

**2012**

**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 that 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 of the following : 2×10**

- (i) Differentiate 'Ecodegradation' from pollution.
- (ii) What is 'PAN' ?
- (iii) Mention the major source of 'Methane' as green house gas.
- (iv) Where lies the difference between 'Contaminants' and 'Pollutants' ?
- (v) What is CFC ?
- (vi) Differentiate  $LC_{50}$  from  $LD_{50}$ .

- (vii) What is "Minamata Syndrome"?
- (viii) What is meant by 'Secondary Pollutant'?
- (ix) Mention the pathways for the removal of particulate pollutants.
- (x) How wind speed and direction influence air pollution?
- (xi) How does El-Nino occur?
- (xii) Enlist four causes of soil pollution.
- (xiii) What are 'Sou' and 'NO<sub>x</sub>'?
- (xiv) What are Oxygen Demanding Wastes?
- (xv) Explain radiation sickness.
- (xvi) What is Biosensor?
2. (a) Describe the major sources of noise in the environment.
- (b) Discuss different mitigation measures for reducing environmental noise.
- (c) What is noise induced threshold shift?
- 6+8+2
3. What is Acid Rain? Briefly discuss on the different chemical components required for the formation of acid rain highlighting their sources, characteristics and different chemical reactions leading to cause acid rain.

Add a note on the role of meteorological parameters in the formation of acid rain. What are the environmental consequences of such pollution?

2+8(2+2+4)+3+3

4. (a) What are the toxic heavy metals? What are the common causes of heavy metal toxicity?
- (b) How lead is absorbed into the human body?
- (c) Discuss the health effects of lead toxicity.
- 5+3+8
5. (a) What is thermal pollution?
- (b) Discuss the mode of operation of a thermal power plant.
- (c) Discuss the environmental consequences of thermal power plant operation.
- 2+6+8
6. (a) Discuss the role of different soil micro organisms in maintaining environmental health of soil.
- (b) Explain two major reasons for soil-erosion.
- 8+8
7. (a) What are the major sources of water pollution?
- (b) Discuss the methods of physico-chemical sampling and analysis of water quality.
- (c) What is water standard?
- 6+8+2

8. (a) What is pesticide ?  
(b) Classify different pesticides based on target organism and chemical properties.  
(c) Discuss the harmful effects of one persistent pesticide.

2+6+8

9. Write short notes on (any two) : 8+8

- (a) Marine Pollution ;  
(b) Point and Non Point Pollution ;  
(c) Effect of air pollution on flora ;  
(d) Thermal Pollution.
-