरी
5.	तुलनात्मक राजनीति संस्थाएं और प्रक्रियाएं	तपन बिस्वाल
6.	कम्परेटीव गर्वनेमेंट	एस.ई. फाईनर

**Reference :-**

- Anup Chand Kapur, K.K. Mishra **Select Constitutions** (U.K., U.S.A., France, Canada, Switzerland, Japan, China, India), S. Chand & Company Ltd., New Delhi, 2001.
- B.C. Rai, **The World Constitution: A Comparative Study** (U.S.A., U.K., Soviet Union, Switzerland, Japan, France, Australia, Canada, India, Pakistan), Prakashan Kendra, Lucknow, 2001
- G. Almond et.al., **Comparative Politics Today : A World View**, 7<sup>th</sup> Edition, New York/London, Harper Collins, 2000
- R. Hague & M. Harrop, **Comparative Government and Politics: An Introduction**, 5<sup>th</sup> Edition, New York, Palgrave, 2001
- A Bobler and J. Seroka (eds.); **Contemporary Political System: Classification and Typologies**, Boulder Colorado, Lynne Rienner Publishers, 1990.
- Richa Sakma, **Russian Politics and Society**, London: Routledge, 1996.
- Anuradha Chenoy, **The Making of New Russia**, New Delhi, Har-Anand Publications, 2000
- Shashi Kant Jha & Bhaswati Sarkar (eds.) **Amidst Turbulence & Hope, Transition Russia and Eastern Europe**, New Delhi, 2002
- Thomas F. Remington, **The Russian Parliament: Institutional Evolution in a Transitional Regime**, 1989-1999, Yale University Press, 2002
- Gabriel A. Almond and G. Bingham Powell (eds.) **Comparative Politics Today: A World view**, Harper Collins Publishers, 2002
- **The Russian Constitution**, Text as adopted in 1993
- J. C. Johri, 'New Comparative Government', Lotus Press Publisher, 2008.
- Vidya Bhushan and Vishnu Bhagwan, **World Constitutions**, New Delhi



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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.
- 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.
- 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, Culcutta.
- 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.I, 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.

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Shankar  
10.06.2019

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**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.

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# Syllabus of Geography

(B.A./B. Sc. II Year)

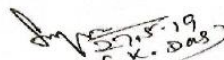
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(Dr. S. K. Das)

  
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DR. R. Sharma

## Brief Summary

### 3 Year Integrated UG Courses (B.A./ B.Sc.) in Geography

#### B.A. /B.Sc. Part I

The B.A. /B.Sc. Part-I Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

Paper - I	Physical Geography
Paper - II	Human Geography.
Paper - III	Practical Geography

#### B.A. /B.Sc. Part-II

The B.A./B.Sc. Part-II Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

Paper-I	Economic and Resources Geography
Paper-II	Regional Geography of India
Paper-III	Practical Geography

#### B.A. /B.Sc. Part III

The B.A. /B.Sc. Part III Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows

Paper - I	Remote Sensing and GIS
Paper - II	Geography of Chhattisgarh
Paper - III	Practical Geography

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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.
- Unit V** Conservation of resources; evolution of the concept, principles, philosophy, and approach to conservation, resources conservation and practices. Policy making and sustainable development.

**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 Chattoraj, 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.

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**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.

**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: Bhougolik 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, 7<sup>th</sup> 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.

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**B.A. /B.Sc. Part II**  
**PAPER - III**  
**PRACTICAL GEOGRAPHY**  
**Max. Marks: 50**

**SECTION A**

**MAP INTERPRETATION, PROJECTIONS AND STATISTICAL METHODS** (M.M. 25)

- Unit I** Distribution Maps: Dot Map, Choropleth Map and Isopleth Map.  
**Unit II** Map Projections: Definition and classification; Conical, Zenithal, 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. 10)

**Books Recommended:**

1. Alvi, Z. 1995 : Statistical Geography: Methods and Applications, Rawat Pub. New Delhi.
2. Davis, R.E. and Foote, F.S. (1953): Surveying, 4<sup>th</sup> edition, McGraw Hill Publication, New York
3. Kanetkar, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Vol I and II V.G. Prakashan, Poona.
4. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai.
5. Pal, S.K. 1999 : Statistics for Geoscientists, Concept publishing Company, New Delhi
6. Punmia, B.C. (1994): Surveying, Vol I, Laxmi Publications Private Ltd, New Delhi.
7. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5<sup>th</sup> edition
8. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
9. Sharma, J. P. (2001): *Prayogik Bhugol*, Rastogi Publication, Meerut 3<sup>rd</sup> edition.
10. Silk, J. 1979 : Statistical techniques in Geography, George Allen and Unwin, London
11. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi.
12. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
13. Venkatramiah, C. (1997): A Text Book of Surveying, Universities Press, Hyderabad.

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बी.ए./बी.एस.सी. -द्वितीय वर्ष  
प्रश्न पत्र-प्रथम  
आर्थिक एवं संसाधन भूगोल

(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 बाक्साईट; शक्ति संसाधन कोयला, पेट्रोलियम एवं जल विद्युत; संसाधन संरक्षण ; प्रमुख फसले: गेहूँ, चावल, गन्ना, एवं चाय ।
- इकाई-3 : विश्व के कृषि प्रदेश (विटलसी 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. R. Chakraborty  
27.5.19

Dr. R. Chakraborty  
27.5.19



Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)



बी.ए./बी.एस.सी. द्वितीय वर्ष  
प्रश्न पत्र- द्वितीय  
भारत का भूगोल

(कोड क्रमांक 0188)

अधिकतम अंक: 50

- इकाई -1** भौगोलिक स्वरूप - संरचना, उच्चावच जलवायु, भू-आकृतिक प्रदेश, अपवाह, जलवायु-मानसून की उत्पत्ति एवं विकास प्रक्रिया तथा पादेशिक एवं मौसमी विविधता।
- इकाई -2** प्राकृतिक संसाधन - मिट्टियाँ, प्रकार, वितरण एवं विशेषताएँ, जल संसाधन, सिंचाई और बहुउद्देशीय परियोजनाएँ, वन-प्रकार, वितरण आर्थिक महत्व एवं संरक्षण। खनिज एवं शक्ति के संसाधन - लौह अयस्क, मैंगनीज, तांबा, कोयला, पेट्रोलियम और प्राकृतिक गैस, गैर पारंपरिक उर्जा, (सौर उर्जा, पवन उर्जा ज्वारीय उर्जा, भूतापीय उर्जा)।
- इकाई -3** सांस्कृतिक तत्व, जनसंख्या वृद्धि, घनत्व और वितरण, कृषि प्रमुख खाद्य फसलें, हरित क्रांति का प्रभाव, कृषि प्रदेश।
- इकाई -4** उद्योग-स्थानीकरण, औद्योगिक विकास और उत्पादन - लौहा और इस्पात उद्योग, सूती वस्त्र उद्योग, सीमेंट, चीनी, यातायात और व्यापार, औद्योगिक प्रदेश।
- इकाई -5** भारत के निम्न प्रदेशों का विस्तृत अध्ययन कश्मीर घाटी, उत्तर पूर्वी प्रदेश, छोटा नागपुर का पठार, थार मरुस्थल भारत के द्वीप समूह।

