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. 10th 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. 5th 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. 2nd 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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GEOGRAPHY

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

   Paper - I Resource and Environment
   Paper - II Geography of India (with special reference to Chhattisgarh)
   Paper - III Practical Geography

2. Each theory paper shall be of three hours' duration.
3. Candidates will be required to pass separately in theory and practical examinations.
4. Each theory paper is divided into five units.
5. (a) In the practical examination the following shall be allotment of time and marks.

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

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

PAPER - I
RESOURCES AND ENVIRONMENT
M.M. 50

(Paper Code-0248)

A. Resources

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

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

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

B. Environment

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

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

PAPER - II
GEOGRAPHY OF INDIA
M.M. 50

(With Special reference to Chhattisgarh)

(Paper Code-0249)

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

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

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

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

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

SUGGESTED READING :

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

PAPER - III

PRACTICAL GEOGRAPHY

M.M. 50

UNIT-I Band graph, Hythergraph and Climograph. Square root, cube-root and vernier scales.

UNIT-II Map Projection : Conical Projection : one standard parallel, two standard parallels, Bonne's, Ployconic, Polar Zenithal Projections; Gnomonic, Stereographic and Orthographic.

UNIT-III Study and Interpretation of Indian topographical sheets : classification and numbering system, Interpretation of topographical sheets with respect to cultural and physical features.

UNIT-IV Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.

UNIT-V Importance of field work in Geography. Field work and field report : physical, social and economic survey of a micro-region.

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1.3.1

Professional Ethics, Gender, Human Values, Environment and Sustainability related to the Students as a part of following curriculum:-

SNo.	Class	Subject	Topic	Link to Syllabus
1.	**B.Sc. – III**	**Zoology**	**Environment and Sustainability, Conservation of Natural Resources**	**http://www.govtcollegebarpali.in/newsData/Report39.pdf**
2.	**B.Sc. – III**	**Zoology**	**Environment Impact Assessment**	**http://www.govtcollegebarpali.in/newsData/Report39.pdf**
3.	**B.Sc. – III**	**Botany**	**Environment and Sustainability**	**http://www.govtcollegebarpali.in/newsData/Report39.pdf**
4.	**B.Sc. – III**	**Zoology**	**Environmental Biology**	**http://www.govtcollegebarpali.in/newsData/Report39.pdf**
5.	**B.A. /B.Sc./B.Com – I**	**Environment Study**	**Environment Study and Human Rights**	**B.A.-I http://www.govtcollegebarpali.in/newsData/Report31.pdf B.Sc. – I http://www.govtcollegebarpali.in/newsData/Report37.pdf B.Com.-I http://www.govtcollegebarpali.in/newsData/Report34.pdf**
6.	**B.A. – I**	**Political Science**	**Human Rights**	**http://www.govtcollegebarpali.in/newsData/Report31.pdf**
7.	**B.A. – I**	**Sociology**	**Gender Sensitization**	**http://www.govtcollegebarpali.in/newsData/Report31.pdf**
8.	**B.A. – I**	**Geography**	**Human Adaption to Environment**	**http://www.govtcollegebarpali.in/newsData/Report31.pdf**
9.	**B.A. – III**	**Geography**	**Resources and Environment**	**http://www.govtcollegebarpali.in/newsData/Report33.pdf**
10	**B.A. – III**	**Geography**	**Classification of Environment**	**http://www.govtcollegebarpali.in/newsData/Report33.pdf**

BOTANY

PAPER-I (Paper Code-0915)

PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

M.M. : 50

UNIT-I Plant-water relations : Importance of water to plant life ; physical properties of water; diffusion and osmosis; absorption, transport of water and transpiration ; physiology of stomata.

Mineral nutrition : Essential macro and micro-elements and their role ; mineral uptake; deficiency and toxicity symptoms.

UNIT-II Transport of organic substances : Mechanism of phloem transport ; source-sink relationship ; factors affecting translocation.

Basic of enzymology : Discovery and nomenclature ; characteristics of enzymes ; concept of holoenzyme apoenzyme, coenzyme and cofactors ; regulation of enzyme activity, mechanizm of action.

Photosynthesis : Significance ; historical aspects ; photosynthetic pigments ; action spectra and enhancement effects ; concept of two photosystems; Z-scheme ; photo-phosphorylation ; Calvin cycle ; C4 pathway ; CAM plants ; photorespiration.

