

## FORESTRY

### Paper – II

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.*

*Questions 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 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 necessary.*

## SECTION A

- Q1.** (a) What is the importance of surveying in forestry ? Discuss different methods of surveying to solve the forestry field problems. 8
- (b) What is sustained yield ? Mention the positive and negative aspects related to sustained yield. 8
- (c) 50 equi-productive coupes are to be worked out for 2000 hectares of forest under clear felling system with the following densities :
- | <i>Area (ha)</i> | – | <i>Densities</i> |
|------------------|---|------------------|
| 600              | – | Normal density   |
| 400              | – | 0.75 density     |
| 800              | – | 0.50 density     |
| 200              | – | 0.25 density     |
- Find out the number of coupes in different densities. 8
- (d) Give the classification of forest roads. What features are required for a reconnaissance for forest roads ? 8
- (e) What are the forest stock maps ? Discuss the details shown in stock maps for a working plan report. 8
- Q2.** (a) What are the precautions required for diameter measurements with calipers ? Discuss the errors that occur due to non-observation of the precautions. 15
- (b) What is growing stock ? How is normal growing stock calculated in clear felling system based on final MAI ? 15
- (c) Define rotation. Explain different types of rotation with special reference to ecological, industrial and economical benefits. 10
- Q3.** (a) Define working plan. Discuss objectives and scope of a working plan. Describe salient features of a good working plan. 15
- (b) What is increment ? Discuss different types of increments. Discuss the graphical relationship between current annual increment and mean annual increment. 15
- (c) Define volume tables and give their classification. 10

- Q4.** (a) Define forest management. Give its objectives. How does the attitude of the owner put impact on the management of forests ? *15*
- (b) Define forest sampling. Give advantages of sampling. Discuss different types of non-random sampling methods used in forestry. *15*
- (c) Define remote sensing. Discuss its application in forest management along with GIS applications. *10*

## SECTION B

- Q5.** (a) What are the industrial uses of gums and resins ? Discuss the factors affecting the production and supply of gums and resins. 8
- (b) What is carbon sink ? How do forest soils act as important carbon sinks ? 8
- (c) Forest ecology is the study of complex interactions between organic and inorganic components of the forest ecosystem. Explain organic and inorganic components providing two examples of each as they relate to the forest ecosystem. 8
- (d) What is the ecological and economical importance of biodiversity ? Mention the salient measures for conservation of biodiversity. 8
- (e) Write down four advantages of timber seasoning and suggest which one is commercially suitable over other methods, with suitable examples. 8
- Q6.** (a) List out different types of preservatives used for protection of timber against fungi and insects and classify them based on solvent used. 15
- (b) How is enumeration of animal population in natural forests carried out in general ? Also specify the method(s) adopted in the case of tigers. 15
- (c) What is succession and climax ? Give the causes of forest succession. 10
- Q7.** (a) Define ethnobotany. Write in detail about the role of ethnobotany in modern medicine and its approaches to the drug industry. 15
- (b) What are the objectives of Joint Forest Management (JFM). Give methods used for preserving forest resources through JFM. 15
- (c) Enlist the common and scientific names of trees and shrubs (seven each) having medicinal importance in ethnobotany. 10
- Q8.** (a) What are the key elements of the wood industry and paper industry strategies ? Explain. 15
- (b) What are the main differences between forest policy and forest laws ? Give salient points of the National Forest Policy of 1952 and 1988. 15
- (c) Describe the defects that appear during seasoning in timbers. 10