

Use Separate Answer
Script for each group

M.Sc. Examination, 2018

Semester-IV

Botany

Paper: MBC-42

(Plant Ecology & Environmental Botany)

Time: Three 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) What are Phanerophytes?
 - (b) Why clumped dispersion is most common in nature?
 - (c) What is *Relay Floristic* in succession?
 - (d) What is production efficiency?
 - (e) What are fragile ecosystems?
 - (f) What is ICRISAT?
2. Differentiate between exponential and logistic population growth. Discuss the traits of invasive plants. 6+4=10
3. Describe the decomposer community and the possible chronosequence of litter decomposition. Briefly discuss the various factors affecting litter decomposition. 4+3+ 3=10
4. Write short notes on *any four* questions: 2.5 x 4 =10
 - (a) Laterization;
 - (b) Mutualism;
 - (c) Three plant strategy in succession;
 - (d) Factors delimiting biomes;
 - (e) Biosphere Reserves;
 - (f) IUCN Red List.

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=4
 - a) Xenobiotics
 - b) PAN
 - c) Kyoto Protocol
 - d) Decibel scale,
 - e) Eutrophication
 - f) Phytoremediation
2. What is “greenhouse effect”? State the beneficial activity of greenhouse effect. Enumerate the properties of CH₄ that makes it a greenhouse gas? Describe the sources, relative contribution and global warming potential of various greenhouse gases. 1+2+3+4=10
3. What are heat-shock proteins? Briefly describe the heat-shock gene transcription process. Describe the biochemical mechanisms that help an organism to protect its proteins from denaturation against high heat stress. 2+4+4 = 10

P.T.O.

(2)

4. Why is carbon basis for life on earth? State two important evidences for a lack of free O₂ in the earth's early atmosphere. "RNA is believed to have been once capable of independent life in pre-biotic soup existing as free-floating nucleotides"- Justify the statement. 3+2+5 = 10
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