**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, 7<sup>th</sup> 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



27.5.19  
DR. R. Sharma

Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)

खण्ड-अ. मानचित्र की व्याख्या, प्रक्षेप और सांख्यिकीय विधियाँ ।

(25 अंक)

- इकाई -1 मानचित्र - बिन्दु विधि, छाया विधि, सममान रेखा मानचित्र (मानचित्र निर्माण)  
इकाई -2 प्रक्षेप - परिभाषा एवं प्रकार शंकवाकार, खमध्य बेलनाकार प्रक्षेप.  
इकाई -3 मौसम मानचित्र की व्याख्या एवं मौसम संबंधी उपकरणों का उपयोग.  
इकाई -4 सांख्यिकीय विधियाँ - विचलन- चतुर्थांक माध्य विचलन, मानक विचलन, चतुर्थक विचलन, सापेक्षिक परिवर्तनशीलता, प्रसरण गुणक ।

खण्ड-ब. सर्वेक्षण

(15 अंक)

इकाई -5 प्रिज्मीय सर्वेक्षण- पूर्णवृत्त दिक्मान, समानीत दिक्मान एवं प्रिज्मीय कम्पास सर्वेक्षण की विधियाँ ।

प्रायोगिक पुस्तिका और मौखिक परीक्षा

(10 अंक)

**Books Recommended:**

1. Alvi, Z. 1995 : Statistical Geography: Methods and Applications, Rawat Pub. New Delhi: .
2. Davis, R.E. and Foote, F.S. (1953): Surveying, 4<sup>th</sup> edition, McGraw Hill Publication, New York
3. Kanetker, T.P. and Kulkarni, S.V.(1967): Surveying and Levelling, Vol I and II V.G. Prakashan, Poona.
4. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai.
5. Pal, S.K. 1999 : Statistics for Geoscientists, Concept publishing Company, New Delhi
6. Punmia, B.C.(1994): Surveying, Vol I, Laxmi Publications Private Ltd, New Delhi.
7. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5<sup>th</sup> edition
8. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
9. Sharma, J. P. (2001): *Prayogik Bhugol.*, Rastogi Publication, Meerut 3<sup>rd</sup> edition.
10. Silk, J. 1979 : Statistical techniques in Geography, George Allen and Unwin, London
11. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi..
12. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
13. Venkatramaiah, C. (1997): A Text Book of Surveying, Universities Press, Hyderabad.

27.5.19  
(Dr. S.K. Das)

27.5.19



27.5.19  
DR. Rishabh

Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)

B.A-(C.III)



## हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

रायपुर नाका दुर्ग (छ.ग.)-491001

ई मेल : [academic@durguniversity.ac.in](mailto:academic@durguniversity.ac.in)

वेब साइट : [www.durguniversity.ac.in](http://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।

—00—

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.  
Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)

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 30/4/21

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.)  
**Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)**



**HEMCHAND YADAV VISHWAVIDYALAYA,  
DURG (C.G.)**

Website - [www.durguniversity.ac.in](http://www.durguniversity.ac.in), Email - [durguniversity@gmail.com](mailto:durguniversity@gmail.com)



**SCHEME OF EXAMINATION  
&  
SYLLABUS  
of**

**B.A. Final Year  
Session 2021-22**



**(Approved by Board of Studies)  
Effective from July 2021**

  
**Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)**


**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.

B.A. Part-3

  
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Govt. College, Khertha  
Distt. Balod (C.G.)**



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.

  
**Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)**



**SCHEME OF EXAMINATION**

Subject	Paper	Max. Marks	Min. Marks
<b>A. Compulsory Subject - Foundation Course :</b>			
Hindi Language	I	75	26
English Language	I	75	26
<b>B. Three Core Subject :</b>			
1. Hindi Literature	I	75	
	II	75	150
2. Sanskrit Literature	I	75	
	II	75	150
3. English Literature	I	75	
	II	75	150
4. Philosophy	I	75	
	II	75	150
5. Economics	I	75	
	II	75	150
6. Political Science	I	75	
	II	75	150
7. History	I	75	
	II	75	150
8. Ancient Indian History Culture & Archaeology	I	50	
	II	50	100
		Practical	50
9. Sociology	I	75	
	II	75	150
10. Geography	I	50	
	II	50	100
		Practical	50
11. Mathematics	I	50	
	II	50	150
	III	50	
12. Statistics	I	50	
	II	50	100
		Practical	50



*Duni*  
**Principal,  
Govt. College, Khertha  
Distt. Balod (C.G.)**



	Subject	Paper		Max. Marks	Min. Marks
13.	Anthropology	I	50	100	33
		II	50		
			Practical	50	17
14.	Linguistics	I	75	150	50
		II	75		
15.	Indian Music	I	50	100	33
		II	50		
			Practical	50	17
16.	Home Science	I	50	100	33
		II	50		
			Practical	50	17
17.	Education	I	75	150	50
		II	75		
18.	Psychology	I	50	100	33
		II	50		
			Practical	50	17
19.	Management	I	75	150	50
		II	75		
20.	Defence Studies	I	50	100	33
		II	50		
			Practical	50	17
21.	Urdu	I	75	150	50
		II	75		

#### USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 examination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986-

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the university or examination centres.
3. Calculators with, memory and following variables be permitted +, -, x, , square, reciprocal, expotentials log, square root, trigonometric functions, wize, sine, cosine, tangent etc. factorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.

B.A. Part-3



*[Signature]*  
Principal,  
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- 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 अश्क  
(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  
स्त्रोत 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।



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*Arjun Singh*  
डा. अर्जुन सिंह

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 Diberlialiation 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.



