MC181406

2024

B.Tech. 4th Semester End-Term Examination

Environmental Science

(New Regulation)

Full Marks – 100 28/5/24 **Time – 3 hours**

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and *any six* from the rest.

1. Answer the following: (1x10=10)

I. Which of the following is a biotic component of an ecosystem?
   a) Water
   b) Soil
   c) Plants
   d) Minerals

II. One of the primary objectives of ecology is to:
   a) Develop new species
   b) Understand the relationships between organisms and their environment
   c) Increase agricultural production
   d) Promote urban development

III. In an ecosystem, decomposers play a crucial role by:
   a) Producing energy through photosynthesis
   b) Consuming primary producers
   c) Breaking down dead organic matter and recycling nutrients
   d) Competing with primary consumers for food

IV. Which practice is a major contributor to soil erosion?
   a) Crop rotation
   b) Terrace farming
   c) Deforestation
   d) Mulching

V. Which of the following is a sustainable land use practice?
   a) Slash-and-burn agriculture
   b) Monocropping
   c) Agroforestry
   d) Over-irrigation

VI. What day is recognized as World Water Day?
   a) February 2
   b) March 22
   c) April 22
   d) May 22

VII. Itai disease in Japan was caused by consumption of rice contaminated with
   a) Mercury
   b) Iron
   c) Cadmium
   d) Zinc

VIII. Which of the following enhance the frequency of earthquakes
   a) Big dam
   b) Underground nuclear testing

c) Deep well disposal of liquid wates
d) All of these

IX. What is the unit of measurement for sound intensity?
a) Hertz
b) Decibel
c) Joule
d) Watt

X. What is the most common pollutant found in indoor air?
a) Particulate matter (PM2.5)
b) Radon
c) Carbon dioxide
d) Lead

2. a) What are the key structural components of an ecosystem, and how do these components interact to maintain ecosystem function? (5+5=10)
b) Discuss the roles of producers, consumers, and decomposers. (5)
3. a) Explain the sources of water pollution. Describe the effects of water pollution on environment and on human health. (4+6=10)
b) Briefly discuss the ways to prevent over exploitation of water resources. (5)
4. a) What is air pollution? What are the different types of air pollutants. Discuss elaborately the source collection methods of air pollution? (2+2+6=10)
b) Illustrates the effects of global warming.(5)
5. a) What are the major environmental impacts of large dams on ecosystems? Discuss how dams alter river flow regimes, sediment transport, water quality, and aquatic habitats, providing specific examples from well-known dam projects.(5+5=10)
b) What are the social and cultural impacts of constructing large dams on local communities?(5)
6. a) What are the primary sources of noise pollution in urban and rural areas? (5)
b) Discuss the contributions of transportation (air, road, rail), industrial activities, construction, and recreational activities to overall noise levels, providing specific examples from different regions. (10)
7.a) What do you understand by land degradation? Suggests some measures for controlling land degradation. (2+6=8)
b) Compare and contrast between waste land and wet land. (7)
8. a) Discuss the key provisions and objectives of the Water (Prevention and Control of Pollution) Act, 1974. (7)
b) Evaluate its impact on water quality management, including the roles of Central and State Pollution Control Boards, and identify challenges in enforcement and compliance.(8)
9. Write short notes on ***any three*** of the following: (3x5=15)
a) Industrialisation
b) Biomagnification
c)Solid waste management
d) Case study on Bhopal Gas tragedy.
e) Biogeochemical cycle