

MSc Sem.-1 Examination

403

Environmental Science

February-2025

Time : 2-30 Hours]

[Max. Marks : 70

Instructions: All Questions carry equal marks
Attempt all Questions

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| Q I | Explain dynamic equilibrium and spontaneous change along with Le Châtelier's Principle. | 14 |
| | OR | |
| Q I | A. Explain atoms ,elements, molecules, covalent compounds, Chemical species and chemical reactions. | 7 |
| | B. Write a note on atomic nucleus and nuclear reactions in brief. | 7 |
| Q II | Explain all non-renewable energies in detail along with its distribution. | 14 |
| | OR | |
| Q II | A. Enlist any three nuclear accidents and explain the impact of any one nuclear accident on environment and human life. | 7 |
| | B. Discuss on energy production and consumption across India. | 7 |
| QIII | Write a short note on Wind Energy, Tidal Power, Geothermal energy | 14 |
| | OR | |
| Q III | A. Explain in brief about Hydrogen energy, Biomass and Biofuels . | 7 |
| | B. Give an account on photovoltaic cell. | 7 |
| Q IV | Explain the Environmental standards for Waste to Energy Plant operations and gas clean-up in detail. | 14 |
| | OR | |
| Q IV | A. How to generate energy from water-based biomass and solid-waste. | 7 |
| | B. Give an account on Future Energy Scenario of the World. | 7 |
| Q V | Attempt any 7 out of 12 Short questions (two marks each) | 14 |
| | 1 Name the element whose atomic number is 5, 9,13 and 16 | 2 |
| | 2 State the atomic number and electronic configuration of carbon and calcium. | 2 |
| | 3 Define: Atomic number with an example. | 2 |
| | 4 State Zeroth Law of thermodynamics. | 2 |
| | 5 How wind energy is produced? | 2 |
| | 6 State the difference between conventional and non-conventional energy | 2 |
| | 7 State the atomic number and electronic configuration of C and H? | 2 |
| | 8 Calculate the oxidation state of magnesium in Mg^{2+} and of potassium in KCl^{-1} . | 2 |
| | 9 Name the countries where geothermal energy is used. | 2 |
| | 10 How double bond is formed between chemical molecules? | 2 |
| | 11 What is chemical kinetics? | 2 |
| | 12 Name different types of blades used in Windmill. | 2 |