

251008

COMBINED COMPETITIVE EXAMINATION (MAIN)

FORESTRY

Paper-I

Time : 3 Hours

Full Marks : 200

- Note :* (1) The figures in the right-hand margin indicate full marks for the questions.
(2) Attempt five questions in all.
(3) Question No. 1 is compulsory.

1. Answer any *ten* questions from the following : 4×10=40
- (a) What are different environmental factors that control the forest ecosystems?.
 - (b) How do you measure the girth and height of a tree?
 - (c) Write the importance of wildlife sanctuaries in conservation of wildlife.
 - (d) Why is classification of plants and animals necessary?
 - (e) With example, define different plant classificatory systems.
 - (f) Distinguish between orthodox and recalcitrant seeds.
 - (g) What do you mean by earthen ball? Explain its importance.
 - (h) Why are ecological studies significant in management and conservation of forests?
 - (i) What are the applications of remote sensing in forestry?
 - (j) What is coppice? How is it important in regeneration of forests?
 - (k) How do you obtain the commercial cork?
 - (l) What do you mean by integrated approach of disease and pest management?
2. Differentiate between any *eight* of the following : 5×8=40
- (a) Herbarium and xylarium
 - (b) Synecology and autoecology

- (c) Ordinary thinning and crown thinning
- (d) Spatial resolution and spectral resolution
- (e) Primary xylem and secondary xylem
- (f) Current annual increment and mean annual increment
- (g) Clear felling system and shelter wood system
- (h) Food chain and food web
- (i) Endemic species and endangered species
- (j) Temporary nursery and permanent nursery
3. Answer any *five* questions from the following : 8×5=40
- (a) Describe various formulas for calculating volume of logs. What is quarter girth formula?
- (b) Why is height of a tree considered a better criterion than its diameter for site selection?
- (c) Explain different processes of soil erosion. How can the forests and vegetation help in soil and water conservation?
- (d) Describe the impact of the Environment (Protection) Act, 1986.
- (e) Describe various anatomical features of a tree stem. What is anomalous secondary growth?
- (f) Explain different methods used in forest surveying.
4. Answer any *four* questions from the following : 10×4=40
- (a) What do you mean by modern taxonomy? Explain.
- (b) What are the important threaten categories classified by IUCN for conservation of wildlife? What are the bases of placement of an organism in a particular category?
- (c) Write the role of various protected areas in management and conservation of wildlife.
- (d) What is the impact of fire on vegetation? Write different methods followed in control of forest fire.
- (e) Describe the management practices followed in natural regeneration under shelter wood system.
5. Answer any *two* questions of the following : 20×2=40
- (a) Explain how the height of a tree is determined by Abney's level. What are its advantages and disadvantages?

- (b) Write the applications of remote sensing and GIS in the following :
- (i) Forest cover mapping
 - (ii) Land use/land cover mapping
 - (iii) Land degradation mapping
 - (iv) Watershed management.
- (c) What are ecological pyramids? With diagram, explain different types of ecological pyramid.
6. Comment on any *four* of the following : 10×4=40
- (a) Successful regeneration in a forest depends upon judicious choice of a silvicultural system.
 - (b) Nomenclatural principles and roles are unavoidable in plant taxonomy.
 - (c) Census of wild animal is crucial for conservation of endangered species.
 - (d) Soil working is an important aspect of nursery management.
 - (e) Maps are integral part of forest management.
7. What do you understand by the biodiversity hotspot? Write the important characteristic features of Eastern Himalayan biodiversity hotspot. Explain the methods of in-situ and ex-situ conservations. 40
8. Explain the key factors that damage the forest crops and reduce the crop yield. Write notes on insect pests of forest crops and their control measures. How is quarantine helpful in control of insect pests? 40
9. Explain various tending and thinning operations done in the forest crops. Discuss various methods of weed control. 40
10. Write the impact of climate change to the forest and biodiversity. Explain the role of forest in controlling global warming. 40