

UNIT-1

SULLABUS FOR ENVIRONMENTAL STUDIES" FOR UNDER GRADUATE M.M.75
THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES :

Definition, scope and importance

Need for public awareness.

Natural Resources :

Renewable and nonrenewable resources :

Natural resources and associated problems.

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



Role of an individual in conservation of natural resources.
Equitable use of resources for sustainable life-styles.

(9 Lecture)

UNIT-II ECOSYSTEMS

Concept of an ecosystems.

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 the following ecosystem :
 - a. Forest ecosystem
 - b. Grassland ecosystem
 - c. Desert ecosystem
 - d. Aquatic ecosystems (Ponds, lakes, rivers, oceans, estuaries)

(9 Lecture)

UNIT-III Biodiversity and its Conservation

- Introduction - Definition : genetic, species and ecosystem diversity.
- Biogeographical classification of India.
- Value of biodiversity : consumptive use, productive use, social, ethical, 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/wildlife conflicts.
- Endangered and endemi species of India.
- Conservation of biodiversity : In situ and Ex-situ conservation of biodiversity

(9 Lecture)

UNIT-IV Environmental Pollution

Definition

Causes, effects and control measures of -

- a. Air pollution
- b. Water pollution
- c. Soil pollution
- d. Marine pollution
- e. Noise pollution
- g. Nuclear hazards.

Solid waste management : Causes, effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Pollution case studies

Disaster management : floods, earthquake, cyclone and landslides.

Human Population and the Environment

Population growth, variation among nations,

Population explosion - Family Welfare Programme

Environment and human health.

Human Rights.

(9 Lecture)



UNIT-V Social Issues and the Environment

- 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. Case studies.
- Environmental ethics : Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act.
- Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public awareness.
- Value Education
- HIV/AIDS
- Women and Child Welfare.
- Role of Information Technology in Environment and Human Health.
- Case Studies.

(9 Lecture)

FIELD WORK

- Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain.
- Visit to local polluted site : Urban/Rural/Industrial/Agriculture:
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

REFERENCES :

1. Agarwal K.C. 2001 Environmental Biology, NiDi Publ. Ltd. Bikaner.
2. Bharucha Erach, the Biodiversity of India, Mapin Publishing Pvt. Ltd. Ahmedabad 380 013, India, Email : mapin@icenet.net(R)
3. Bruinner R.C., 1989, Hazardous Waste Incineration, Mc Graw Hill Inc. 480p.
4. Clark R.S., Marine Pollution, Clarendon Press Oxford (TB).
5. Cuninghame, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 200.
6. Dr A.K. Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment (R)
8. Gloick, H.P. 1993 Water in crisis, Pacific Institute for studies in Deve, Environment & Security. Stockholm Eng. Institute. Oxford Univ. Press. 473p.
9. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R).
10. Heywood, V.H. & Watson, R.T. 1995 Global Biodiversity Assessment, Cambridge Univ. Press 1140p.
11. Jadhav H. & Bhosale, V.H. 1995, Environmental Protection and Laws. Himalaya Pub. House. Delhi 284p.
12. Mckinney M.L. & School R.M. 1996, Environmental Science system solutions, Web enhanced editio, 639p.



बी.ए./बी.एस.सी. तृतीय वर्ष
प्रश्न पत्र-तृतीय
प्रायोगिक भूगोल

अधिकतम अंक : 50

खण्ड (अ)

मानचित्र पठन एवं निर्वचन

20

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

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

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

खण्ड (ब)

सर्वेक्षण एवं क्षेत्रीय प्रतिवेदन

20

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

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

प्रायोगिक पुस्तिका और मौखिक परिक्षण 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*. 4th 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*, 4th 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



B.Sc. PART - I

NIT-I

SULLABUS FOR ENVIRONMENTAL STUDIES" FOR UNDER GRADUATE .M.M.75
THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES :

Definition, scope and importance
Need for public awareness.

Natural Resources :

Renewable and nonrenewable resources :
Natural resources and associated problems.

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

1:-Part-I



Role of an individual in conservation of natural resources.
Equitable use of resources for sustainable life-styles.

(9 Lecture)

UNIT-II ECOSYSTEMS

Concept of an ecosystems.

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 the following ecosystem :
 - a. Forest ecosystem
 - b. Grassland ecosystem
 - c. Desert ecosystem
 - d. Aquatic ecosystems (Ponds, streams, lakes, rivers, oceans, estuaries)

(9 Lecture)

UNIT-III Biodiversity and its Conservation

- Introduction - Definition : genetic, species and ecosystem diversity.
- Biogeographical classification of India.
- Value of biodiversity : consumptive use, productive use, social, ethical, 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/wildlife conflicts.
- Endangered and endemi species of India.
- Conservation of biodiversity : In situ and Ex-situ conservation of biodiversity

(9 Lecture)

UNIT-IV Environmental Pollution

Definition

Causes, effects and control measures of -

- a. Air pollution
- b. Water pollution
- c. Soil pollution
- d. Marine pollution
- e. Noise pollution
- g. Nuclear hazards.

