

2013

M.Sc. Part-II Examination

ENVIRONMENTAL SCIENCE

PAPER—IXB

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 : 2×10

- (i) Mention the regulatory functions of an ecosystem?
- (ii) What is standing crop? How it is measured?
- (iii) What is detritus food chain? Give example.?
- (iv) What is biological air filter?
- (v) Define aerosol. Why boundary layer is most significant in aero microbiology?

(Turn Over)

- (vi) Mention the ecological importance of soil micro organisms.
- (vii) Write two disadvantages of batch sterilization.
- (viii) What is Super Digested Compost ?
- (ix) What are vermiwash and vermifeed ?
- (x) Mention the differences between Solid State Fermentation (SSF) and Sub Merged Fermentation (SMF).
- (xi) Name the biodiversity hot spots in India.
- (xii) State the differences between Phagotrophs and Saprotrophs.
- (xiii) What are threatened species according to IUCN Red List Category Version 3.1 ? Give example.
- (xiv) Define Phyllosphere and Rhizosphere with associated micro organisms.
- (xv) State the situations where the pyramid of biomass becomes inverted.

2. Write a note on major forest types of India.

State the differences between National Park and Biosphere Reserve.

12+4

3. Briefly mention the major types of bioreactors that are used in industry.

Draw, label and describe the stirred tank bioreactor (STB).

6+10

4. Discuss in brief different types of isolating mechanism.

16

5. Write a note on wasteland. Briefly describe about the industrial plantation with its limitations.

4+8+4

6. Briefly describe sampling devices for collection of bioaerosols. How bioaerosols can be controlled ?

10+6

7. Give a brief account of the types of species extinction. Add a note on cause and rates of extinction.

10+6

8. What are edaphon ? Classify soil animals on the basis of habitat, size and degree of dependence on soil.

1+15

9. What is biofertilizer ? Mention its differences with that of chemical fertilizer.

How biofertilizers are applied to crops ?

What precautions to be taken for using biofertilizer ?

2+4+4+6

10. Define biofertilizer. Discuss types prospects and fertility potentials of different biofertilizers.

3+13