  
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बी. ए. भाग- 3

हिन्दी साहित्य

प्रथम प्रश्न पत्र

जनपदीय भाषा- साहित्य (छत्तीसगढ़ी)

प्रस्तावना-

हिन्दी केवल खड़ी बोली नहीं है, बल्कि एक बहुत बड़ा भाषिक समूह है। हिन्दी जगत में अनेक विभाषाएँ, बोलियाँ और उपबोलियाँ विद्यमान हैं जिनमें सकल साहित्य सम्पदा है। इनके सम्यक अध्ययन और अन्वेषण की आवश्यकता है। जनपदीय भाषा छत्तीसगढ़ी निरन्तर विकास की ओर अग्रसर हो रही है अस्तु, इस भाषा का और इसमें रचित साहित्य का इतिहास- विकास स्पष्ट करते हुए इनसे संबंधित प्रमुख रचनाकारों का आलोचनात्मक अनुशीलन करना हिन्दी के वृहत्तर हित में होगा। छत्तीसगढ़ी भाषा का पाठ्यक्रम निम्न बिन्दुओं पर आधारित है-

- (क) छत्तीसगढ़ी भाषा का इतिहास- विकास
- (ख) छत्तीसगढ़ी भाषा में रचित साहित्य का इतिहास
- (ग) छत्तीसगढ़ी भाषा के प्रमुख प्राचीन एवं अर्वाचीन रचनाकारों की कृतियों का अध्ययन।

पाठ्य विषय-

रचनाएँ-

- (1) प्राचीन कवि संत धर्मदास के 3 पद
  - 1. गुरु पईया लागों नाम लखा दीजो हो।
  - 2. नैना आगे ख्याल घनेरा।
  - 3. भजन करौ भाई रे, अइसन तन पाय के।(सन्दर्भ- धर्मदास के शब्दावली से उद्धृत)
- (2) लखनलाल गुप्त का गद्य-
  - 1. सोनपान(गद्य- पुस्तक 'सोनपान' के उद्धृत)
- (3) अर्वाचीन रचनाकार
  - डॉ. सत्यभामा आडिल रचित गद्य
  - 1. सीख सीख के गोठ(गद्य पुस्तक 'गोठ' के उद्धृत)
- (4) डॉ. विनय पाठक की कविताएँ-
  - 1. तैंय उठथस सुरुज उथे
  - 2. एक किसिम के नियाव(अकादसी और अनचिन्हार' पुस्तक से उद्धृत)
- (5) मुकुन्द कौशल- छत्तीसगढ़ी गजल
  - "छे बित्ता के मनखे देखो..... से- मछरी मन लाख लेथे" तक(पुस्तक 'छत्तीसगढ़ी गजल' के पृष्ठ 17 से उद्धृत)

5/7/2024

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Dr. Asha Nidhan



दुतपाठ के रचनाकार- (व्यक्तित्व एवं कृतित्व)

1. सुन्दर लाल शर्मा
2. कपिलनाथ कश्यप
3. रामचन्द्र देशमुख (रंगकर्मी)

अंक विभाजन- व्याख्याएं (3)	- 21 अंक
आलोचनात्मक प्रश्न (2)	- 24 अंक
लघुउत्तरीय प्रश्न (5)	- 15 अंक
वस्तुनिष्ठ (15)	- 15 अंक
कुल अंक	75

इकाई विभाजन

इकाई एक	- व्याख्या
इकाई दो	- प्राचीन एवं अर्वाचीन रचनाकार
इकाई तीन	- (अ) छत्तीसगढ़ी भाषा का इतिहास (ब) छत्तीसगढ़ी साहित्य का इतिहास
इकाई चार	- दुत पाठ के तीन रचनाकार
इकाई पाँच	- वस्तुनिष्ठ / (सम्पूर्ण पाठ्यक्रम से)



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*Amis*  
*डा. आशा विमान*

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बी.ए. भाग- 3

द्वितीय प्रश्न पत्र

हिन्दी भाषा- साहित्य का इतिहास तथा काव्यांग विवेचन

प्रस्तावना-

हिन्दी भाषा का इतिहास जितना प्राचीन है, उतना ही गूढ़- गहन भी। इसमें रचित साहित्य ने लगभग डेढ़ हजार वर्षों का इतिहास पूरा कर लिया है इसलिए हिन्दी भाषा और साहित्य के ऐतिहासिक विवेचन की बड़ी आवश्यकता है। इसी के साथ- साथ हिन्दी ने अपना जो स्वतंत्र साहित्य शास्त्र निर्मित किया है, उसे भी रूपायित करने की आवश्यकता है। इसके संज्ञान द्वारा विद्यार्थी की मर्मग्राहिणी प्रतिभा का विकास होगा और ऐतिहासिक परिप्रेक्ष्य में शुद्ध साहित्यिक विवेक का सन्निवेश होगा।

पाठ्य विषय-

(क) हिन्दी भाषा का स्वरूप विकास- हिन्दी की उत्पत्ति, हिन्दी की मूल आकर भाषाएँ तथा विभिन्न विभाषाओं का विकास। हिन्दी भाषा के विभिन्न रूप-

1. बोलचाल की भाषा
2. रचनात्मक भाषा
3. राष्ट्रभाषा
4. राजभाषा
5. सम्पर्क भाषा
6. संचार भाषा

हिन्दी का शब्द भण्डार- तत्सम, तद्भव, देशज, आगत शब्दावली।

(ख) हिन्दी साहित्य का इतिहास :- आदिकाल, पूर्व मध्यकाल, उत्तर मध्यकाल और आधुनिक काल की सामाजिक, सांस्कृतिक पृष्ठभूमि, प्रमुख युग प्रवृत्तियाँ, विशिष्ट रचनाकार और उनकी प्रतिनिधि कृतियाँ, साहित्यिक विशेषताएँ।

(ग) काव्यांग - काव्य का स्वरूप एवं प्रयोजन।  
रस के विभिन्न भेद, विभिन्न अंग, विभावादि तथा उदाहरण।  
प्रमुख 5 छंद - दोहा, सोरठा, चौपाई, कुण्डलियाँ, सवैया।  
शब्दालंकार - अनुप्रास, यमक, श्लेष, वक्रोक्ति, पुररुक्ति प्रकाश।  
अर्थालंकार - उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, भ्रांतिमान।

संदर्भ ग्रन्थ-

(1) हिन्दी साहित्य का इतिहास संपादक- डॉ. सुशील त्रिवेदी व बाबूलाल शुक्ल (प्रकाशक- म. प्र. उ. शि. अनुदान आयोग)

5/7/2021

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- (2) राजभाषा हिन्दी- मलिक मोहम्मद (प्रभात प्रकाशन दिल्ली)  
(3) हिन्दी भाषा- डॉ. भोलानाथ तिवारी।

अंक विभाजन-

आलोचनात्मक (4)	-44 अंक
लघुउत्तरीय प्रश्न (4)	- 16 अंक
वस्तुनिष्ठ प्रश्न (15)	- 15 अंक
कुल अंक -	75 अंक

