# PG Even Semester Exam, 2023

## Ecology & Environmental Science

2nd Semester

COURSE NO. ECG-552

**[ Forest Ecology ]**

Full Marks : 70
Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks for the questions*

*Answer five questions, taking one from each Unit*

## UNIT-I

1. Define forest types. State the climate based six major vegetation groups in India. Describe the important vegetation types in India with their characteristics features. 1+3+10=14

2. Write short note on: 7x2=14
   a. Role of microclimate in shaping forest structure
   b. Characteristics of secondary forest

## UNIT-II

3. Define seed dormancy in forest trees. Elucidate the causes of different types of seed dormancy in forest trees. Describe the various approaches opted in breaking seed dormancy of forest trees. State the biological significance of seed dormancy. 1+7+5+1=14

4. Write short notes on the following: 7x2=14
   a. Shoot growth in forest trees
   b. Forest seed bank

## UNIT-III

5. What is an allometric model? What is the significance of using allometric models? What are the key components of allometric models? Add a note on the limitations of allometric models. 2+4+5+3=14

6. Write short notes on: 7x2=14
   a. Factors influencing forest biomass
   b. Forest types and biomass variation

## UNIT-IV

7. What do you understand by forest restoration? What are its types ? Draw and explain the stages of forest restoration from degraded forest to natural /historical forest. Add a case study of how forest restoration was successfully implemented in any one region of the world. 2+1+8+3=14

8. Write short notes on any two: 7x2=14
   a. Urban Forestry in India
   b. Joint Forest Management
   c. Sustainable Forest Management

## UNIT-V

9. Write a detailed note on the various applications of remote sensing and GIS in ecology and environmental science mentioning the various sensors used in these applications. 14

10. Write short notes on (any two): 7x2=14
    a. Spectral signature
    b. Digital interpretation of satellite data
    c. Data types and working concepts of GIS

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