

FORESTRY

Paper I

0000371

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 Nos. 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 sequential 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 : 8×5=40
- 1.(a) Justify the statement "Forests substantially check soil erosion and control run off." 8
- 1.(b) Comment "Forest has moderating influences on soil and air temperature." 8
- 1.(c) Describe important objectives of thinning. Differentiate crown thinning from ordinary thinning. Write grades of ordinary thinning. 8
- 1.(d) Write the characteristics of Cold desert. Discuss soil working and planting techniques for Cold desert. 8
- 1.(e) Define clear felling system. How is Saranda Sal (*Shorea robusta*) forest managed under clear-felling followed by natural regeneration ? 8
- 2.(a) Describe the silvicultural system which may be introduced to manage a plantation forest of *Azadirachta indica*. 20
- 2.(b) Discuss in brief the Simple Coppice System. Write different types of Coppice System. 20
- 3.(a) Write the importance of soil organic matter in forests. How is calculation of number of seedlings carried under Line, Square, Triangular and Quincunx methods of planting. 20
- 3.(b) Describe kinds and pattern of fellings followed in Shelterwood Uniform System. Explain Uniform System which is followed to manage (*Pinus roxburghii*) forests of Himachal Pradesh. 20

- 4.(a) Write in detail the term Girdling and Pruning. Write scientific names of five trees/shrubs each for the Cold desert and Mangrove forests. 20
- 4.(b) Describe in brief the distribution, phenology, silvicultural characteristics, artificial regeneration and uses of the following tree species : 20
- (i) *Tectona grandis* and
- (ii) *Santalum album*

SECTION 'B'

5. Answer the following : 8×5=40
- 5.(a) List the basic causes and kinds of variations in tree populations. 8
- 5.(b) Write distinguishing features of saline and alkaline soil. 8
- 5.(c) Provide scientific names of four potential NFTs each suitable for Tropical and Temperate conditions. 8
- 5.(d) Explain types of rocks based on formation and minerals based on chemical composition. 8
- 5.(e) Discuss the reasons for widespread use of exotics for plantations and specific advantages of exotics over native species. 8
- 6.(a) Define Provenance. Discuss the role of Provenance trial in tree improvement and mention different phases of a Provenance trial. 10
- 6.(b) Define Global Warming. Explain in brief the principle behind Greenhouse effect. Write the consequences of Global Warming on forest, wildlife and the human health. 20
- 6.(c) What are the objectives of carrying out EIA. Discuss sequentially, the different phases of an EIA study. 10
- 7.(a) Explain the role of forests in environmental conservation. 10
- 7.(b) How are "Environment", "Environment pollutant" and "Hazardous substance" narrated in Environment (Protection) Act, 1986 ? 10
- 7.(c) Discuss the role of agroforestry in nutrient cycling and soil conservation. How is saline soil reclaimed ? 20
- 8.(a) Define the seed orchard. Write types of the seed orchards. List the various aspects considered prior and after establishment of seed orchards for its management. 20
- 8.(b) Briefly discuss aims, objectives and scope of social forestry. Why is people's participation must in social forestry ? 10
- 8.(c) Define Watershed. Describe tree based models for reclamation of degraded hills. 10