इकाई विभाजन-

- इकाई- 1 हिन्दी भाषा का स्वरूप- विकास- (खण्ड- 'क')  
इकाई- 2 हिन्दी का शब्द भण्डार- (खण्ड 'क' का अंतिम भाग)  
इकाई- 3 हिन्दी साहित्य का इतिहास- (खण्ड- ख)  
इकाई- 4 काव्यांग- रस, छंद, अंलकार (भाग- ग)  
इकाई- 5 लघुउत्तरीय एवं वस्तुनिष्ठ प्रश्न (सम्पूर्ण पाठ्यक्रम से)



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बी. ए. भाग 3 B.A. Part III

राजनीति विज्ञान Political Science

प्रथम प्रश्नपत्र : अन्तर्राष्ट्रीय राजनीति एवं भारत की विदेश नीति

Paper I : International Politics and Foreign Policy of India

- इकाई 1 : अन्तर्राष्ट्रीय राजनीति : अर्थ, प्रकृति, क्षेत्र ।  
अन्तर्राष्ट्रीय राजनीति : अध्ययन उपागम — यथार्थवाद, आदर्शवाद, नवयथार्थवाद, विश्व व्यवस्था सिद्धान्त । राष्ट्रीय हित एवं राष्ट्रीय शक्ति : अर्थ, परिभाषा एवं तत्व ।
- Unit 1 : International Politics : meaning, Nature, Scope. International Politics : Approaches to the study : Realism, Idealism, New realism, World System theory. National interest and National power: Meaning Definition and Elements.
- इकाई 2 : अन्तर्राष्ट्रीय राजनीति के विभिन्न सिद्धान्त : व्यवस्था, खेल, निर्णय निर्माण, सौदेबाजी का सिद्धान्त । शक्ति संतुलन । सामूहिक सुरक्षा । निशस्त्रीकरण । शीतयुद्ध । राजनय ।
- Unit 2 : Various theories of International Politics : System, Game, Decision making, Bargaining theory. Balance of Power, Collective Security, Disarmament, Cold war, Diplomacy.
- इकाई 3 : भारत की विदेश नीति : निर्धारक तत्व, विशेषताएं । गुटनिरपेक्षता : अर्थ, विशेषताएं, प्रासंगिकता ।
- Unit 3 : Foreign Policy of India : Determinating elements, characteristics. Non-alignment : meaning, features , relevance.
- इकाई 4 : भारत का पड़ोसियों से सम्बंध — चीन, पाकिस्तान, नेपाल, श्रीलंका । भारत का महाशक्तियों से सम्बंध — संयुक्त राज्य अमेरिका, रुस, ब्रिटेन एवं फ्रांस
- Unit 4 : Indias' relations with neighboring countries : China , Pakistan, Nepal, Sri lanka, Relations with Super Powers - USA, Russia, Britain and France.
- इकाई 5 : अन्तर्राष्ट्रीय राजनीति के कुछ प्रमुख मुद्दे : पर्यावरणवाद । अन्तर्राष्ट्रीय आतंकवाद । वैश्वीकरण । मानव अधिकार । परमाणविक निशस्त्रीकरण ।
- Unit 5 : Some major issues of International Politics : Environmentalism, International Terrorism, Globalisation, Human Rights, Nuclear Disarmament.



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*[Signature]*  
09/06/2021  
Dr. Anurupa Baid

*[Signature]*  
01/07/2021

*[Signature]*  
Sunita Mishra

*[Signature]*  
डा. मणिमोहन शुक्ल

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बी.ए. अंतिम वर्ष  
प्रथम प्रश्न पत्र  
अंतर्राष्ट्रीय राजनीति एवं भारत की विदेश नीति

सन्दर्भ ग्रन्थ सूची:-

क्र	पुस्तक का नाम	लेखक का नाम
1.	अन्तर्राष्ट्रीय राजनीति के सैद्धान्तिक पक्ष	महेन्द्र कुमार
2.	अन्तर्राष्ट्रीय राजनीति के सिद्धान्त एवं व्यवहार	यू.आर.घई
3.	अन्तर्राष्ट्रीय राजनीति सिद्धान्त समकालीन एवं मृदुदे	बी.एल. फाडिया
4.	अन्तर्राष्ट्रीय संबंध	पुष्पेश पन्थ
5.	अन्तर्राष्ट्रीय संबंध	दीनानाथ वर्मा
6.	थीयरी ऑफ इन्टरनेशनल पालिटिक्स	के.वाल्डज़
7.	इन्टरनेशनल रिलेशन्स	जे.गोल्ड स्टोन
8.	द इन्टरनेशनल पालिटिक्स	पी.कलवरट
9.	इन्टरनेशनल रिलेशन्स	सी.ब्राउन
10.	समकालीन विश्व एवं भारत	अरुणोदय बाजपेयी

**Reference :-**

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- John Gray, **False Dawn: The Delusions of Global Capitalism**, Grant Book, U.K. , 1998
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Robert Jackson and Georg Sørensen, **Introduction to International Relations: Theories and Approaches**, Oxford University Press, 2003

- Joshua S. Goldstein & Jon C. Pevehouse, **'International Relations'** 5<sup>th</sup> Edition, Pearson Education, 2002
- J. W. Burton, **'International Relations: A General Theory'**, Cambridge University Press, New York, 1965.

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- M.S. Agwani, **Détente: Perspectives and Repercussions**, New Delhi: Vikas, 1975
- John Gray, **False Dawn: The Delusions of Global Capitalism**, Grant Book, U.K., 1998
- Hans J. Morgenthau, **Politics Among Nations: The Struggle for Power and Peace**, Calcutta, Scientific Book Agency, Calcutta, 1972
  - Mahendra Kumar, **Theoretical Aspects of International Politics**
  - K.J. Holsti, **International Politics: A Framework for Analysis**, Prentice Hall of India, New Delhi, 1995.
  - Paul Kennedy, **Preparing for the Twenty-First Century**, New York, 1993
  - Hutchings, Kimbley, **International Political Theory**, Sage, New Delhi, 2002
  - Karen Mingst, **Essentials of International Relations**, New York: W.W. Norton & Company, 2007
  - Kate Kelly S. Pease, **International Organizations**, New Jersey: Prentice Hall, 2000
  - Robert Jackson and Georg Sørensen, **Introduction to International Relations: Theories and Approaches**, Oxford University Press, 2003
  - Joshua S. Goldstein & Jon C. Pevehouse, **'International Relations'** 5<sup>th</sup> Edition, Pearson Education, 2002.
  - J. W. Burton, **'International Relations: A General Theory'**, Cambridge University Press, New York, 1965.
  - John Baylis & Steve Smith, **'Globalization of World Politics'** OUP, U.S.A. & Delhi, 2008.



