

This question paper contains 4+1 printed pages]

**CODE : FRO-2017**

**FORESTRY**

Roll. No. ....

Time : 3 Hours

Maximum Marks : 200

Note :— (i) Question paper consists of two parts viz. Part I and Part II. Each part contains four questions. The paper as a whole carries eight questions. Question Nos. 1 and 5 are compulsory. The candidates are required to attempt *three* more questions out of the remaining six questions taking at least *one* question from each part i.e. this is in addition to the compulsory question of each part. Attempt *five* questions in all. All questions carry equal marks. The parts of a question are to be attempted at one place in continuation. Answers should be brief and to the point.

(ii) Parts of same question must be attempted together and not to be attempted in between the answers to other questions.

P.T.O.

## Part-I

1. (a) Explain the phenology, silviculture characters and regeneration of *Populus deltoides* and *Cedrus deodara*. 20
- (b) Define different methods of vegetative propagation in forest trees. Elaborate the role of auxins, gibberellins and cytokinin in vegetative propagation in woody plants. 20
2. Write short notes on the following :
  - (a) Seed orchard and seed production area 10
  - (b) In-situ and ex-situ conservation of biodiversity, 10
  - (c) Tending operations in forestry. 10
  - (d) Form factor and volume estimation of stands. 10
3. (a) Discuss various measures for afforestation of cold deserts with suitable tree species. Briefly describe the characteristics of mangroves and how degraded mangrove formations can be rehabilitated ? 20

- (b) What do you understand by silvicultural system ? Explain in detail various coppice systems in forest management. How the even aged and uneven aged forests are managed ? 20
4. (a) What are composite woods ? Discuss any *five* types with examples. 10
- (b) How does National Forest Policy 1988 differ from earlier National Forest Policies ? 10
- (c) What do you understand by demand ? Discuss the various factors influencing the demand of forest products. How is cost-benefit analysis important for forestry plantations ? 10
- (d) Describe major diseases and their control in forest nursery and plantation. Write *two* major pest of *Pinus roxburghii*. 10

**Part-II**

5. (a) What is forest nursery ? Discuss different types of forest nurseries. What are the main components of a hi-tech forest nursery ? Describe advantages of root trainers over polybags. 20
- (b) What do you understand by wood seasoning and wood preservation ? Describe different types of wood seasoning and wood preservative techniques. 20
6. Write short notes on the following :
- (a) Taungya and shifting cultivation 10
- (b) Joint Forest Management 10
- (c) Alley cropping and farm forestry 10
- (d) Biotic and abiotic components of an ecosystem. 10
7. (a) What do you understand by Forest Inventory ? Discuss its objectives. Explain in detail various kinds of enumeration and methods of sampling. 20

- (b) Classify agroforestry systems based on structure and nature of component. What are the criteria of selection of tree species for agroforestry and also discuss the tree-crop interaction in agroforestry. 20
8. (a) Define watershed management. Discuss its objectives and benefits. Write down the role of suitable tree species for watershed management. 10
- (b) What are the causes of forest fires ? Explain briefly the factors affecting the fire rating and behavior in forest. 10
- (c) Explain plant succession along with its causes ? Differentiate between allogenic and autogenic plant succession with suitable examples. 10
- (d) Define forest rotation. Discuss in detail various types of forest rotation. 10