

CSM – 30/20
Forestry
Paper – I

Time : 3 hours

Full Marks : 300

The figures in the right-hand margin indicate marks.

*Candidates should attempt Q. No. 1 from Section – A and Q. No. 5 from Section – B which are compulsory and any **three** of the remaining questions, selecting at least **one** from each Section.*

SECTION – A

1. Answer any **three** of the following :

- (a) (i) Define climatic factors. Discuss each climatic factor in brief. 10
- (ii) Define regeneration. Describe various steps of natural regeneration by seed. 10
- (b) Differentiate the following : 10+10 = 20
 - (i) High Forest and Coppice Forest

(ii) Physical Rotation and Silvicultural Rotation

(c) Comments on the following : 5+5+10 = 20

(i) Dying back of sal seedling

(ii) Mycorrhiza in forestry

(iii) Objects of afforestation

(d) Why thinning is important ? Discuss pointwise objectives of thinning. Explain kinds of thinning in brief. 20

2. (a) (i) Describe the factors responsible for soil formation and development. 10

(ii) Explain, in brief, the objectives of reforestation. 10

(b) Discuss the mechanisms of successional change. Give the factors responsible for rate of successional change. 10+10 = 20

(c) Differentiate the following : 10+10 = 20

(i) Germination capacity and Germination energy

(ii) Pollarding and Lopping

3. (a) Define natural regeneration by vegetative parts. What are the advantages of vegetative reproduction ? Discuss the methods used for vegetative reproduction. 20
- (b) Give in brief the distribution, phenology, silvicultural characteristics and regeneration pattern of the following species : 10+10 = 20
- (i) Teak (*Tectona Grandis*)
 - (ii) Sal (*Shorea robusta*)
- (c) Explain the following : 10+10 = 20
- (i) Forest Conservation Act, 1980
 - (ii) Elephant Reserves
4. (a) Comments on the following : 10+10 = 20
- (i) Growing stock
 - (ii) Yield regulation
- (b) Explain the following : 10+10 = 20
- (i) Seed production areas
 - (ii) Pre-sowing treatments of seed

- (c) Describe the impacts of fire on forest.
Suggest preventing measure of fire on forest.

20

SECTION – B

5. Answer any three of the following :

- (a) (i) What is improvement felling ? Discuss pointwise operations of improvement fellings. 10

- (ii) Differentiate between clonal seed orchard and seedling seed orchard. 10

- (b) Discuss the impacts of shifting cultivation on soil properties. Explain the possible measures can be taken against shifting cultivation. 10+10 = 20

- (c) Give the deficiency symptoms of essential nutrients. Discuss the criteria of essentiality of nutrients. 10+10 = 20

- (d) Comments on the following : 10+10 = 20

- (i) Site productivity
(ii) Infiltration

6. (a) What is Global Warming ? Discuss the cause and consequences of Global Warming. Explain the control measures of Global Warming. 20

(b) Define forest types. Describe, in brief, revised classification of forest types of India. 20

(c) Differentiate between Clear-felling system and Shelterwood systems. 20

7. (a) Explain the following : $5+5+10 = 20$

(i) Shelter belt

(ii) Wind break

(iii) Hydrological cycle

(b) What the factors responsible for soil erosion ? Discuss the conservation measures of soil erosion. 20

(c) Write objectives of the following :

$10+10 = 20$

(i) Weeding

(ii) Cleaning

8. (a) (i) Discuss, in brief, nutrient inputs and outputs sources in forest ecosystem.

10

- (ii) Discuss the role of soil organic matter.

10

- (b) Explain the following : $10+10 = 20$

- (i) Plantation Forestry

- (ii) Carbon Sequestration in Forest

- (c) Define biodiversity. What are the threats on biodiversity ? Discuss the conservation methods of biodiversity. $10+10 = 20$