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

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

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

UNIT-IV Genetic engineering : Tools and techniques of recombinant DNA technology ; cloning vectors ; genomic and cDNA library ; transposable elements ; techniques of gene mapping and chromosome walking.

Biotechnology : Functional definition ; basic aspects of plant tissue culture ; cellular totipotency, differentiation and morphogenesis ; biology of Agrobacterium ; vectors for gene delivery and marker genes ; salient achievements in crop biotechnology.

PAPER-II (Paper Code-0916)

ECOLOGY AND UTILIZATION OF PLANTS M.M. : 50

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

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

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

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

UNIT-III Population ecology : Growth curves ; ecotypes ; ecads.

Biogeographical regions of India.

Vegetation types of India : Forests and grasslands.

UNIT-IV Utilization of Plants

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

Fibres : Cotton and jute.

Vegetable oils : Groundnut, mustard and coconut

General account of sources of firewood, timber and bamboos.

UNIT-V Spices : General account.

Medicinal plants : General account

Beverages : Tea and coffee.

Rubber.

PRACTICAL SCHEME **M.M. 50**

01.	Physiology	08
02.	Ecology	08
03.	Utilization of Plants	05
04.	Biochemistry / Biotechnology	05
05.	Spotting (1-5 spots)	10
06.	Project work	04
07.	Viva V.	05
08.	Sessional	05
		50

Suggested Laboratory Exercises

1. To study the permeability of plasma membrance using different concentrations of organicsolvents.
2. To study the effect of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
4. To study the enzyme activity of catalase and peroxidase as inflenced by pH and temperature.
5. Comparison of the rate of respiration of various plant parts.
6. Separation of chloroplast pigment by solvents method.
7. Determinig the osmotic potential of vacuolar sap by plsmolytic method.
8. Determining the water potental of any tuber.
9. Separation of amino acids in a mixtue by paper chromatography and their identification by comparison with standards.
10. Bioassay of auxin, cytokinin, GA. ABA and ethylene using appropriate plant material.
11. Demonstration of the technique of micropropagation by using different explants, e.g. axillary buds, shoot meristems.
12. Demonstration of the technique of anther culture.
13. Isolation of protoplasts from different tissues using commercially available enzymes.
14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.

Suggested Laboratory Expercises (Ecology)

1. To determine minimum number of quadrats required for reliable estimate of biomass in grasslands.
2. To study the frequency of herbaceous species in grassland and to compare the frequency distribution with Raunkair's Standard Frequency Diagram.
3. To estimate importance Value Index for grassland species on the basis of relative frequency, relative density and relative biomass in protected and grazed grassland.
4. To measure the vegetation cover of grassland through point frame method.
5. To measure the aboveground plant biomass in a grassland.
6. To determine Kemp's constant for dicot and monocot leaves and to estimate the leaf area index of a grassland community.
7. To determine diversity indices (richness, Simpson, Shannon-Wiener) in grazed and protected grassland.
8. To estimate bulk density and porosity of grassland and woodland soils.
9. To determine moisture content and water holding capacity of grassland and woodland soil.
10. To study the vegetation structure through profile diagram.
11. To estimate transparency, pH and temperature of different water bodies.
12. To measure dissolved oxygen content in polluted and unpolluted water samples.
13. To estimate salinity of different water samples.
14. To determine the percent leaf area injury of different leaf samples collected around polluted sites.
15. To estimate dust holding capacity of the leaves of different plant species.

PRACTICAL

Suggested Laboratory Exercises (for Utilization of Plants)

