

## IFS 2002 FORESTRY

### PAPER - I

#### SECTION A

1. Answer any four of the following:

- (a) Describe monoculture at gene and at species level. (10)
- (b) Compare the silviculture of poplar (*Populus deltoids*) with *Casuarinas equisetifolia*. (10)
- (c) Discuss the salient features of the management of mangrove forests in India. (10)
- (d) Describe the influence of air and soil temperature on the growth of the plants. (10)
- (e) Highlight variations in the selection system of management. (10)

2. (a) What do you understand by 'clonal' propagation? Maximum gain can be obtained through clonal propagation—Justify. (20)

(b) Discuss the objectives and methods of thinning followed in India. (20)

3. (a) Describe in detail various coppice systems of forest management. (20)

(b) Discuss the forest types of cold desert ecosystems. (20)

4. Describe the silviculture of the following species : (40)

(i) *Acacia nilotica*

(ii) *Anogeissus latifolia*

(iii) *Cedrus deodara*

(iv) *Shorea robusta*

#### SECTION B

5. Answer any four of the following:

(a) Discuss the evaluation of agro-forestry systems. (10)

(b) Define watershed management and its objectives. (10)

(c) What is progeny testing? Why is it important in tree breeding?

(d) What do you understand by 'carbon sequestration' and how can it be effectively managed? (10)

(e) What is the Joint Forest Management (J.F.M.)? What in your opinion are the bottlenecks in its effective implementation. (10)

6. (a) Describe the development of degraded lands through silvi-pastoral system in India. (20)

(b) What should be the basis for the choice of species in agro-forestry systems? (20)

7. Write short notes on:

(a) Shelter-belts (10)

(b) VAM (10)

(c) Ozone depletion (10)

(d) Plugging of gully through tree planting (10)

8. (a) What are the different selection methods in tree improvement?

(10)

(b) Describe the selection and breeding for disease resistance in trees.

(10)

(c) Enumerate various steps in the creation of 'clonal' seed orchards.

(10)

(d) Distinguish between incomplete and complete pedigree mating designs. Why is factorial mating design preferred in tree breeding?

(10)

## **PAPER - II**

### **SECTION A**

1. Attempt any four questions from the following (not more than 150 words for each)

(a) Define normal growing stock. Discuss how normal growing stock yield table is determined in a clear felling system.

(10)

(b) Discuss the concept of sustained yield in forestry.

(10)

(c) Describe the use of aerial photography in forestry related activities.

(10)

(d) Discuss the role of working plan in biodiversity conservation.

(10)

(e) What is the importance of maps in forestry? Discuss stock maps.

(10)

2. (a) Define the term rotation. Enumerate the various rotations followed in the stand management and discuss briefly any two of them.

(20)

(b) Explain the yield regulation by gross area method.

(10)

(c) Describe the principles of point sampling and list the conventionally used instruments in horizontal point sampling.

(10)

3. (a) Define normal forest. Elaborate the characteristics of normal forest.

(20)

(b) Explain schematically the exact relationship between C.A.I. and M.A.I. in the forest stand managed under clear felling system.

(10)

(c) What is increment per cent ? Show how increment per cent is worked out by using Pressler's formula.

(10)

4. (a) What are the bases considered in the regulation of yield? List them with at least one method employed in each one of them. (20)

(b) Describe the various types of maps used in the working plan. (10)

(c) Discuss the importance of temporary and fair weather roads in the forests. (10)

### **SECTION B**

5. Attempt any four from the following (not more than 150 words for each):

(a) What is plant succession? Write down the causes of primary succession and discuss the stages of succession on new sites of temperate Himalaya.

(10)

(b) What are the main defects found in wood? Describe the defects due to abnormal growth.

(10)

(c) What is meant by encroachment in the forests? Discuss the factors responsible for encouraging encroachment.

(10)

(d) Discuss the importance of economic analysis in making forestry decisions.

(10)

(e) Discuss the legal provisions made under I.F.A. 1927 for protection against fire.

(10)

6. (a) Describe the revised classification of forest types of India as proposed by Champion and Seth

(1968). Give two examples for each type.

(20)

(b) Differentiate between :

(i) Gum and Resin

(ii) Tans and Dyes

(iii) Sapwood and Heart Wood

(iv) Lac and Shellac

(v) Floating and Rafting. (10)

(c) What is shifting-cultivation ? Describe the various measures for control of this practice.

(10)

7. (a) What are the causes of forest fire? Discuss in brief the damages caused to forest by fire.

(20)

(b) "Plants are amongst the most important sources of medicines and drugs."— Discuss with suitable examples.

(10)

(c) What do you understand by demand? Discuss the various factors influencing the demand of forest products. (10)

8. (a) What is meant by "Preservation of timber"? Why is it done ? Describe in brief the different wood preservation techniques. (20)

(b) What are the sources of soil nitrogen in forest ecosystems? Give an account of nitrogen cycling in forest ecosystems. (10)

(c) Discuss the basic objectives of National Forest Policy 1988. (10)