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श्रीमतिमिखला शुक्ला

द्वितीय प्रश्नपत्र : लोक प्रशासन Paper : II : Public Administration

इकाई 1 : लोक प्रशासन : अर्थ, परिभाषा, प्रकृति, क्षेत्र । लोक प्रशासन और निजी प्रशासन । अध्ययन पद्धतियाँ ।  
नवीन लोक प्रशासन । तुलनात्मक लोक प्रशासन ।

Unit 1 : Public Administration : meaning and definition, nature, scope. Public Administration and Private Administration. Method of Studies. New Public Administration. Comparative Public Administration.

इकाई 2 : संगठन के सिद्धान्त : पदसोपान, नियंत्रण का क्षेत्र, आदेश की एकता, प्रत्यायोजन ।  
मुख्य कार्यपालिका । सूत्र एवं स्टाफ अभिकरण । विभागीय संगठन, लोक निगम । कार्मिक प्रशासन  
: भर्ती, पदोन्नति, प्रशिक्षण ।

Unit 2 : Principles of Organisation : Hierarchy, Span of Control, Unity of Command, Delegation. Chief Executive. Line and Staff Agencies. Departmental Organisation. Public Corporation. Personnel Administration : Recruitment, Promotion, Training.

इकाई 3 : विकास प्रशासन : प्रकृति, मुद्दे और विशेषताएं । रिग्स मॉडल । प्रशासन में नागरिक सहभागिता ।  
सुशासन और ई शासन । संघ लोक सेवा आयोग ।

Unit 3 : Development Administration : Nature, Issues, Characteristics. Riggs Model.  
Public participation in Administration. Good Governance and  
e- Governance. Union Public Service Commission.

इकाई 4 : वित्तीय प्रशासन : बजट के सिद्धान्त । भारत में बजट प्रक्रिया । भारत में प्रशासनिक सुधार ।  
प्रशासन पर कार्यपालिका, विधायी, न्यायिक और जन नियन्त्रण ।

Unit 4 : Financial Administration: Principles of Budget. Budget procedure in India.  
Administrative reforms in India. Executive, Legislative, Judicial and Public Control on  
Administration.

इकाई 5 : प्रशासन में भ्रष्टाचार : आम्बुड्समैन, लोकपाल और लोक आयुक्त ।  
वैश्वीकरण के युग में लोक प्रशासन । उदासीकरण । नौकरशाही । लोक सम्पर्क ।  
Corruption in Administration: Ombudsman, Lokpal and Lok Ayukta.  
Public Administration in the age of Globalisation. Liberalisation. Bureaucracy.



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द्वितीय प्रश्न पत्र  
लोक प्रशासन

सन्दर्भ ग्रन्थ सूची:-

क्र	पुस्तक का नाम	लेखक का नाम
1.	लोक प्रशासन	अवस्थी और माहेश्वरी
2.	लोक प्रशासन सिद्धान्त एवं व्यवहार	सूषमा यादव और बलराम गौतम-(सम्पा)
3.	तुलनात्मक लोक प्रशासन	रमेश अरोड़ा
4.	लोक प्रशासन सिद्धान्त एवं व्यवहार	पी.डी. शर्मा और हरीशचन्द्र शर्मा
5.	वित्त प्रशासन	गौतम पदमनाम
6.	लोक प्रशासन के सिद्धान्त	सी.पी. भामरी
7.	लोक प्रशासन	बी.एल. फाडिया
8.	प्रशासनिक सिद्धान्त	अवस्थी और अवस्थी

**Reference :-**

- Avasthi & S.R. Maheshwari: **Public Administration**, (Agra: L. N. Agrawal, latest Hindi and English editions)
- R. R. Jha: **Lokayukta : The Indian Ombudsman**, Rishi Publications, Varanasi, 1991
- F.A. Nigro and G.I. Nigro, **Modern Public Administration**, New York, Harper Row, 1980
- M. P. Sharma, B. L. Sadana, '**Lok Prashasan : Siddhanth Evam Vyavahar**', (Allahabad: Kitab Mahal, Latest Hindi and English editions) .
- R. K. Arora & R. Goyal: **Indian Public Administration**, (New Delhi: Vishwa Prakashan, 2008).
- S. Kataria, '**Personnel Administration**', (RBSA Publishers, Jaipur, 2003



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**B.A./B.Sc Part III**  
**PAPER - II**  
**GEOGRAPHY OF CHHATTISGARH**  
**Max. Marks: 50**

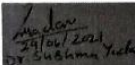
- Unit I** Physical Features : Geological Structure, Relief and Physiographic Regions, Drainage, Climate.
- Unit II** Natural Resources : Soils – Types, characteristics and their Distribution. Water Resources (Major Irrigation and Hydel Power Projects), Forests-types, Distribution, Conservation of Forest. Mineral Resources-iron-ore, Coal, Dolomite Lime stone, Bauxite, etc. Power Resources of Chhattisgarh.
- Unit III** Agriculture and Populations – Agriculture: Cereals, Pulses and other crops. Population: Growth, Distribution, and Density; Tribal Populations; and Urban and Rural Population.
- Unit IV** Industries - Iron and Steel, Cement, Sugar, Aluminum; Industrial Regions of Chhattisgarh.
- Unit V** Trade and Transport, Tourism, Socio-Economic Development of Chhattisgarh.

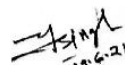
**Books Recommended:**

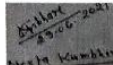
1. Jha, Vibhash Kumar and Saumya Naiyyar (2013) Chhattisgarh Samagra, Chhattisgarh Rajya Hindi Granth Akadmi, Raipur
2. Kumar, Pramila (2003): Chhattisgarh Ek Bhugolik Addhyayan. Madhya Pradesh Hindi Granth Akadmi, Bhopal
3. Nagesh Jitendra and at all (2014): Chhattisgarh Sandarbh 2014 Jansanmpark Vibhag, C.G. Govt., Raipur
4. Tiwari, Vijay Kumar ( ): Geography of Chhattisgarh, Himalya Publishing House, Pvt. Ltd
5. Tripathi, Kaushlendra and Pursottam Chandrakar (2001): Geography of Chhattisgarh, Shardaprakashan, Aazad Nagar , Bilaspur.
6. Verma ,L.N. (2017): Geography of Chhattisgarh, Madhya Pradesh Hindi Granth Akadmi, Bhopal

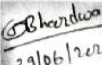
  
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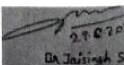


  
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**B.A./B.Sc Part III**  
**PAPER - III**  
**PRACTICAL GEOGRAPHY**  
**Max. Marks: 50**

**SECTION A**

**MAP READINGS AND INTERPRETATION**

(M.M. 20)

- Unit I** Graphical Representation: Band graph, Climograph, Square root, Cube-root.
- Unit II** Topographical Sheets: Classification and numbering system (National and International), Interpretation of Topographical Sheets with respect to cultural and physical features.
- Unit III** Satellite Imageries: Describing the Marginal Information, Image interpretation: Visual Methods –Landuse /Landcover Mapping. Use and Application of GPS.

