

MSc Sem.-2 Examination

407

Env. Science

May-2025

Time : 2-30 Hours]

[Max. Marks : 70

Instructions: All Questions carry equal marks
Attempt all Questions

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| Q I | Discuss in detail the major global environmental problems confronting the world today, with a special focus on glacier melt and sea level rise, drinking water scarcity, food production challenges, and waste management issues (e-waste, plastic waste, biomedical waste). | 14 |
| OR | | |
| Q I | A. Explain the causes and consequences of desertification and deforestation at the global and regional levels. How do these problems contribute to climate change and biodiversity loss? | 7 |
| | B. What is Eco-DRR (Ecosystem-based Disaster Risk Reduction)? | 7 |
| Q II | Explain the causes, formation, and impacts of acid rain on geology, aquatic systems, terrestrial ecosystems, built environments, and human health. Suggest effective mitigation measures. | 14 |
| OR | | |
| Q II | A. Discuss the nature and development of acid rain. How is it formed, and what are its primary sources? | 7 |
| | B. What are aerosols? Explain their types, production mechanisms, and distribution in the atmosphere. | 7 |
| QIII | Discuss key environmental challenges in India, with examples like Delhi smog, Yamuna River foam, and Mithi River degradation. Suggest control measures. | 14 |
| OR | | |
| Q III | A. Explain state-wise air quality issues in India with recent trends. | 7 |
| | B. What are the effects of unsustainable agriculture and poor land use planning on India's environment? | 7 |
| Q IV | Discuss major international environmental conventions and agreements like the Ramsar Convention, Basel Convention, Kyoto Protocol, Montreal Protocol, and Paris Agreement. | 14 |
| OR | | |
| Q IV | A. Write a short note on the Sustainable Development Goals (SDGs) and their importance. | 7 |
| | B. What is the UNFCCC? Explain its objectives and significance. | 7 |

(P.T.O)

- Q V Attempt any 7 out of 12 MCQs/Short question (One- or Two-line answer)/ Fill in the blanks/True or False etc. 14
- 1 Which of the following is a direct consequence of glacier melt? 2
 - A) Deforestation
 - B) Desertification
 - C) Sea level rise
 - D) Ozone depletion
 - 2 E-waste is primarily generated from: 2
 - A) Agricultural runoff
 - B) Industrial chimneys
 - C) Discarded electronic devices
 - D) Domestic sewage
 - 3 The primary chemical responsible for acid rain is: 2
 - A) CO₂
 - B) SO₂
 - C) CH₄
 - D) O₃
 - 4 Which type of aerosol has a net warming effect on Earth's atmosphere? 2
 - A) Black carbon
 - B) Sea salt aerosols
 - C) Sulfate aerosols
 - D) Organic carbon
 - 5 The critical pH limit for freshwater ecosystems below which biodiversity significantly declines due to acidification is approximately: 2
 - A) 7.5
 - B) 6.5
 - C) 5.0
 - D) 3.5
 - 6 The main cause for recurrent smog episodes in Delhi during post-monsoon months is: 2
 - A) Vehicular emissions alone
 - B) Industrial discharge only
 - C) Stubble burning in adjoining states combined with meteorological conditions
 - D) Ozone layer depletion
 - 7 The Mithi River degradation is primarily attributed to: 2
 - A) Glacier melt
 - B) Industrial and domestic sewage inflow
 - C) Salinization due to over-irrigation
 - D) Oil drilling operations
 - 8 Which air pollutant is the most reliable indicator of vehicular air pollution in urban India? 2
 - A) SO₂
 - B) NO₂
 - C) PM_{2.5}
 - D) CO₂

- 9 The Kyoto Protocol, 1997 introduced which key mechanism for emission reduction in developing countries? 2
A) Ramsar Site Designation
B) Clean Development Mechanism (CDM)
C) Prior Informed Consent Procedure
D) Kigali Amendment
- 10 Which of the following correctly pairs a treaty with its environmental concern? 2
A) Basel Convention — Wetland protection
B) Montreal Protocol — Ozone depletion control
C) Paris Agreement — Electronic waste management
D) Ramsar Convention — Air quality monitoring
- 11 The Kigali Amendment (2016) to the Montreal Protocol specifically targets: 2
A) Sulfur dioxide emissions
B) Hydrofluorocarbons (HFCs)
C) Nitrogen oxides
D) Mercury contamination
- 12 India's Nationally Determined Contributions (NDCs) under the Paris Agreement aim to: 2
A) Achieve net-zero carbon emissions by 2025
B) Reduce emission intensity of its GDP and enhance forest cover
C) Ban all fossil fuel use by 2030
D) Stop all agricultural stubble burning
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