

Use Separate Answer
Script for each Group

M.Sc. Examination, 2017
Semester-IV
Botany
Paper: MBC-42

Time: 3 Hours

Full Marks: 48

Questions are of value as indicated in the margin

Group-A (Plant Ecology)

Answer question no. 1 and **any two** from the rest.

1. Answer **any four** of the following: 1x4=4
 - (a) Define 'flagship' species.
 - (b) What is meant by *thermocline*?
 - (c) How is a parasite different from a predator?
 - (d) Give two examples of plant commensal.
 - (e) Define solar constant.
 - (f) Which is the type of survivorship curve shown by K- selected species?
2. Why did Odum call ecological succession as process of ecosystem development? – discuss briefly. Describe two *ex-situ* strategies of biodiversity conservation. 6+4=10
3. Differentiate between exponential and logistic population growth. 'r- and K- selection are two extreme ends of a continuum' – discuss with evidence. 4+6=10
4. Write short notes on **any four** of the following: 2.5x4=10
 - (a) Ecosystem stability
 - (b) Y-shaped energy flow model
 - (c) Tundra biome
 - (d) Concept of polyclimax
 - (e) Key for classification of soil orders
 - (f) Biosphere Reserves

Group-B (Environmental Botany)

Answer question **No.1** and **any two** from the rest

1. Write short notes on **any four** of the following: 1x4=8
 - a) BOD
 - b) PM_{2.5}

P.T.O.

(2)

- c) Carbon as a prime element of life
 - d) Mercury toxicity
 - e) CCM in cyanobacteria
 - e) Bioremediation
2. What is black smog? How does it differ from photochemical smog? Describe the various chemical reactions leading to the formation of PAN. State the role of O₃ in cracking natural rubber. 1+3+4+2=10
 3. Characterise heat shock proteins. Describe the functional aspects of HSP70 in response to heat stress. 4+6=10
 4. Enumerate the various anthropogenic sources of fresh water pollution. State the effects of any two water pollutants on living system. Describe the conventional method for large scale purification of water. 2+4+4=10
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