

Exam. Code : 210002

Subject Code : 5442

M.Sc. (Botany) 2nd Semester
ECOLOGICAL MODELLING AND FOREST
ECOLOGY

Paper—BOTC—529

Time Allowed—3 Hours]

[Maximum Marks—50

Note :—Section A (8 marks) : It will consist of **ONE** question having **EIGHT** parts. Candidates will be required to attempt **ALL** the parts, each part carrying **1** mark. Answer to any of the questions should not exceed **4** lines.

Section B (21 Marks) : It will consist of **TEN** questions. Candidates will be required to attempt **SEVEN** questions, each question carries **3** marks. Answer to any of the question should not exceed **2** pages.

Section C (21 Marks) : It will consist of **FIVE** questions. Candidates will be required to attempt **THREE** questions, each question carries **7** marks. Answer to the question should not exceed **4** pages.

SECTION—A

1. Answer the following questions :
 - (a) Stable age distribution
 - (b) Leslie-Gower model for interaction between two species
 - (c) Shannon-Weaver measure
 - (d) IVI
 - (e) Landscape
 - (f) Urban forestry
 - (g) Digital image processing
 - (h) Role of Member Secretary in Air (Prevention and Control of Pollution) Act, 1981.

SECTION—B

2. What are the penalties under Water (Prevention and Control of Pollution) Act, 1974 ?
3. Describe McArthur-Wilson theory of biogeography.
4. Give a brief account of Wildlife (Protection) Act, 1972.
5. Describe Lotka-Volterra model for predator– prey interaction.
6. What do you understand by the ‘continuum concept’ ?
What is its significance in ecological modeling ?

7. What are different methods of landscape analysis ?
8. Mention about different types of forests.
9. What is the role of remote sensing in ecology ?
10. What is ecological modeling ?
11. Describe matrix model for population growth.

SECTION—C

12. Give a detailed note on aerial photography and image interpretation.
13. What are the different methods employed for conservation of forest ?
14. What are the different constitutional provisions for environmental conservation ?
15. Write a note on Cole's measure and point correlation coefficient for association.
16. Comment on 'Extinction and formation of single population'.