

**PART – II**

Total Number of Questions : 40	Maximum Marks : 200	Time : 3 Hours
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**INSTRUCTIONS (നിർദ്ദേശങ്ങൾ).**

1. Question cum Answer Booklets are processed by electronic means. The following instructions are to be strictly followed to avoid invalidation of answer scripts.  
(ചോദ്യവും ഉത്തരവും അടങ്ങുന്ന ഈ ബുക്ക് ലെറ്റുകൾ ഇലക്ട്രോണിക് സാങ്കേതിക വിദ്യയുടെ സഹായത്തോടുകൂടെ മൂല്യനിർണ്ണയം നടത്തുന്നതിനാൽ ഇവ അസാധുവാകാതിരിക്കുവാൻ താഴെപ്പറയുന്ന നിർദ്ദേശങ്ങൾ പൂർണ്ണമായും പാലിക്കുക.)
2. The first page of this question cum Answer Booklet is an OMR data Sheet (Part I). All entries in the OMR sheet are to be made with blue or black ball point pen only.  
(ഈ പുസ്തകത്തിന്റെ ഒന്നാമത്തെ പേജ് ഒരു ഒ.എം.ആർ. ഡാറ്റാ ഷീറ്റാണ് (പാർട്ട് I). ഇത് നീലയോ, കറുപ്പോ നിറത്തിലെ ബോൾ പോയിന്റ് പേന ഉപയോഗിച്ച് മാത്രമേ പൂരിപ്പിക്കാവൂ.)
3. Make sure that register number is bubbled correctly and completely; no correction is permitted.  
(രജിസ്റ്റർ നമ്പർ രേഖപ്പെടുത്തുന്നതിനുള്ള കുമിളകൾ കൃത്യമായും പൂർണ്ണമായും കറുപ്പിച്ചിട്ടുണ്ടെന്ന് ഉറപ്പു വരുത്തുക. തിരുത്തലുകൾ അനുവദനീയമല്ല.)
4. Do not tamper the bar code printed on the OMR sheet and subsequent pages. Tampering of bar code will result in the invalidation of this booklet.  
(ഈ പുസ്തകത്തിൽ എവിടെയും പ്രിന്റ് ചെയ്തിരിക്കുന്ന ബാർ കോഡിൽ ഒരു കാരണവശാലും തിരുത്തലുകളോ, മാർക്കുകളോ പാടില്ല. ഇതിനു വിരുദ്ധമായി ചെയ്യുന്ന പക്ഷം ഈ പുസ്തകം അസാധുവാകുന്നതാണ്.)
5. Answers should be written with blue or black ball point pen only.  
(ഉത്തരങ്ങൾ നീലയോ, കറുപ്പോ നിറത്തിലെ ബോൾ പോയിന്റ് പേന ഉപയോഗിച്ച് മാത്രമേ എഴുതാവൂ.)
6. Do not write anything outside the margin of space provided for writing the answer and write only one line of answer between two lines.  
(പുസ്തകത്തിൽ ഉത്തരം എഴുതുവാൻ നൽകിയിരിക്കുന്ന സ്ഥലത്തിനു വെളിയിൽ യാതൊന്നും തന്നെ എഴുതുവാൻ പാടില്ല. രണ്ടു വരകൾക്കിടയിൽ ഒരു വരി ഉത്തരം മാത്രമേ എഴുതുവാൻ പാടുള്ളൂ.)
7. Rough work should be done only in the specific page provided with.  
(റഫ് വർക്കുകൾ ഇതിനായി നൽകിയിരിക്കുന്ന പേജിൽ മാത്രമേ ചെയ്യുവാൻ പാടുള്ളൂ.)