1. Food Plants : Study of the morphology, structure and simple microchemical tests of the food storing tissues in rice, wheat, maize, potato and sugarcane, Microscopic exmaination of starch in these plants (excepting sugarcane)
2. Fibres : Study of cotton flowers, sectioning of the cotton ovules/developing seeds to trace the origin and development of cotton fibres. Microscopic study of cotton and test for cellulose, Sectioning and staining of jute stem to show the location and development of firbres. Microscopic structure. Test for lignocellulose.
3. Vegetable oils : Study of hand sections of groundnut, mustard and coconut and staining of oil droplets by Sudan III and Sudan Black.
4. Field visits : To study sources of firewood (10 plants), timber-yielding trees (10 trees) and bamboos. A list to be prepared mentioning special features.
5. Spices : Examine black pepper, cloves, cinnamon (hand sections) and opened fruits of cardamom and describe them briefly.
6. Preparation of an illustrated inventory of 10 medicinal plants used in indigenous systems of medicine or allopathy : Write their botanical and common names, parts used and disease/disorders for which they are prescribed.
7. Beverages : Cut Sections of boiled coffee beans and tea leaves to study the characterstic structural features.
8. Rubber : Collect illustrative materials of Hevea brasillensis ; morphology of the plant and tapping practices, history of rubber. List the many uses of rubber.

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ZOOLOGY

Paper-I (Paper Code-0917)

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

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

UNIT-I (ECOLOGY)

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

UNIT-II (ENVIRONMENTAL BIOLOGY)

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

UNIT-III (TOXICOLOGY)

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

UNIT-IV (MICROBIOLOGY)

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

UNIT-V (MEDICAL MICROBIOLOGY)

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

PAPER-II

(Paper Code-0918)

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

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

UNIT-I (GENETIC'S)

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

UNIT-II (CELL PHYSIOLOGY)

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

UNIT-III (BIOCHEMISTRY)

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

UNIT-IV (BIOTECHNOLOGY)

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

UNIT-V (BIOTECHNIQUE)

Principles and techniques about the following

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

PRACTICAL WORK

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

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

1. Estimation of population density, Percentage frequency, Relative density.
2. Analysis of Producers and consumers in grassland.
3. Detection of gram-negative and gram-positive bacteria.
4. Blood group detection (A,B, AB & O).
6. R.B.C., W.B.C. count.
6. Blood coagulation time.
7. Preparation of Hematin crystals from blood of rat.
8. Observation of Drosophila, wild and mutant.
9. Chromatography-Paper or gel.
10. Colorimetric estimation of hemoglobin.
11. Mitosis in onion root tip.
12. Biochemical detection of Carbohydrate, Protein and Lipid.
13. Study of Permanent slides of Parasites, based on theory paper.
14. Working Principles of pH meter, Colorimeter, centrifuge and microscopes.

SCHEDULE FOR PRACTICAL EXAMINATION

Duration : 4 Hrs. **Max Marks : 50**

1.	Haematological Experiment : (R.B.Cs./W.B.Cs. Counting/Blood group detection)	08 marks
2.	Ecological Experiment : (Estimation of Population Density/Frequency/relative Density)	06 marks
3.	Staining of Gram +ve and Gram -ve Bacteria/cytological experiment : Mitosis in onion root tip	05 marks
4.	Biochemical Experiment : (biochemical detection of carbohydrate/protein lipid)	06 marks
5.	Chromatography	05 marks
6.	Spotting :	10 marks
	Study of permanent slides of Parasites : 3	
	Comments on working Principles of pH meter / Calorimeter / centrifuge and Microscope :	
7.	Viva Voce	05 marks
8.	Sessional :	05 marks

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बिलासपुर विश्वविद्यालय, बिलासपुर (छ.ग.)

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क्र. 1186 /अका./2014 बिलासपुर दिनांक 11/9/14

अधिसूचना

बिलासपुर विश्वविद्यालय से सम्बद्ध समस्त महाविद्यालय को सूचित किया जाता है कि केन्द्रीय अध्ययन मण्डल द्वारा अनुमोदित **पर्यावरण अध्ययन** के संशोधित पाठ्यक्रम "**पर्यावरण अध्ययन व मानवाधिकार**" स्नातक स्तर पर शिक्षा सत्र 2014–15 से प्रभावशील होगा । (अनुमोदित पाठ्यक्रम संलग्न)