**SECTION B**

**SURVEYING AND FIELD REPORT**

(M.M.20)

- Unit IV** Surveying: Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
- Unit V** Field work and field report: physical, social and economic survey of a micro-region.

**PRACTICAL RECORD AND VIVA VOCE**

(M.M.10)

**Books Recommended:**

1. Archer, J.E. and Dalton, T.H. (1968): *Field Work in Geography*. William Clowes and Sons Ltd. London and Beccles.
2. Bolton, T. and Newbury, P.A. (1968): *Geography through Fieldwork*. Blandford Press, London.
3. Campell, J. B. (2003): *Introduction to Remote Sensing*. 4<sup>th</sup> edition. Taylor and Francis, London.
4. Chaunial, D. D. (2004): *Remote Sensing and Geographical Information System*(in Hindi), Sharda Pustak Bhawan, Allahabad
5. Cracknell, A. and Ladson, H. (1990): *Remote Sensing Year Book*. Taylor and Francis, London.
6. Curran, P.J. (1985): *Principles of Remote Sensing*. Longman, London.
7. Davis, R.E. and Foote, F.S. (1953): *Surveying*, 4<sup>th</sup> edition, McGraw Hill Publication, New York
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9. Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): *Remote Sensing*. Indian Academy of Science, Bangalore.
10. Floyd, F. and Sabins, Jr. (1986): *Remote Sensing: Principles and Interpretation*. W.H. Freeman, New York.
11. Gautam, N.C. and Raghavswamy, V. (2004). *Land Use/ Land Cover and Management Practices in India*. B.S. Publication., Hyderabad.

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12. Jensen, J.R. (2004): Remote Sensing of the Environment: An Earth Resource Perspective. Prentice-Hall, Englewood Cliffs, New Jersey. Indian reprint available.
13. Jones, P.A.(1968): Fieldwork in Geography, Longmans, Green and Company Ltd., First Publication, London
14. Kanetker, T.P. and Kulkarni, S.V.(1967): Surveying and Levelling, Vol I and II V.G. Prakashan, Poona.
15. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. John Wiley and Sons, New York.
16. Monkhouse, F. J. (1985): Maps and Diagrams. Methuen, London.
17. Nag, P. (ed.) (1992): Thematic Cartography and Remote Sensing. Concept Publishing Company, New Delhi.
18. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai.
19. Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation. Concept Publishing. Company, New Delhi.
20. Raisz, E. (1962): Principles of Cartography, McGraw Hill, New York.
21. Robinson, A. H., Sale. R. D., Morrison, J. L. and Muehrcke, P. C. (1984): Elements of Cartography. 5th edition, John Wiley and Sons, Inc. New York.
22. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata
23. Sharma, J. P. (2001): *Prayogik Bhugol.*, Rastogi Publication, Meerut 3<sup>rd</sup>. edition.
24. Singh, R.L. and Singh Rana P.B. (1993): *Elements of Practical Geography.* (Hindi and English editions). Kalyani Publishers, New Delhi.
25. Stoddard, Robert H. (1982): *Field Techniques and Research Methods in Geography.* Kendall/Hunt Pub. Dubuque IO.

  
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बी.ए./बी.एस.सी. तृतीय वर्ष  
प्रश्न पत्र-प्रथम  
सुदूर संवेदन एवं भौगोलिक सूचना प्रणाली

अधिकतम अंक: 50

- इकाई -1 :** सुदूर संवेदन का अर्थ तथा आधारभूत संकल्पना : परिभाषा, इतिहास, एवं विषय क्षेत्र; विद्युत चुम्बकीय विकिरण : विशेषताएँ, वर्णक्रमीय (SPECTRAL) प्रदेश एवं बैंड; पृथ्वी के धरातल एवं वायुमण्डल के साथ विकिरण अर्जा की अन्योन्यक्रिया, वर्णक्रमीय (SPECTRAL)लक्षण ।
- इकाई -2 :** सुदूर संवेदन के प्रकार : वायु जनित एवं अंतरिक्ष जनित; हवाई छायाचित्र : प्रकार एवं विशेषताएँ; सुदूर संवेदन उपग्रह : प्लेटफार्म एवं संवेदक : सक्रिय एवं निष्क्रिय, संवेदक की विशेषताएँ : स्थानिक विभेदन, वर्णक्रमीय (SPECTRAL) विभेदन, रेडियोमेट्रिक विभेदन, अल्पकालिक विभेदन, उत्पाद ।
- इकाई -3 :** चाक्षुष एवं अंकीय बिम्ब प्रक्रियान्वयण तकनीक; संसाधन मानचित्रण एवं पर्यावरण नियंत्रण में सुदूर संवेदन अनुप्रयोग, भारत में सुदूर संवेदन; उद्भव एवं विकास ।
- इकाई -4 :** भौगोलिक सूचना प्रणाली का परिचय : भूसूचना की परिभाषा, भूसूचना का महत्व एवं विषय क्षेत्र, भौगोलिक सूचना प्रणाली का इतिहास, जी0 आई0 एस0 की संकल्पना, जी0 आई0 एस0 के कार्य - आंकड़ा प्रवेश, संचालन, परिचालन, प्रबंधन, त्रुटि संसूचन, विश्लेषण एवं प्रदर्शन, धरातलपत्रक, सर्वेक्षण, हवाई बिम्ब, उपग्रह आंकड़े एवं बिम्ब, आकड़ों के प्रकार धरातलीय एवं अधरातलीय या लाक्षाणिक ।
- इकाई-5 :** आंकड़ा मॉडल एवं आंकड़ा विश्लेषण : रॉस्टर आंकड़ा एवं उसकी विशेषताएँ, वेक्टर आंकड़ा एवं उसकी विशेषताएँ, रास्टर आंकड़ा विश्लेषण : ग्रिड सेल अथवा पिक्सल, वेक्टर आंकड़ा विश्लेषण धरातलीय आंकड़ा, वेक्टर प्रारूप की रचना धरातलीय एवं अधरातलीय आंकड़ा प्रबंधन, धरातलीय सूचना तकनीक ।

**Books Recommended:**

1. Bhatta, B. (2010): Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell, J.B. (2002): Introduction to Remote Sensing. 5<sup>th</sup> edition, Taylor and Francis, London
3. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London
4. Kang-tsung Chang (2003) Geographic Information Systems, Tata McGraw Hill, New Delhi
5. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4<sup>th</sup> edition. John Wiley and Sons, New York
6. Lo Albert, C.P., and Young, K.W (2003) Concepts and Techniques of Geographical Information Systems, Prentice Hall of India Pvt. Ltd., New Delhi.
7. Nag Prithvish and Kudrat M. (1998): Digital Remote Sensing, Concept Publishing Company, New Delhi
8. Star J, and J. Estes, (1994), Geographic Information Systems: An Introduction, Prentice Hall, New Jersey.
9. Williams J. (1995): Geographic information from space, John Wiley and Sons, England,
10. चौनियाल, देवी दत्त (2004), सुदूर संवेदन एवं भौगोलिक सूचना प्रणाली, शारदा पुस्तक भवन, इलाहाबाद-2.