1. Define plant succession and write the causes responsible for primary and secondary plant succession. (5 Marks)
2. Define tree growth and explain in detail about different stages of tree growth. (5 Marks)
3. Narrate in detail how does the rainfall affect the distribution of Forests. (5 Marks)
4. Define site quality and enlist the methods employed for evaluation of site quality. (5 Marks)
5. Define clear felling system and write its advantages and disadvantages. (5 Marks)
6. What do you mean by Regeneration survey write its objectives and procedure for conducting Regeneration survey? (5 Marks)
7. What is clonal propagation in trees? Write the utility of clonal propagation. (5 Marks)
8. What do you understand by seed orchard? Write briefly the significance and types of seed orchards with critical difference. (5 Marks)
9. What is micropropagation? Write the various stages and applications of micropropagation in forestry. (5 Marks)
10. Write the phenology and silvicultural characteristics of the following species (5 Marks)
  - (i) *Santalum album*
  - (ii) *Melia dubia*

11. Write the scientific name, family name and economic importance of the following species (5 Marks)
- (i) Gumhar
  - (ii) Karanj
  - (iii) Khair
  - (iv) Chir pine
  - (v) Big leaf mahogany
12. Write the distribution and regeneration methods for the following species. (5 Marks)
- (i) *Shorea robusta*
  - (ii) *Tectona grandis*
  - (iii) Bamboos
  - (iv) Tropical pines
  - (v) *Pterocarpus marsupium*
13. What do you understand by ecosystem services? Write the role of agroforestry in extending ecosystem services. (5 Marks)
14. Agroforestry is a potential land use system for carbon sequestration – Comment. Write different carbon pools and methods of biomass carbon sequestration assessment. (5 Marks)
15. Why agroforestry is receiving greater attraction in the recent past? Discuss in terms of industrial significance. (5 Marks)
16. Elucidate five most effective strategies for fire management in forests. (5 Marks)
17. Briefly mention five prominent forest nursery diseases with particular reference to symptoms and management of ‘damping off’ in humid tropics. (5 Marks)
18. Briefly explain the prospects of Integrated Pest Management (IPM) in forest nurseries. (5 Marks)

19. Mention major invasive plant species and their ecological significance in the forest ecosystems in India. (5 Marks)
20. Briefly explain how volume table is prepared by graphical method. (5 Marks)
21. How quarter girth formula underestimates the actual volume of logs? However, why it is preferred in practical forestry. (5 Marks)
22. Discuss the importance of sampling in forest inventory and differentiate between multi stage and multiphase sampling. (5 Marks)
23. Differentiate between sustained yield and progressive yield. (5 Marks)
24. What is yield regulation? Give brief account of yield prediction models in production forestry. (5 Marks)
25. Distinguish between Rotation of Maximum Volume Production and Technical Rotation. (5 Marks)
26. Define Seed Orchard and Explain the types of Seed Orchard with Seed Orchard Designs, Location, Establishment and Management of Seed Orchards. (5 Marks)
27. What do you mean by vegetative reproduction? Discuss different vegetative propagation methods with suitable examples in clonal forestry. (5 Marks)
28. Describe the variation of tree species due to the genetic differences among trees and the interactions between the tree genotypes and the environments in which they grow. (5 Marks)
29. Discuss the mechanical properties of wood in detail. What are the factors Affecting Mechanical Properties of wood? (5 Marks)
30. What is wood seasoning? Explain the classification of timber based on seasoning behavior and seasoning methods. (5 Marks)

31. Describe the “Pulp and Paper Making Processes” and “Pulping Technologies” involved in detail. (5 Marks)
32. What is the Significance of the Forest Industry in India? Elaborate different types of Forest-Based Industries in India with suitable examples. (5 Marks)
33. What is the impact of overexploitation of Non-Timber Forest Products (NTFPs)? Why is their sustainable utilization important? (5 Marks)
34. List resin tapping methods. Explain rill method of resin tapping. List some of the gum and resin yielding tree species. (5 Marks)
35. Elucidate Human wildlife conflict issues and strategies adopted to control them. (5 Marks)
36. Explain the need for captive breeding of wildlife with relevant examples. (5 Marks)
37. Discuss about success of cheetah introduction/reintroduction program in India. (5 Marks)
38. What are the salient features of the National Forest Policy of 1988? Critically examine the need for its revision in the contemporary context. (5 Marks)
39. Highlight the major rights of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. (5 Marks)
40. Explain the constitutional provisions related to the protection and conservation of forests and wildlife in India. (5 Marks)