

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