

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.

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 (QCA) 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

1. (a) Differentiate between Sustained Yield Management (SYM) and Sustainable Forest Management (SFM). 8
- (b) Explain (i) crop diameter, (ii) crop height, (iii) spectral signature and (iv) general volume table. 8
- (c) What is GPS? Briefly explain its segments and its applications in forest inventories and monitoring. 8
- (d) Differentiate between Traverse surveying and Chain surveying. 8
- (e) What is unit of working plan in India? How does it differ with other temperate countries? Briefly explain the Annual Plan of Operations (APOs). 8
2. (a) What is the National Working Plan Code-2023? What are its salient features? Discuss its importance in sustainable forest management and biodiversity conservation. 15
- (b) What is commercial volume? Explain different methods of volume estimation of felled logs and compare with quarter girth method. 15
- (c) Explain (i) tensile stress, (ii) shear strain, (iii) compressive stress, (iv) Young's modulus of elasticity and (v) rigidity modulus. 10
3. (a) What is Normal Growing Stock (NGS)? Explain briefly the method of determination of NGS in clear felling system with formulae. 15
- (b) Which criteria have to be considered while choosing statistically sound sampling design? How do you estimate the sample size for forest inventories? Explain different kinds of sampling units. 15
- (c) What is Eco-Development Committee (EDC)? Explain its role in forest conservation and mitigation of human-wildlife conflict. 10
4. (a) What is yield regulation? What are the bases of yield regulation? Enlist different methods applicable to regular and irregular forests. 15
- (b) What are allometric growth models? Mention different types and explain their application in growth and yield management of forest stands. 15
- (c) Differentiate amongst contour line, contour gradient and contour interval. Describe the characteristics of contours. 10

SECTION—B

5. (a) Explain the anatomical features of hardwoods. 8
- (b) What are the different steps for preparation of herbarium specimens? 8
- (c) Explain, as per the Indian Forest Act, 1927, (i) reserved forests, (ii) protected forests, (iii) unclassified forests and (iv) village forests. 8
- (d) Discuss the effect of wild animals on forest regeneration. 8
- (e) Describe the classification of timbers based on the air dry weight method with example of tree species. 8
6. (a) Describe in brief the importance of biogeochemical cycles. Compare between carbon cycle and nitrogen cycling. 15
- (b) Explain different methods for prevention and control of insect-pests in forests, plantations and nurseries. Mention the major insect-pests in teak, deodar, sal and shisham. 15
- (c) Differentiate amongst radiation frost, pool frost and advective frost. Give at least two examples each for frost hardy, moderately hardy and frost tender tree species. 10
7. (a) What are the different types of composite woods? Differentiate between fibre board and particle board. 15
- (b) What are ecosystem services? Differentiate between use values and non-use values. Explain different methods of valuation of ecosystem services. 15
- (c) How does the knowledge of ethnobotany contribute in the Indian system of medicines? 10
8. (a) What are forest rights? Which general principles may be applied for protecting forests against misuse of rights and concessions? 15
- (b) Explain the importance of wood preservatives. Differentiate between water-soluble type and organic solvent type of wood preservatives. 15
- (c) What are the different five main conservation categories under IUCN? 10

