

CSM – 31/19
Forestry
Paper – II

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 : $20 \times 3 = 60$
 - (a) Carbon sequestration potential of agro-forestry interventions.
 - (b) What is JFM ? Discuss its benefits and constraints in forest management.
 - (c) Explain ecosystem functions of agroforestry trees at different geographical scales.

(d) Explain ~~Odisha Timber~~ & Other Forest Produce Transit Rules, 1980.

2. (a) What are the important issues in wildlife-human conflicts and how these can be resolved for the development of agriculture and farm forestry ? 20

(b) What is the significance of forest policy and how does it varies from forest laws ? Explain the 1988 National Forest Policy in details with respect to natural resource conservation, research and training and rights / concessions. 20

(c) Explain different types of forest fires and their causes. What measures can be taken for preventing the occurrence of forest fire ? 20

3. (a) Differentiate between agroforestry and social forestry. Classify the agroforestry systems based on structure and nature of components. Explain ecological and economic interactions of different components in the agroforestry system. 20

(b) Explain, in detail, the dependence of tribal society on forests. What necessary steps could be taken for the upliftment of their socio-economic status and how their traditional knowledge can be used in forest conservation (flora / fauna) ? 20

(c) What were the drawbacks of social forestry programme ? Explain the role of industry, schools, banks, NGOs, etc. in afforestation programme. 20

4. (a) What characteristics should be considered while selecting agricultural crops and tree species for suitable tree-crop combination ? What are the constraints of agroforestry ? 20

(b) Explain the role of trees outside forest in meeting industrial and domestic demand. 20

(c) Explain the different phases of forest management in the post-independence era in India and major initiatives being taken by the Government of India in last two decades for increasing forest and tree cover. 20

SECTION – B

5. Answer any **three** of the following : $20 \times 3 = 60$

(a) Discuss the significance of within stand and geographical variation. Which one is important for species improvement programme ?

(b) Enlist the major constraints in undertaking forest tree improvement.

(c) Vegetatively propagated stock results into higher genetic gain, explain.

(d) Explain the relationship of CAI and MAI.

6. (a) Explain the methods of extraction of Katha and enlist the uses of Katha and Cutch. 20

(b) One hectare area raised with 1000 plants experienced 20% mortality. After few years, 20% trees attained circumference of 70 cm, 50% trees had circumference of 25 inches and remaining 30% trees attained circumference of 90 cm. Calculate the basal area of the stand. 20

(c) What do you mean by forest inventory ? Why it is carried out in forestry ? Briefly describe the different kinds of enumerations. 20

7. (a) How would you prove the presence of the following, give suitable example for each : 20

(i) Genetic variance (G)

(ii) Environmental variance (E)

(iii) The interaction between the two (GxE)

(b) Calculate the above ground biomass (dry weigh basis) of shisham tree having green leaf biomass of 120 Kg (55% moisture content), stem biomass of 340 Kg (35% moisture content), branch biomass of 180 Kg (45% moisture content). Also calculate the percent contribution of different tree components to the above ground biomass on dry weight basis. 20

(c) What is the importance of MFP in Indian economics ? Give the distribution of beedi patta and how they are processed for the end product. 20

8. (a) What do you understand by the term "Forest Tree Improvement" ? How it differs from Forest Genetics and Forest Tree Breeding ? Explain heritability and its advantages in tree improvement programme. 20

(b) What do you mean by the term 'Wood Based Industries' ? Name the major wood based industries in the country. Discuss the challenges before wood based industries in India. 20

(c) Differentiate between the following : 20

(i) Essential and non-essential oils

(ii) Canes and bamboo

(iii) Fibre and floss

(iv) Gums and resins

