

4013

1200
20/6/24

Sr. No. of Question Paper :

Your Roll No.....

Unique Paper Code : 2162512401

Name of the Paper : Ecology and Evolution

Name of the Course : Botany (Life Science)

Semester : IV

Duration: 2 Hours

Maximum Marks: 60

Instructions for Candidates: Write your Roll No. on the top immediately on receipt of this question paper. All questions carry equal marks. Attempt total four questions including Question No. 1 which is compulsory. All parts of a question must be attempted together. Draw diagrams wherever necessary.

1. a. Define the following (any five):

5X1= 5

- i. Homeostasis
- ii. Saprophytes
- iii. Productivity
- iv. Homology
- v. Frequency
- vi. Biome

b. Fill in the blanks (any five):

5X1= 5

- i. is the instrument used to measure the velocity of wind
- ii. is an example of sedimentary cycle.
- iii. is defined as branch of phylogenetic tree with its ancestor and all its descendants.
- iv. The energy flow model separates the grazing food chain and detritus food chain.
- v. The modification of a species over many generations by selecting and breeding individuals that possess desired traits by humans is known as.....
- vi. The position of a species in community in relation to other species is termed as.....

c. Give an example of following (any five, Scientific names only)

5X1= 5

- i. Root Parasite plant
- ii. Neo-endemic plant
- iii. Hydrophyte
- iv. Nitrogen fixing bacteria
- v. Keystone species
- vi. Sciophyte

2. Differentiate between (any five):

5X3 =15

- a. Pyramid of number and Pyramid of energy
- b. Allopatric and Sympatric Speciation
- c. Density and Abundance
- d. Food chain and Food web
- e. Biological species concept and Phylogenetic species concept
- f. Autotrophic and Heterotrophic succession

3. Write short Notes on (any three):

3X5 =15

- a. Thermal stratification in water body
- b. Tree of life
- c. Soil Profile
- d. Allelopathy
- e. Shelford's law of tolerance.

4. Answer the following (any two)

7.5X 2 =15

a. Define Phytogeography. Enlist the phytogeographical zones of India. Discuss any two in detail.

5

b. Illustrate the general process and stages of succession with special emphasis on xerosere.

5

c. Explain the concept of an Ecotone with suitable examples. Also explain the Edge effect.

5

5. a. What are the survivorship curves? Discuss their importance with examples.

5

b. State true or false. Justify your answer.

5X2 = 10

- i. Orchids and some ferns are examples of epiphytes.
- ii. Weathered rock material is known as soil.
- iii. Hygroscopic water is available to plants for growth.
- iv. Trophic organization is studied as a part of community structure.
- v. The amount of nutrients in the soil at any given time is refer to standing crop.