

B.Sc. 6th Semester (Honours) Examination, 2021 (CBCS)
Subject: Environmental Science
Paper: DSE-3
(Water & Water Resources)

Time: 3 Hours

Full Marks: 60

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words

1. Answer *any six* of the following: 5×6 = 30
- i) Explain the significance of BOD and COD for wastewater recovery.
 - ii) What is lentic water? What is its importance?
 - iii) Mention the role of macro-invertebrates and microbes in controlling properties of water.
 - iv) Elucidate the rainwater harvesting in an urban setting.
 - v) Explain the significance of Dissolved Oxygen (DO) content in a waterbody.
 - vi) What is the difference between pH and alkalinity?
 - vii) Write a short note on sodium adsorption ratio (SAR).
 - viii) What do you mean by salinity of water? The salinity of sea water is 35 % - What does it indicate?

2. Answer *any three* of the following: 10×3=30
- i) Explain hydrological cycle. How do the anthropogenic activities perturb the cycle?
 - ii) Why India is regarded as a water deficient country? What steps should be taken to overcome India's water deficit?
 - iii) Explain the role of watershed management to conserve the water resources.
 - iv) Describe the formation and properties of aquifers?
 - v) Briefly explain the groundwater resource scenario in India.

Paper: DSE-3 (OR)
(Atmosphere & Global Climate Change)

1. Answer *any six* of the following: 5×6 = 30
- i) Explain the salient features of global warming potential (GWP) phenomenon.
 - ii) What is albedo? Mention its significance?
 - iii) Explain *El-Nino* with its effect on Peruvian economy.
 - iv) Briefly describe the characteristics of major greenhouse gases.
 - v) What is Environmental Lapse Rate? How does it vary with altitude in the atmosphere?
 - vi) State the effects of urbanization on microclimate.
 - vii) What is temperature inversion? Why is troposphere the most turbulent region in the atmosphere?
 - viii) What are carbon footprint and carbon handprint?
2. Answer *any three* of the following: 10×3=30
- i) Discuss with suitable diagram the different pathways of energy transfer in atmosphere.
 - ii) What are the impacts of ozone layer depletion? Briefly describe the measures to control ozone layer depletion?
 - iii) Draw a simplified diagram to show the general circulation of the atmosphere over the globe and discuss the possible reasons for the formation of subtropical high pressure over 30° N and S latitudes?
 - iv) Describe the impacts of climate change on environment and human health.
 - v) What are the International initiatives for tackling climate change? What India has done about tackling climate change?