



**DIRECTORATE OF DISTANCE EDUCATION**  
**KURUKSHETRA UNIVERSITY,**  
**KURUKSHETRA-136 119**

(Established by the State Legislature Act XII of 1956)  
("A" Grade, NAAC Accredited)

**SCHEME OF PAPERS**  
**FOR**

**MA in Environmental Education (Final Year)**

**SESSION 2016-17**

Sr. No.	Course No.	Course	Internal Assessment	Max Marks	Total Marks
1	Paper-V	Environmental Impacts and Education	20	80	100
2	Paper-VI	Natural Resources	20	80	100
3	Paper-VII	Wildlife and its their Management Conservation	20	80	100
4	Paper-VIII	Water Resources and their Management	20	80	100
		Total	-		400

Note1: Each Theory paper will be of 3 hours.

## PAPER V: ENVIRONMENTAL IMPACTS AND EDUCATION

Max. Marks: 80+20 (Internal Assessment)

Time: 3 hours

### Note:-

Nine questions will be set in all.

Question No.1, which will be objective/short answer type covering the entire syllabus, will be compulsory.

The remaining eight questions will be set unit-wise with two questions from each Unit I, II, III and IV.

The candidates will be required to attempt Q.No.1 and four others, selecting one question from each unit. All the questions carry equal marks.

### UNIT-I

Ecosystem: Concept; relationship between ecosystem, organisms and environment. Factors that control cycling of elements in terrestrial ecosystem; natural Vs artificial ecosystem; interaction between biotic and abiotic process (positive and negative feedback).

Energy Flow in ecosystem: Sun as source of energy, nature of its radiation, heat budget of earth, earth's temperature and atmosphere, Energy flow models.

### UNIT-II

Major Biomes of the world: Concept of biomes, Terrestrial biomes: Grasslands, Desserts, Forests. Aquatic biomes: fresh water biomes (Lentic and Lotic), Marine Biomes. Sustainable forest management.

Remote Sensing and its application in Ecology.



### **UNIT -III**

Standards for Environmental Quality Assessment and Monitoring,:  
Environmental protection standards in India, International Standards for  
Environmental Protection, Environmental Quality Monitoring: ISO 14000,  
ISO 14000 – impact on developing countries.

Environmental Impact Assessment (EIA): Origin and development, Development  
and environment appraisal process in India, EIA -- purpose, aim, values,  
Principal and process, environment components of EIA, Main participants  
of EIA process, impact identification methods.

### **UNIT- IV**

Environmental Audit: Introduction: Definition; types of auditing, Features  
of Effective Auditing, Programme planning and organization of Auditing  
Programme, Pre visit data collection, Auditing Protocol, Onsite Audit; Data  
Sampling; Inspection and Evaluation and Presentation, Audit Report; Action  
plan, Management of Audit, Benefits of Environmental Audit, Environmental  
Audit Programme in India

## **PAPER VI: NATURAL RESOURCES**

**w.e.f. 2014-15**

**Max. Marks: 80+20 (Internal Assessment)**

**Time: 3 hours**

**Note:-**

Nine questions will be set in all.

Question No.1, which will be objective/short answer type covering the entire  
syllabus, will be compulsory.

The remaining eight questions will be set unit-wise with two questions from each Unit I, II, III and IV.

The candidates will be required to attempt Q.No.1 and four others, selecting one question from each unit. All the questions carry equal marks.

### UNIT - I

Introduction to natural resources and their consumption patterns. Types of natural Resources: renewable and non-renewable resources and their limitations. Supply and demand of natural resources.

Minerals resources: Their use, Mining and Sustainability.

Land Resources: Land as a resource, Land degradation, Man induced landslides, Soil erosion and Desertification.

### UNIT - II

Forest Resources: Use and over-exploitation, Deforestation and timber extract, Dams and their effect on forest and tribal people.

Animal Resources: Utility of animal resources in agriculture, transport and food.

