JECRC UNIVERSITY

ENVIRONMENTAL STUDIES

(Syllabus common for graduate courses in the University)

Max. Marks 100 3hrs duration Min. Pass Marks 36

Theory paper will contain seventeen questions in all. The students will be required to attempt nine questions in all.

Q. 1.- Will have 20 sub-questions of multiple choice/one word etc. Each sub-questions will carry one mark. This question will be covering the entire syllabus and will be compulsory.

Q. 2.to Q. 11. Short answer type questions (10) of 20 Marks of which any five will have to be answered. These questions too will be covering the entire syllabus.

Q.12 to Q17. Essay type questions will be 6 in number of 20 marks each, there should be one question from each unit. Students will attempt any three questions.

Note :

1. The marks secured in this paper shall not be counted in awarding the division to a candidate
2. The candidates will have to clear this compulsory paper in three chances
3. Non-appearing or absence in the examination of compulsory paper will be counted as a chance

CREDIT-1 15 Hours

Unit I The Multidisciplinary nature of environmental studies: Definition, scope and importance

a) Need for public awareness

b) History of environmental studies

c) Important personalities in the world and India contributing to environmental concepts

d) NGOs working in the field of environmental conservation in India.

Unit II Ecosystems

a) Concept of an ecosystem.

b) Structure and function of an ecosystem

c) Producers, consumers and decomposers
d) Energy flow in ecosystem

e) Food chains, food webs and ecological pyramids

f) Introduction, types, characteristic features, structure and function of the following ecosystem:

1) Forest ecosystem

2) Grassland ecosystem

3) Desert ecosystem.

4) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) Environmental ethics: Issues and possible solutions

g) Environmental ethics: Issues and possible solutions

**CREDIT –II 15 hours**

**Unit -I Natural Resources: Renewable and non-renewable resources:**

a) Forest resources: Use and over-exploitation, deforestation case studies. Timber extraction, mining, dams and their effects on forest and tribal people

b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. Water conservation, rain water harvesting, watershed management

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 need, renewable and non-renewable energy sources, use of alternate energy sources. Case studies

f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

g) Role of an individual in conservation of natural resources.

h) Equitable use of resources for sustainable lifestyles.

**Unit-II Biodiversity and its conservation**

  a) Biogeographical classification of India
b) Value of Biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values

c) Biodiversity at global, National and local level

d) India as a mega-diversity nation

e) Hot-spot of biodiversity

f) Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts

g) Endangered and endemic species of India

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

i) Population growth, variation among nations.

j) Environment and human health.

CREDIT-III 15 Hour

Unit I Environmental Pollution

Causes and effects and control measures of:-

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

Unit II Social Issues and the Environment

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

b) Disaster management: floods, earthquake, cyclone and land-slides

c) From Unsustainable to Sustainable development

d) Urban problems related to energy

e) Climate change, global warming, acid rain, ozone layer depletion nuclear accidents and holocaust.

f) Consumerism and waste product

g) Environmental Protection laws in India
Examination Pattern: End semester examination paper will have three parts

Part A- Multiple choice questions (20)                                                                  20 Marks
Part B- Short answer type questions (10). Attempt any five.                                 20 Marks
Part C- Essay type questions (6), one from each section. Attempt any three         60 Marks

References :

2. Bharucha Erach, The Biodiversity of India, Map in Publishing Pvt. Ltd. Ahemdabad-380013, India, E-mail: Mapincenet, net(R)
7. Down to Earth, Centre for Science and Environment (R)
18. Survey of the Environment. The Hindu(M)
23. (M) Magazine (R) Reference (TB) Textbook