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बी.ए./बी.एस.सी. तृतीय वर्ष  
प्रश्न पत्र-द्वितीय  
छत्तीसगढ़ का भूगोल

अधिकतम अंक : 50

- इकाई -1. भौतिक स्वरूप भौमिकीय संरचना उच्चावच, भूआकृतिक प्रदेश, अपवाह, जलवायु ।
- इकाई -2. प्राकृतिक संसाधन-मिट्टी, प्रकार, विशेषताएँ, वितरण, जलसंसाधन: प्रमुख सिंचाई और बहुउद्देशीय परियोजनाएँ, वन : प्रकार, वितरण, वनों का संरक्षण, खनिज संसाधन - लौह अयस्क, कोयला डोलोमाइट, चुना पत्थर और बाक्साइट छत्तीसगढ़ में शक्ति के संसाधन ।
- इकाई -3. कृषि- प्रमुख खाद्यान्न फसलें, दलहन एवं अन्य फसलें, जनसंख्या- वृद्धि, वितरण और घनत्व, जनजातिय जनसंख्या । ग्रामीण और नगरीय जनसंख्या ।
- इकाई -4. उद्योग, लौह इस्पात उद्योग, सिमेंट चीनी, एल्युमिनीयम, छत्तीसगढ़ के औद्योगिक प्रदेश ।
- इकाई -5. व्यापार, परिवहन, पर्यटन, छत्तीसगढ़ का सामाजिक आर्थिक विकास ।

**Books Recommended:**

1. Jha, Vibhash Kumar and Saumya Naiyyar (2013) Chhattisgarh Samagra, Chhattisgarh Rajya Hindi Granth Akadmi, Raipur
2. Kumar, Pramila (2003): Chhattisgarh Ek Bhugolik Addhyayan. Madhya Pradesh Hindi Granth Akadmi, Bhopal
3. Nagesh Jitendra and at all (2014): Chhattisgarh Sandarbh 2014 Jansanmpark Vibhag, C.G. Govt., Raipur
4. Tiwari, Vijay Kumar ( ): Geography of Chhattisgarh, Himalya Publishing House, Pvt. Ltd
5. Tripathi, Kaushlendra and Pursottam Chandrakar (2001): Geography of Chhattisgarh, Shardaprakashan, Aazad Nagar, Bilaspur.
6. Verma, L.N. (2017): Geography of Chhattisgarh, Madhya Pradesh Hindi Granth Akadmi, Bhopal



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*Dr. Sushama Verma*  
27/6/21

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27/6/21

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27/6/21

*Dr. Sushama Verma*  
27/6/21

*Dr. Sushama Verma*  
27/6/21

खण्ड (अ)

मानचित्र पठन एवं निर्वचन

इकाई -1. बैन्ड ग्राफ, हीदर ग्राफ, क्लाइमोग्राफ, पवनारेख ।

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इकाई -2. भारतीय स्थलाकृतिक मानचित्र की व्याख्या प्रकार, वर्गीकरण धरतलीय मानचित्र के प्रकार एवं विष्लेषण, राष्ट्रीय एवं अन्तराष्ट्रीय, भौतिक एवं सांस्कृतिक तत्वों के आधार पर विष्लेषण ।

इकाई -3. उपग्रह बिम्ब : प्रारम्भिक सूचनाओं की व्याख्या बिम्ब निर्वचन : चाक्षुश विधि - भूमि उपयोग भूमि आच्छादन मानचित्रण, जी0 पी0 एस0 का उपयोग एवं अनुप्रयोग ।

खण्ड (ब)

सर्वेक्षण एवं क्षेत्रीय प्रतिवेदन

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इकाई -4. सर्वेक्षण , समपटल सर्वेक्षण, प्रतिच्छेदन एवं स्थिति निर्धारण ।

इकाई -5. भूगोल में क्षेत्रीय कार्य का महत्व किसी छोटे क्षेत्र का भौतिक सामाजिक आर्थिक सर्वेक्षण और रिपोर्ट तैयार करना ।

प्रायोगिक पुस्तिका और मौखिक परीक्षण परीक्षा

10

Books Recommended:

1. Archer, J.E. and Dalton, T.H. (1968): *Field Work in Geography*. William Clowes and Sons Ltd. London and Beccles.
2. Bolton, T. and Newbury, P.A. (1968): *Geography through Fieldwork*. Blandford Press, London.
3. Campell, J. B. (2003): *Introduction to Remote Sensing*. 4<sup>th</sup> edition. Taylor and Francis, London.
4. Chaunial, D. D. (2004): *Remote Sensing and Geographical Information System*(in Hindi), Sharda Pustak Bhawan, Allahabad
5. Cracknell, A. and Ladson, H. (1990): *Remote Sensing Year Book*. Taylor and Francis, London.
6. Curran, P.J. (1985): *Principles of Remote Sensing*. Longman, London.
7. Davis, R.E. and Foote, F.S. (1953): *Surveying*, 4<sup>th</sup> edition, McGraw Hill Publication, New York
8. ,
9. Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): *Remote Sensing*. Indian Academy of Science, Bangalore.
10. Floyd, F. and Sabins, Jr. (1986): *Remote Sensing: Principles and Interpretation*. W.H. Freeman, New York.
11. Gautam, N.C. and Raghavswamy, V. (2004). *Land Use/ Land Cover and Management Practices in India*. B.S. Publication., Hyderabad.
12. Jensen, J.R. (2004): *Remote Sensing of the Environment: An Earth Resource Perspective*. Prentice-Hall, Englewood Cliffs, New Jersey. Indian reprint available.
13. Jones, P.A.(1968): *Fieldwork in Geography*, Longmans, Green and Company Ltd., First Publication, London

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14. Kanetker, T.P. and Kulkarni, S.V.(1967): Surveying and Levelling, Vol I and II V.G. Prakashan, Poona.
15. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. John Wiley and Sons, New York.
16. Monkhouse, F. J. (1985): Maps and Diagrams. Methuen, London.
17. Nag, P. (ed.) (1992): Thematic Cartography and Remote Sensing. Concept Publishing Company, New Delhi.
18. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai.
19. Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation. Concept Publishing. Company, New Delhi.
20. Raisz, E. (1962): Principles of Cartography, McGraw Hill, New York.
21. Robinson, A. H., Sale. R. D., Morrison, J. L. and Muchreke, P. C. (1984): Elements of Cartography. 5th edition, John Wiley and Sons, Inc. New York.
22. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata
23. Sharma, J. P. (2001): *Prayogik Bhugol.*, Rastogi Publication, Meerut 3<sup>rd</sup>. edition.
24. Singh, R.L. and Singh Rana P.B. (1993): *Elements of Practical Geography.* (Hindi and English editions). Kalyani Publishers, New Delhi.
25. Stoddard, Robert H. (1982): *Field Techniques and Research Methods in Geography.* Kendall/Hunt Pub. Dubuque IO.

