

FORESTRY

Paper – I

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.

Neat sketches may be drawn, wherever required.

*Answers must be written in **ENGLISH** only.*

SECTION A

- Q1.** (a) Why is it difficult to carry out afforestation programmes in cold deserts ? 8
- (b) What factors are considered important while choosing a species under avenue plantation ? 8
- (c) 'An appropriate silvicultural system promotes better regeneration of forest stand.' Comment. 8
- (d) Are non-native tree species an option or a threat in forest ecosystem/plantation under climate change ? 8
- (e) Do the trees of same species have different response to light conditions at different ages ? 8
- Q2.** (a) What is the ecological significance of cold deserts ? How do plants adapt and survive under cold and harsh desert conditions ? Provide a list of common native species of a cold desert. 15
- (b) Discuss the phenology, silvicultural characters and regeneration methods of :
- (i) *Gmelina arborea*
- (ii) *Pinus roxburghii* 15
- (c) Elucidate the pattern of felling and mode of regeneration adopted under selection system of management. 10
- Q3.** (a) What do you mean by tending operations ? Enumerate various tending operations carried out in forest crops. Discuss improvement felling. 15
- (b) What are the characteristics and significance of mangrove forests ? Discuss important species formation in mangrove forests. 15
- (c) Why is grading operation of nursery seedlings essential for successful forest plantations ? 10
- Q4.** (a) What are the conditions on which the choice of a particular silvicultural system to be adopted for specific species in any locality depends ? 15
- (b) Elucidate the distribution, nursery techniques and economic importance of :
- (i) *Cedrus deodara*
- (ii) *Acacia catechu*
- (iii) *Casuarina equisetifolia* 15
- (c) How are forest sites classified on the basis of vegetation ? 10

SECTION B

- Q5.** (a) What are the impacts of COVID-19 pandemic on environment and biodiversity ? 8
- (b) How do the ownership rights of forests influence the success of joint forest management ? 8
- (c) How can watershed management enhance and promote sustainable integrated water resource management ? 8
- (d) How does soil organic matter decomposition influence forest productivity ? 8
- (e) How do agroforestry woody perennials protect the understorey crops ? 8
- Q6.** (a) Explain the role of trees and forests in environmental conservation. 15
- (b) Discuss the problems of commons in social forestry. Suggest some effective strategies to overcome these problems. 15
- (c) How does agroforestry promote sustainable livelihood of marginal farmers ? 10
- Q7.** (a) What is the relationship between air pollutants and climate change ? How does forest vegetation abate different types of pollutants ? Describe Air (Prevention and Control of Pollution) Act, 1981 in relation to pollution management. Suggest name of suitable plant species. 15
- (b) How do you differentiate a springshed from a watershed ? Explain how a healthy springshed can ensure a better hydrological cycle of an area. 15
- (c) What are the advantages and disadvantages of tree-breeding methods over biotechnological methods ? 10
- Q8.** (a) Give an overview of forest genetic resources and gene conservation programmes in India. Suggest effective practices for sustainable management for quality improvement of Indian forests. 15
- (b) How does crop rotation and mixed farming improve soil productivity ? 15
- (c) Discuss the role of tree domestication in biodiversity conservation. 10

