

B.Sc. (Part-I) Semester – II Examination

ENVIRONMENTAL SCIENCE

(Ecology & Environment)

Time—Three Hours]

[Maximum Marks—80

N.B. :— (1) ALL questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. (a) Fill in the blanks with appropriate words :

(i) _____ are also referred as Primary Consumers. $\frac{1}{2}$ (ii) *Cuscuta* is the example of _____ interspecific interrelationship. $\frac{1}{2}$ (iii) _____ is the father of biodiversity. $\frac{1}{2}$ (iv) Hydrosere and Xerosere is the example of ecological _____. $\frac{1}{2}$

(b) Choose the correct alternative and rewrite the following sentences :

(i) In terrestrial ecosystem, the tropic level that would contain the largest biomass :

(a) Producers

(b) Primary Consumers

(c) Secondary Consumers

(d) Decomposers $\frac{1}{2}$

(e) Density and basal area as an analytical characters. 4

(f) Community structure and dominance. 4

5. Write on :

(a) Components of ecosystem 4

(b) Energy flow in an ecosystem 4

(c) Components of grassland ecosystem. 4

OR

(d) Components of pond ecosystem 4

(e) Food web in ecosystem 4

(f) Structure of an ecosystem. 4

6. Write on :

(a) Concept of biomass 4

(b) CO₂ method of productivity measurement 4

(c) General process of succession. 4

OR

(d) Radioactive method of productivity measurement 4

(e) Causes of succession 4

(f) Diagrammatic representation of hydrosere. 4

7. Focus on India as a mega diversity nation. Explain with examples Indian Biodiversity Hotspots. 12

OR

Describe with role indicators of water and soil pollution. 12

(ii) Identify the possible link 'A' in the following food chain :

Plant → Insect → Frog → 'A' → Eagle

- (a) Snake
- (b) Parrot
- (c) Rabbit
- (d) Tiger ½

(iii) Savannas are :

- (a) Tropical Rainforest
- (b) Forest with closed canopy
- (c) Grassland with scattered trees
- (d) Desert ½

(iv) Which of the following is not the indicator of Water Pollution ?

- (a) *Chara*
- (b) *Woolfia*
- (c) *Utricularia*
- (d) *Pinus* ½

(c) Answer in **ONE** sentence :

- (i) Enlist successive stages of hydrosere. 1
- (ii) What is Secondary Succession ? 1
- (iii) What is Ecotone ? 1
- (iv) Give the examples of indicators of Water Pollution. 1

2. Write on :

- (a) Principles and scope of Ecology 4
- (b) Account on Oxygen Cycle 4
- (c) Diagrammatic representation of Phosphorous Cycle. 4

OR

- (d) Describe topographic factors 4
 - (e) Account on Sulfur Cycle 4
 - (f) Diagrammatic representation of Carbon Cycle. 4
3. What is Population Ecology ? Describe natality, mortality, age structure and growth curve as a population characteristics. 12

OR

What is positive interspecific inter-relationship ? Describe with examples mutualism and commensalism. 12

4. Write on :

- (a) Species diversity as a community characteristics. 4
- (b) Frequency and abundance as an analytical characters. 4
- (c) Phenology and stratification as a quantitative characters. 4

OR

- (d) Presence and constance as a synthetic characters. 4