

2024

ENVIRONMENTAL SCIENCE — HONOURS

Paper : CC-13

(Environmental Pollution and Human Health)

Full Marks : 50

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Answer **any five** questions :

2×5

- (a) What is thermal stratification of lakes?
- (b) What is NAAQS?
- (c) State two major causes of soil degradation.
- (d) Define criteria pollutants.
- (e) What are the secondary air pollutants? Give any one example.
- (f) Distinguish between BOD and COD.
- (g) State two health effects of noise pollution.

2. Write short notes on (**any two**) :

5×2

- (a) Significances of Air Quality Index
- (b) Acid Mine Drainage
- (c) Effluent Treatment Plant (ETP)
- (d) Coral bleaching.

3. Answer **any three** questions :

- (a) What are the main sources of indoor air pollution in residential houses? How does VOCs affect the indoor air quality? Discuss the impact of indoor air pollution on human health and mention any two possible remedies of it. 2+3+5
- (b) State different sources of groundwater pollution. What do you mean by oxygen deficit in a polluted river stream? Discuss the biochemical effects of organic mercury with proper example. 3+2+5
- (c) Evaluate the advantages and disadvantages of using oxidation pond for waste water treatment. Explain the mechanism of trickling filter in detail. 5+5
- (d) What are the differences between classical and photochemical smog? Describe the mechanism of photochemical smog formation. What are the major health and environmental impact of photochemical smog? 3+3+4
- (e) Explain chelating agents with examples. Enumerate the role of chelating agents in pollution control. What is bioscrubber? 3+5+2

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ENVIRONMENTAL SCIENCE — HONOURS

Paper : CC-14

(Natural Resource Management and Sustainability)

Full Marks : 50

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

1. Answer **any five** questions : 2×5
  - (a) Mention two major causes of land degradation.
  - (b) Define mineral resource and mineral reserve.
  - (c) State any two (each) economic and ecological importance of forest.
  - (d) What is OTEC? State its significance.
  - (e) What is open pit mining? Mention one disadvantage of it.
  - (f) What measures are taken to increase world food production?
  - (g) Name any two renewable energy programmes in India.
  
2. Write short notes on (**any two**) : 5×2
  - (a) Management of water crisis in India
  - (b) Radioactive waste storage and risk of contamination
  - (c) Environmental impact of non-renewable energy consumption
  - (d) Concept of Sustainability.
  
3. Answer **any three** questions :
  - (a) Write the differences between active and passive solar heating systems. Explain the advantages and challenges of nuclear energy. 4+6
  - (b) Briefly explain the steps involved in the formation of natural gas. Write the benefits of hydropower development. 6+4
  - (c) What do you mean by integrated resource management? Briefly explain ecological and economic approaches in resource management. 2+4+4
  - (d) What do you mean by nuclear fission and nuclear fusion? Discuss ocean mining for mineral resources. Briefly elaborate future of renewable energy in India. 2+4+4
  - (e) What is sustainable forestry? Write the key functions of forests. Mention the impacts of deforestation and briefly explain the various forest conservation strategies. 2+2+6

2024

ENVIRONMENTAL SCIENCE — HONOURS

Paper : DSE-B-2

(Natural Hazards and Disaster Management)

Full Marks : 50

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Answer **any five** questions : 2/5
  - (a) What do you mean by Dam induced seismicity?
  - (b) What do you know about Sendai Framework?
  - (c) What is the relation between risk and vulnerability?
  - (d) What are avalanches?
  - (e) What is a cloud burst?
  - (f) Name one rapid onset and one slow onset disaster.
  - (g) State two intangible losses of disaster.
  
2. Write short notes on (**any two**) : 5/2
  - (a) Sand mining and River bank erosion
  - (b) Drought and associated famine
  - (c) Bhopal disaster
  - (d) Application of Geoinformatics in Disaster Management.
  
3. Answer **any three** questions :
  - (a) What are the causes of flood? What is urban flooding? What do you know about Glacial Lake Outburst Floods (GLOF)? 4+2+4
  - (b) What is an aftershock? Describe the various hazard-proof building designs recommended for earthquake prone regions. What are P-waves and S-waves of earthquake? 2+5+3
  - (c) Differentiate between disaster preparedness and disaster mitigation. What do you mean by emergency plan and emergency kit? 4+6
  - (d) How are tropical cyclones different from temperate cyclones? Describe the structure and formation of a typical tropical cyclone. 2+(4+4)
  - (e) Discuss the available disaster management framework in India at governmental level. Who are the major role players in Disaster Management? Comment on National Disaster Management Plan, 2016. 5+3+2

(3)

B(6th Sm.)-Env. Sc.-H/DSE-A-2.1 & DSE-A-2.2/CBCS

DSE-A-2.2

(Green Technologies)

Full Marks : 50

1. Answer **any five** questions : 2×5
- (a) What is Syngas?
  - (b) What are the significance of Ecomark?
  - (c) What is Zero VOC paint? Give one example.
  - (d) Name two major sources of Dioxin in the environment.
  - (e) What is Regenerative Thermal Oxidizer?
  - (f) Name two components of 'Green buildings'.
  - (g) What is Carbon Credit?
2. Write short notes on (**any two**) : 5×2
- (a) Circular economy
  - (b) Role of informal sector in waste management
  - (c) Carbon capture and Storage technologies
  - (d) Role of green technologies towards a sustainable future.
3. Answer **any three** questions :
- (a) What is the principle of CFL? Explain cogeneration process with a proper diagram. Discuss isothermal melting process and fuel efficient vehicles. 2+4+2+2
  - (b) Explain the principle of thermal oxidizers with a schematic diagram. What is solvent recovery system? What does low VOC mean? Mention any two major advantages of low VOC. 4+2+2+2
  - (c) What are the costs and benefits associated with construction of green buildings? What is ECO mark scheme? Discuss few initiatives taken by the Government of India for Green city. 4+2+4
  - (d) Discuss various strategies for reduction of ecological footprint. Briefly describe green practices for conservation of natural resources. 5+5
  - (e) Discuss the principles of green chemistry. Briefly discuss the Fluidized Bed combustion method. 6+4

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