

2014

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 of the following : 2×10

- (i) Mention the significance of studying food chain and food web of an ecosystem.
- (ii) What is inverted Ecological Pyramid ?
- (iii) Define mineralization and immobilization.
- (iv) Why the air of a refrigerator is usually free from all micro organism ?
- (v) What do you mean by aerosol ? Name two diseases transmitted by aerosol ?

(Turn Over)

- (vi) Mention the ingredients required for Vermiculture ?
- (vii) What is bioterrorism ? Give an example ?
- (viii) What do you mean by down stream processing ?
- (ix) What were the components of earth atmosphere prior to 'origin of life' ?
- (x) Point out the merits and demerits of industrial plantation.
- (xi) Give an idea about endophytic organism.
- (xii) Differentiate commensalism and mutualism.
- (xiii) Enlist the type of 'forest' available in West Bengal.
- (xiv) Mention the differences between primary and secondary metabolite —
- (xv) What is ecological succession ?
- (xvi) Define Neuston and Nekton.
2. Point out the differences between culturable and non culturable waste land. Discuss the parameters that are used for rehabilitation of degraded land along with decisive factors used for species selection.

6+8+2

3. Briefly mention the classification of Indian forest according to Champion & Seth. and write a note on Mangrove forest of India.
- 8+8
4. (a) Give a flow chart for the preparation of vermicompost and mention the merits of vermicompost
- (b) Write a note on biofertilizer.
- (4+4)+8
5. (a) Draw Energy flow diagram of a lake.
- (b) Briefly describe the pyramid of energy and also mention its advantages.
- (c) Mention the functions of decomposer.
- 6+8+2
6. (a) Mention the various type of fermentation processes that are adopted in industry.
- (b) Write a brief note on substrates that are frequently used in Industrial fermentation.
- 8+8
7. Define Wetlands. Mention the values of wetlands. Discuss the types and biotic interaction of biotic communities of fresh water aquatic ecosystem.
- 2+5+9

8. Define Ecosystem. What are the structural components of an ecosystem? Discuss ecosystem stability in the light of feed back control and redundancy of components. Explain resistance stability and residence stability
2+4+6+4
9. (a) Mention 10 Biosphere Reserves of India along with its location in the country.
(b) Point out the differences between National Park and Sanctuaries.
(c) Mention the concept of Biosphere Reserve.
5+4+6
10. Enlist different soil quality parameters. Discuss the role of different soil microorganisms in maintaining environmental health of soil. Highlight the ecological threats on soil organisms.
4+8+4
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