Solid waste management : Causes, effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Pollution case studies

Disaster management : floods, earthquake, cyclone and landslides.

Human Population and the Environment

Population growth, variation among nations,

Population explosion - Family Welfare Programme

Environment and human health.

Human Rights.

(9 Lecture)



UNIT-V Social Issues and the Environment

- 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. Case studies.
- Environmental ethics : Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act.
- Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public awareness.
- Value Education
- HIV/AIDS
- Women and Child Welfare.
- Role of Information Technology in Environment and Human Health.
- Case Studies.

(9 Lecture)

FIELD WORK

- Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain.
- Visit to local polluted site : Urban/Rural/Industrial/Agriculture.
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

REFERENCES :

1. Agarwal K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Bharucha Erach, the Biodiversity of India, Mapin Publishing Pvt. Ltd. Ahmedabad 380 013, India, Email : mapin@icenet.net(R)
3. Bruinner R.C., 1989, Hazardous Waste Incineration; Mc Graw Hill Inc. 480p.
4. Clark R.S., Marine Pollution, Clarendon Press Oxford (TB).
5. Cuningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 200.
6. Dr A.K. Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment (R)
8. Gloick, H.P. 1993 Water in crisis, Pacific Institute for studies in Deve, Environment & Security. Stockholm Eng. Institute. Oxford Univ, Press. 473p.
9. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R).
10. Heywood, V.H. & Watson, R.T. 1995 Global Biodiversity Assessment, Cambridge Univ. Press 1140p.
11. Jadhav H. & Bhosale, V.H. 1995, Environmental Protection and Laws. Himalaya Pub. House. Delhi 284p.
12. Mckinney M.L. & School R M. 1996, Environmental Science systems, Web enhanced editio, 639p.



B. Com. PART - I

NIT-1

SULLABUS FOR ENVIRONMENTAL STUDIES" FOR UNDER GRADUATE M.M: 75

THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES :

Definition, scope and importance

Need for public awareness.

Natural Resources :

Renewable and nonrenewable resources :

Natural resources and associated problems.

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

1:-Part-1



स्नातक प्रथम वर्ष - अनिवार्य विषय
पर्यावरण अध्ययन

Role of an individual in conservation of natural resources.
Equitable use of resources for sustainable life-styles.

(9 Lecture)

UNIT-II ECOSYSTEMS

Concept of an ecosystems.

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 the following ecosystem :

a. Forest ecosystem

b. Grassland ecosystem

c. Desert ecosystem

d. Aquatic ecosystems (Ponds, streams, lakes, rivers, oceans, estuaries)

(9 Lecture)

UNIT-III Biodiversity and its Conservation

Introduction - Definition : genetic, species and ecosystem diversity.

Biogeographical classification of India.

Value of biodiversity : consumptive use, productive use, social, ethical, 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-wildlife conflicts.

Endangered and endemi species of India.

Conservation of biodiversity : In situ and Ex-situ conservation of biodiversity

(9 Lecture)

UNIT-IV Environmental Pollution

Definition

Causes, effects and control measures of -

a. Air pollution

b. Water pollution

c. Soil pollution

d. Marine pollution

e. Noise pollution

g. Nuclear hazards.

Solid waste management : Causes, effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Pollution case studies

Disaster management : floods, earthquake, cyclone and landslides.

Human Population and the Environment

Population growth, variation among nations,

Population explosion - Family Welfare Programme.

Environment and human health.

Human Rights.

Lecture)

(8)

B.A.-Part-I



UNIT-V Social Issues and the Environment

- 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. Case studies.
- Environmental ethics : Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act.
- Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public awareness.
- Value Education
- HIV/AIDS
- Women and Child Welfare.
- Role of Information Technology in Environment and Human Health.
- Case Studies.

(9 Lecture)

FIELD WORK

- Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain.
- Visit to local polluted site : Urban/Rural/Industrial/Agriculture.
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

REFERENCES :

1. Agarwal K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Bharucha Erach, the Biodiversity of India, Mapin Publishing Pvt. Ltd. Ahmedabad 380 013, India, Email : mapin@icenet.net(R)
3. Brunner R.C., 1989, Hazardous Waste Incineration; Mc Graw Hill Inc. 480p.
4. Clark R.S., Marine Pollution, Clarendon Press Oxford (TB).
5. Cuninghame, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 200.
6. Dr A.K. Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment (R)
8. Gloick, H.P. 1993 Water in crisis, Pacific Institute for studies in Deve, Environment & Security. Stockholm Eng. Institute. Oxford Univ, Press. 473p.
9. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Mumbai (R).
10. Heywood, V.H. & Watson, R.T. 1995 Global Biodiversity Assessment, Cambridge Univ. Press 1140p.
11. Jadhav H. & Bhosale, V.H. 1995, Environmental Protection and Laws. Himalaya Pub. House. Delhi 284p.
12. McKinney M.L. & School R.M. 1996, Environmental Science systems & solutions, Web enhanced editio, 639p

B.A.-Part-I

