

ENVIRONMENTAL SCIENCE

Class 11th M. Marks: 100 Practical: 30 Theory:70

Unit 1:- Understanding Environment

(7 marks)

- Concept of Environment and its types; physical, biological; and social environment.
- Scope and importance of Environmental Science.
- Components of environment.
 - a. Lithosphre
 - b. Hydrosphere
 - c. Atmosphere
 - d. Biosphere
- Origin of Earth
- Human and environment relationship.

Unit 2: Ecology

- Ecology (definition and types)
- Concept and structure of ecosystem)
- Trophic relationship (food chain, food web, ecological pyramids)
- Functions of ecosystem (energy flow in an ecosystem)
- Ecological Succession (types and stages)

Unit 3: Ecological Interactions and Adaptations

(7 marks)

(7 marks)

- Ecological interaction and its types
- Inter specific interaction: positive interaction (mutualism, proto-cooperation, commensalism, sysmbiosis and scavenging), negative interaction (parasitism. Competition and ammensalism)
- Intra specific interaction: cooperation and competitive
- Adaptations: concept and need
- Types of adaptations (with special reference to wind, light and temperature)

Unit 4: Population Ecology

(7 marks)

- Concept of species, population and communities.
- Population Dynamics (population size and density, dispersion, natality, mortality, age structure)
- Population growth (exponential and logistic growth)
- Factors regulating population growth (competition, weather and climate, territory, predation, natural disasters and diseases)



 Human population growth (Malthusain theory and neo- Malthusian theory, Demographic Transition)

Unit 5: Energy Resources

(7 marks)

- Concept of energy resources
- Non- renewable energy resources: coal, petroleum, natural gas
- Renewable energy resources (solar wind and hydropower)
- Nuclear energy (uses and limitations)
- Biofles

Unit 6: Earth's Environment and Natural Disasters

(7 marks)

- Atmosphere: structure and composition
- Hydrosphere: distribution, hydrological cycle
- Lithosphere: structure
- Biogeochemical cycles (Carbon, Nitrogen and Phosphorous)
- Natural disasters (earthquakes, floods and volcanoes)

Unit 7: Environmental education and Awareness

(7 marks)

- Concept and need of environmental education
- Formal and informal means of environmental education
- Modes of environmental awareness
- Role of NGOs
- Environmental movements (Chipko movement, Narmada Bachao Andolan)

Unit 8: Environmental Health

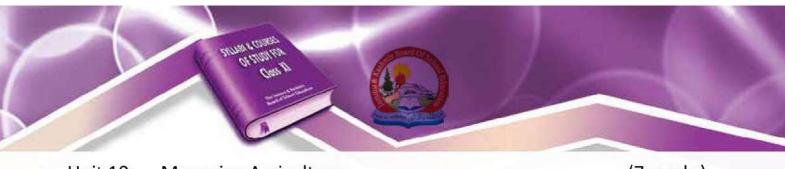
(7 marks)

- Concept of health and disease
- Water borne diseases (Cholera, Hepatistis, Typhoid)
- Air borne diseases (Influenza, Tuberculosis)
- Soil borne disease (Tetanus; Botulism)
- Occupational diseases (Silicosis, Asbestosis)

Unit 9: Natural Resources

(7 marks)

- Forest resources (types and uses)
- Animal resources (fish and livestock)
- Water resources (fresh and marine)
- Mineral resources (type and uses)
- Medicinal plants (with special reference to J&K)



Unit 10: Managing Agriculture

(7 marks)

- Concept of traditional and modern agriculture
- · Green revolution and white revolution
- Pesticides and fertilizers (types, advantage and disadvantages)
- Integrated pest control
- Food security

PRACTICALS:

(30 marks)

- 1. Study of density and abundance of different plant species in a particular are using quadrate method.
- 2. Determination of water, air and soil temperature.
- 3. Collection of locally available herbal plants and preparation of herbarium.
- 4. Field work and visit to National Park/ wild life sanctuary/ STP/ water body and preparation of a field report.
- 5. Visit to a nearby primary or middle school to impart environmental awareness.
- 6. Documentation of agricultural crops, fertilizers and pesticides used in your locality.