  
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# SOCIOLOGY

B.A. PART- III

PAPER- I

## FOUNDATIONS OF SOCIOLOGICAL THOUGHT

- UNIT-I** **August Comte:** The Law of Three Stages, Positivism, Hierarchy of Science.  
**Durkheim:** Social Solidarity and Suicide
- UNIT-II** **Karl Marx:** Dialectic Materialism, Class Struggle and Surplus value.  
**Max Weber:** Bureaucracy, Authority and the Protestant Ethic and the spirit of Capitalism.
- UNIT-III** **Pareto:** Circulation of Elits and Logical and Nonlogical action.  
**Spencer:** Social Darwinism, Superorganic evolutions.
- UNIT-IV** **Thorstein Veblen:** The Theory of Leisure Class, Theory of Social Change  
**R.K. Morton:** Functionalism and Reference Group.
- UNIT-V** **Development of Sociological thought in India:-**  
**Mahatma Ghandhi :** Ahimsa, Satya Graha and Trusteeship.  
**RadhaKamal Mukherjee:** The Concept of Value.

### ESSENTIAL READINGS-

1. Barres, H.E.: Introduction to the sociology, Chicago the University of Chicago press 1959.
2. Coser, Levis a.: Master of Sociological thought, New York Harcourt Brace Jovanovich 1979.
3. Singh, Yogendra- Indian sociology: social conditioning and emerging friends. New Delhi vistaar 1986.
4. Zeitlin, Irving- (Indian edition) Rethinking sociology: A critique of contemporary theory, Jorpur Rawl 1999.

*Dumy*  
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*Prasada*

*Prasada*

*Sapna*  
Dr. Sapna Kor

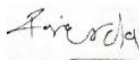
**SOCIOLOGY**  
**B.A. PART- III**  
**PAPER- II**  
**METHODS OF SOCIAL RESEARCH**

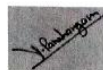
- UNIT-I** Social Research: **Meaning, Characteristics and Significance.**  
Scientific Methods, Hypothesis.
- UNIT-II** **Qualitative Research:** Ethnography, Observation, Case Study, Content analysis.
- UNIT-III** **Research design:** Exploatory, Descriptive, Explanatory, Experimental and Diagnostic.
- UNIT-IV** **Tools and Techniques of Social Research:** Social Survey, Sampling, Questionnaire, Interview- Schedule and Interview - Guide
- UNIT-V** **Social Statistics:** Meaning, Importance and Limitations.  
Graphs, Diagram and Measures of Central Tendency- Mean, Mode, Median, Co-relation, Use of Computer in Social Research.

**ESSENTIAL READINGS-**

01. Young, P.V. (1977). Scientific Social Surveys and Research. Prentice Hall of India. New Delhi.
02. Bruce, C., & Margaret, M. (1993). Approaches to Social Research, New York: Oxford University Press.
03. Cohen, M & Nagel, E. (1994). An Introduction to Logic and Scientific Method. New York: Harcourt, Brace & Company.
04. Forcese, D., & Richer, S. (1973). Social Research Methods. Cliffs: Englewood, Cliffs, NJ.
05. Moser, C.A. (1962). Survey Methods in Social Research Investigation. London: Heinemann, Printce Hall.
06. Goode, & Hatt. (1952). Methods in Social Research. New York: MC Graw Hill Publishers.

  
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Dr. Supna Kor





## हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)

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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।

—00—

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।



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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 20/4/21

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.)

  
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**HEMCHAND YADAV VISHWAVIDYALAYA,  
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**SCHEME OF EXAMINATION  
&  
SYLLABUS  
Of**

**B.Com. Final Year  
Session 2021-22**

**(Approved by Board of Studies)  
Effective from July 2021**

  
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Distt. Balod (C.G.)**



**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.



*Dinesh*  
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- इकाई-एक** (क) भारत माता : सुमित्रानंदन पंत  
(ख) कथन की शैलियों  
1. विवरणात्मक शैली 2. मूल्यांकन शैली  
3. व्याख्यात्मक शैली 4. विचारात्मक शैली
- इकाई-दो** (क) सूखी डाली : उपेन्द्रनाथ अश्क  
(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।

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*5/7/2021*

*डा. आशा निवाज*



*डा. अरुण मा*



Foundation Course-III

English Language

B.A./B.Sc./B.Com./B.H.Sc./III

M.M. 75

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 Diberalliation 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.



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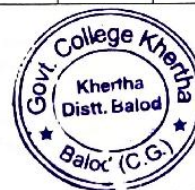
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## SYLLABUS

### B.COM. PART-III

#### GROUPING OF SUBJECTS AND SCHEME OF EXAMINATION

Subject		Max.	Min.
<b>Foundation Course</b>			
I. Hindi Language		75	26
II. English Language		75	26
<b>Compulsory Groups</b>			
<b>Group-I</b>			
I. Income Tax	75	150	50
II. Auditing	75		
<b>Group-II</b>			
I. Indirect Taxes with GST	75	150	50
II. Management Accounting	75		
<b>Group-III Optional</b>			
<b>Option Group A (Finance Area)</b>			
I. Financial Management	75	150	50
II. Financial Market Operations	75		
<b>Option Group B (Marketing Area)</b>			
I. Principles of Marketing	75	150	50
II. International Marketing	75		
<b>Option Group C (Commercial Area)</b>			
I. Information Technology and its Applications in Business	75	150	50
II. Essential of e-Commerce	75		
<b>Option Group D (Money Banking &amp; Insurance Area)</b>			
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. Singhania 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 for 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.

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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 managementAccounting; Role of managment accounting in decision making; Managementaccounting vs financial accounting; Tools and techniques of management accounting;Financial statement; Objectives and methods of financial statements analysis; Ratioanalysis; 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 fordecision 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 standardcosting; 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, Roger & Reece, at 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; Printice 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 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; Importnace 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, Inverntory control; Order processing.
- UNIT-V** Promotion: Methods of promotion; Optimum promotion mix; Advertising media - the irraltative 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 Charles 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, New Delhi.

  
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