

**FORESTRY**  
**Paper I**  
**(CONVENTIONAL)**

Time Allowed : Three Hours

Maximum Marks : 200

**QUESTION PAPER SPECIFIC INSTRUCTIONS**

**Please read each of the following instructions carefully before attempting questions.**

There are EIGHT questions in all out of which FIVE are to be attempted.

Question No. 1 and 5 are compulsory. Out of the remaining SIX questions, THREE are to be attempted selecting at least ONE question from each of the two Sections A and B.

Attempts of questions shall be counted in chronological order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

Answers must be written in ENGLISH only.

Neat sketches may be drawn, wherever required.

**SECTION 'A'**

1. Answer the following in about 150 words each :
  - 1.(a) Explain why after gregarious flowering bamboo always die. 8
  - 1.(b) Discuss the role of Provenance Tests in tree improvement. 8
  - 1.(c) Mixed forest stands offer complete utilization of land. Comment. 8
  - 1.(d) Describe the benefits and constraints of agroforestry. 8
  - 1.(e) Give a short account on the management of uneven-aged forests. 8
- 2.(a) Discuss in detail the evolution of the 'concept' of plant succession. 20
- 2.(b) Explain the following :
  - 2.(b) (i) Orthodox and recalcitrant seeds. 5
  - 2.(b) (ii) 'Elite' thinnings are often difficult to execute. 5
  - 2.(b) (iii) Frequency distribution and Binomial and Poisson distribution. 5
  - 2.(b) (iv) Specific problem of Coastal land and Hot deserts. 5

- 3.(a) What do you mean by plantation schedule ? Give in detail the factors which decide the success of plantation programme. 10
- 3.(b) State genetic drift. Discuss Hardy-Weinburg law with its significance. 10
- 3.(c) Discuss the 'uniform system' with artificial regeneration. 10
- 3.(d) Explain the importance of soil and air temperature on the growth of forest trees. 10
- 4.(a) Comment on the statement that "vegetative propagation is a dead end of breeding". 10
- 4.(b) Explain the survival strategies of the following group of plants :
- 4.(b) (i) Halophytes 5
- 4.(b) (ii) Phreatophytes 5
- 4.(b) (iii) Xerophytes 5
- 4.(b) (iv) Succulent 5
- 4.(c) Do you think that the controlled fire is beneficial to forest vegetation ? Discuss. 10

### SECTION 'B'

5. Answer the following in about 150 words each :
- 5.(a) Discuss the natural regeneration in soil. Give steps recommended for ensuring its successful regeneration. 8
- 5.(b) Explain the possible causes of genetic variation in forest trees. 8
- 5.(c) Discuss the importance of willow cultivation in cold deserts. 8
- 5.(d) Differentiate between the following : 8
- 5.(d) (i) Ectomycorrhizae and Endomycorrhizae.
- 5.(d) (ii) Exogenous dormancy and Endogenous dormancy.
- 5.(e) Discuss the characteristics of a mangrove forest with examples. 8
- 6.(a) Explain the forest conversion process of coppice system to uniform broad-leaved high forest by natural regeneration. 20
- 6.(b) Answer the following :
- 6.(b) (i) Exotics have potential, do you agree or disagree. Justify your response. 5
- 6.(b) (ii) Why does height of a tree considered a better criteria for site selection than its diameter ? Discuss. 5
- 6.(b) (iii) Explain the importance of snow in regeneration of *cedrus deodara*. 5
- 6.(b) (iv) Describe the following : 5
- (a) Regeneration survey.
- (b) Fish-bone technique.
- 7.(a) Discuss in detail the objectives of artificial regeneration. 10
- 7.(b) Discuss two-storied high forest and explain its advantages. 10
- 7.(c) Discuss the important factors while planning of seed orchards. 10
- 7.(d) What do you understand by the term greenhouse gases ? Explain how these gases disturb the ecological balance of nature and suggest suitable remedies. 10
- 8.(a) Name different tribes of India state wise and their specific characteristics. How can we make use of their traditional knowledge in forest conservation (flora fauna) ? 20
- 8.(b) Why are agroforestry systems becoming popular in Himalayan tarai regions, Western plains and Southern parts of India ? Discuss your answer with reasons and tree-crop combinations adopted in these regions and parts of the country. 20