

2018

M.Sc.

Part-I Examination

ENVIRONMENTAL SCIENCE

PAPER—III

Full Marks : 100

Time : 4 Hours

*The figures in the right-hand margin indicate full marks.*

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

*Illustrate the answers wherever necessary.*

Answer Q. No. 1 and any five questions from the rest.

1. Answer any ten questions : 10×2

(i) What are the primary and secondary air pollutants in the atmosphere ?

(ii) What are the natural sources of air pollution ?

(Turn Over)

- (iii) What is Biomagnification ?
- (iv) What is acoustic trauma ?
- (v) What do you mean by 'National Ambient Air Quality Standards' ?
- (vi) What do you mean by biosensor ?
- (vii) What is effect of non-ionizing radiation on living system ?
- (viii) What are the various soil microorganisms and their functions ?
- (ix) What are the major sources of marine pollution ?
- (x) What is 'cation exchange capacity' ?
- (xi) What is 'Dioxin' ?
- (xii) What is the difference between ecorestoration and eco-rehabilitation ?
- (xiii) What are the impact of ionizing radiation on human health ?
- (xiv) What is the difference between BOD and COD ?
- (xv) What is 'Cyclone Separator' ?

2. (a) What are the major meteorological parameters which govern dilution and dispersion of air pollutant in atmosphere ? 8
- (b) What are the prime factors responsible for depletion of ozone layer ? Briefly illustrate the strategies for protection of ozone layer. 8
3. Briefly explain the multifarious harmful effects of chemical fertilizers. How does climate change is influenced by the use of chemical fertilizer. 8+8
4. What do you mean by MPN ? Explain how can you measure MPN of a sample of water ? Write down the drinking water quality parameters as per the recommendation made by WHO. 2+7+7
5. (a) What makes bioremediation a promising approach to remove contamination from soil ?
- (b) Explain briefly the various in-situ and ex-situ bioremediation process.
- (c) What are the challenges associated with ex-situ bioremediation ? 4+8+4
6. (a) What is Noise Pollution? What are the major sources of Noise Pollution ?
- (b) What is Noise Impact Index ?
- (c) What are the various measures for control and abatement of Noise pollution ? 4+4+8

7. Write a note on municipal waste-water treatment. What is activated sludge process ? State the importance of measurement of BOD. 8+4+4
8. What is a primary and secondary treatment of waste water ? Briefly describe the techniques for primary and secondary treatment of waste water. 6+10
9. (a) State the principles of estimation of nitrogen and organic matter in soil.
- (b) How acid sulphate impact agricultural soil ?
- (c) Explain the relationship among three types of potassium that exist in the soil-plant system. 8+2+6
10. Write critical notes on— 4x4
- (a) Method of preparation of integrated Coastal zone Management Plan.
- (b) Physio-Chemical and Bacteriological analysis of water quality
- (c) Noise Pollution Monitoring
- (d) Measures for Controlling Marine Pollution.
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