Food Resources: World food problems, Changes caused by agriculture and overgrazing, Effect of modern agriculture; Fertilizer-pesticide problems, Water logging; Salinity.

### UNIT - III

Energy Resources: Non renewable energy resource: pattern of consumption, issues and options. Fossil fuels: reserves of coal, its classification and basic geology.

Types of renewable energy source and their environmental significance. Sustainable development of energy resources.



## UNIT -IV

Environmental impact of coal mining, Reserves of oil and gas, basic geology, environmental impact of their production and consumption, Nuclear Energy its resources, Nuclear power plants, Nuclear waste disposal, Geothermal energy: water dominated and vapour dominated systems. Global Energy source: An overview. Global energy consumption and energy conservation. Techniques of Energy conservation. Indian programmes of renewable energy.

## PAPER VII: WILDLIFE AND ITS CONSERVATION

w.e.f. 2014-15

Max. Marks: 80+20 (Internal Assessment)

Time: 3 hours

### Note:-

Nine questions will be set in all.

Question No.1, which will be objective/short answer type covering the entire syllabus, will be compulsory.

The remaining eight questions will be set unit-wise with two questions from each Unit I, II, III and IV.

The candidates will be required to attempt Q.No.1 and four others, selecting one question from each unit. All the questions carry equal marks.

## UNIT - I

Wildlife: Distribution and current status in India, Enlistments of various Zones and their characteristics. Inter-relationship between forest and Wild life conservation. Role of Zoological and Botanical garden in conservation.

## UNIT-II

Current practices of conservation (World and in India): World Conservation strategies and conservation of biological diversity, Establishment of representatives network of protected area, Management of protected area and habitat restoration. Application of Remote sensing and GIS in habitat characterization.

## UNIT -III

Scientific management of wildlife and role of research in, In situ and Ex situ conservation of threatened animals and plants. Wildlife education and interpretation, research and monitoring. National and international conservation organization and their role.

Wildlife census: Planning a wildlife census, sample counts, block counts, roadside counts, dung counts, Pug mark census, and water hole census. Wildlife tourism.

## UNIT IV

Restorations of endangered species and role of WWF, IUCN, UNEP, Red Data Book.

Wildlife legislations in India: Wild Life Protection Act. Principles and procedure for enforcement of wildlife laws. Control of illegal trade in Wildlife, Wildlife forensics and its application as a tool in support of enforcement of wildlife law.



# **PAPER VIII: WATER RESOURCES AND THEIR MANAGEMENT**

w.e.f. 2014-15

**Max. Marks: 80+20 (Internal Assessment)**

**Time: 3 hours**

## **Note:-**

Nine questions will be set in all.

Question No.1, which will be objective/short answer type covering the entire syllabus, will be compulsory.

The remaining eight questions will be set unit-wise with two questions from each Unit I, II, III and IV.

The candidates will be required to attempt Q.No.1 and four others, selecting one question from each unit. All the questions carry equal marks.

## **UNIT-I**

Historic perspectives on water use and development. The Hydrological Cycle, Climate and weather. Water Resources: Glaciers, surface and subsurface water, Marine water, Impact of changing environment on water resources, anthropogenic impacts.

Water Resources and Economic development.

## **UNIT-II**

Water quality, parameters and resources management: Water use and consequences of ground water withdrawn, impact of agriculture on ground water tables, confined and unconfined aquifers, Salt water, Local, State & Central water management agencies.

Water Quality & Ecology: Water, Fish and Wildlife.

### UNIT -III

Water society: Water available and demand, Flood hazards and hydrology, flood hazard planning and protection, Dams and reservoir, droughts.

Water Conservation, Rain water Harvesting and watershed management, ground water recharge.

### UNIT IV

Water Resources and Politics: Water use and conflicts, Politics of water scarcity, Interlinking of river system, Trans boundary and interstate disputes (Satluj Yamuna Link Canal dispute; Cauvery water allocation dispute, The Indus water treaty).

Social issues; Water and modern city, emerging water issues. Water allocation/ conservation / pollutions laws.