आदेशानुसार,

कुलसचिव

पृ.कमांक 1187 /अका./2014 बिलासपुर, दिनांक 11/9/14 /

प्रतिलिपि:–

1. कुलपति के निज सहायक को माननीय कुलपति महोदय के सूचनार्थ प्रेषित।
2. परीक्षा नियंत्रक / उप–कुलसचिव (परीक्षा/गोपनीय) बिलासपुर विश्वविद्यालय, बिलासपुर को सूचनार्थ प्रेषित ।
5. प्राचार्य, समस्त सम्बद्ध महाविद्यालय, को इस आशय के साथ प्रेषित की महाविद्यालय में केन्द्रीय अध्ययन मण्डल द्वारा अनुमोदित "**पर्यावरण अध्ययन व मानवाधिकार**" विषय का अंगीकृत पाठ्यक्रम अध्ययन–अध्यापन कराना सुनिश्चित करें ।
6. संपादक, दैनिक ..... को इस अनुरोध के साथ प्रेषित की कृपया उपरोक्त अधिसूचना को अपने लोकप्रिय दैनिक समाचार पत्र में छात्रहीत में प्रकाशित करने का कष्ट करें ।

कुलसचिव

Part-I

SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS FOR UNDER GRADUATE

'इन्वाहरमेंटल 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 होगें एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होगें ।

सैद्धांतिक प्रश्नों पर अंक –75 (सभी प्रश्न इकाई आधार पर रहेगें जिसमें आंतरिक 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 रखेगें ।

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 में संयुक्त रूप से 33% (तैतींस 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 अधिक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे ।

कृपया पर्यावरण विज्ञान व मानवाधिकार विषय का पाठ्यक्रम अनुमोदनार्थ प्रस्तुत है।

Dy Reg

11/11/13

1. Prof A.K. Gupta – Addnl. 11.11.13
2. Prof C.L. Patel 11-11-13
3. Prof R. Prasad

Part-I

SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS FOR UNDER GRADUATE

(paper code - 0828)

M.M. 75

UNIT -I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES:

Definition, Scope and Importance

Natural Resources:

Renewable and Nonrenewable Resources:

Natural resources and associated problems

(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.

UNIT-II ECOSYSTEM **(12 Lecturer)**

(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, Characteristic Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecossystem.

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(b) Biodiversity and its Conservation

- Introduction - Definition: genetic, species and ecosystem diversity.
- Bio-geographical classification of India.
- Value of biodiversity: consumptive use, productive use, social, ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.
- Hot spots of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

UNIT-III ENVIRONMENTAL POLLUTION **(12 Lecturer)**

Definition

(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.

(b) Environmental Management **(12 Lecturer)**

- 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.

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Wasteland reclamation.

- Environment Protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT-IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights.

Protection of Human Rights under the UNO Charter, Protection of Human Rights under the Universal Declaration of Human Rights, 1948

Convention on the Elimination of all Forms of Discrimination against women

Convention on the Rights of the Child, 1989

UNIT-V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State Policy under the Constitution of India, Enforcement of Human Rights in India

Protection of Human Rights under the Human Rights Act, 1993 - National Human Rights Commission, State Human Rights Commission and Human Rights court in India.

Fundamental Duties under the Constitution of India

Reference/Books Recommended:

1. SK Kapoor- Human rights under International Law and Indian Law
2. HO Agrawal- Internation Law and Human Rights
3. एस. के. कपूर – मानव अधिकार
4. जे. एन. पान्डेय – भारत का संविधान
5. एम. डी. चतुर्वेदी – भारत का संविधान
6. J. N. Pandey - Constitutional Law of India
7. Agarwal K.C. 2001 Environmental Biology, Nidi Pub. Ltd. Bikaner
8. Bharucha Erach, the Biodiversity of India, Mapin Pub. Pvt. Ltd. Ahmedabad 380013, India, Email: mapin@icenet.net(R)

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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.m 473p

15. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R)

16. Heywood, V.H. & Watson, R.T. 1995 Global Biodiversity Assessment, Cambridge Uni. Press 1140p

17. Jadhav H. & Bhosale, V.H. 1995, Environmental Protection and Law. Himalaya pub. House, Delhi 284p

18. Mckinney M.L. & School R.M. 1996, Environmental Science systems & Solutions, web enhanced edition, 639p

19. Mhaskar A.K. Matter Hazardous, Techno-Science Publication (TB)

20. Miller T.G. Jr. Environment Science, Wadsworth Publishing 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 Hidu (M)

25. Townsend C. Harper J. and Michael Begon, Essentials of Ecology, Blackwell Science (TB)

26. Trivedi R.K. Handbook of Environment Laws, Rules, Guidelines, Compliances and Standards, Vol Iand 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

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