

CSM – 30/18
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 **three** of the remaining questions, selecting at least **one** from each Section.*

SECTION – A

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1. Answer any **three** of the following :
 - (a) (i) Describe the unique characteristics of mangrove forest vegetation. 8
 - (ii) Enlist six genera of mangroves. 6
 - (iii) Name two states and one union territory with largest area under mangroves. 6

- (b) Discuss the reasons for widespread use of exotics for plantations and specific advantage of exotics over native species.

10+10 = 20

- (c) Define thinning. Describe the important objectives of thinning. Discuss the different kinds of thinning with example. 4+8+8, = 20

- (d) (i) Comment on the statement that "vegetative propagation is the dead end of breeding". 10

- (ii) Enlist the different subgroups under Tropical moist deciduous forest as per Champion and Seth classification of forest types. 10

2. (a) Describe, in brief, the distribution, phenology, silvicultural characteristics, artificial regeneration and uses of the following tree species : 20+20 = 40

(i) *Tectona grandis*

(ii) *Shorea robusta*

(b) Explain how latitude influences the forest types on earth. 20

3. (a) Describe the methods of pre-sowing treatment of seeds for raising nursery. 20

(b) Calculate the number of seeds required to raise a 20 hect plantation with 4m × 4m spacing and an extra plant in the center of each square. Plant percent of the species is 75%. 20

(c) What are the general rules governing the felling of bamboos in forest ? What are the consequences of gregarious flowering of bamboos ? What special measures be taken in the event of gregarious flowering ?

$$6+6+8 = 20$$

4. (a) Briefly, describe, the silvicultural characters and natural regenerations of the following :

$$10 \times 3 = 30$$

(i) *Shorea robusta*

(ii) *Dendrocalamus strictus*

(iii) *Dalbergia sisoo*

(b) Write short notes on the following :

10×3 = 30

- (i) Seed orchard
- (ii) Exotics in Indian forestry
- (iii) Tending operation and cultural operations

SECTION – B

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

- (a) Define clear felling system. How is Saranda Sal (*Shorea robusta*) forest managed under silvicultural system of clear felling followed by natural regeneration ? 5+15 = 20
- (b) Discuss, briefly, the impact of forest on climate. 20
- (c) How the encroachment in forest land by tribals and traditional forest dwellers is regulated under the provision of Forest Right Act ? What is the recent ruling of Supreme Court in this regard (delivered on Feb 13th, 2019) ? 15+5 = 20

(d) Define yield regulation. How it is related to growing stock? What is Von Mantel's formula for yield regulation? Critically discuss the advantages and disadvantages of the formula.

$$5+5+5+5 = 20$$

6. (a) Comment on the variations practiced in the silvicultural system of *Shorea robusta* in the states of UP, Bihar, Odisha and West Bengal.

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$$5 \times 4 = 20$$

(b) Critically analyse the anthropogenic causes of forest destruction. How can these factors be minimized?

$$10+10 = 20$$

(c) Is it correct to say that controlled fire is beneficial to forest vegetation? Discuss.

20

7. (a) What is global warming? What are its impact on climate change? Discuss the contributing factors and suggest remedial measures.

$$5+5+5+5 = 20$$

