

2012

M.Sc.

Part-I Examination

BOTANY

PAPER—III

Full Marks : 100

Time : 4 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Write the answer to questions of each Half in separate books.

First Half

[Marks—50]

1. Distinguish between the *two* of any *eight* pairs of the following : 2×8
 - (a) Taungya and departmental plantation ;
 - (b) Seeding felling and final felling ;
 - (c) Layering and grafting ;

(Turn Over)

- (d) Deforestation and denudation ;
- (e) Ground fire and crown fire ;
- (f) Social forestry and agroforestry ;
- (g) Clear strip and alternate strip system ;
- (h) Lateritic and podosolic iron pan. ;
- (i) Litter and organic matter ;
- (j) Oil and essential oil ;
- (k) First and last periodic block ; and
- (l) Fibre and flosses.

2. Answer any *three* of the following : 4×3

- (i) On what essential consideration artificial regeneration is based ?
- (ii) State the reasons of accumulation of salts in soil ?
- (iii) Explain as to how the aspect and exposure affect the distribution of tree species.
- (iv) Mention the factors which effect the seedling establishment in natural regeneration ?

Or

Write short notes on any *three* of the following :

- (i) Occurrence of forest fire ;
- (ii) Afforestation of denuded hill slopes ;
- (iii) Frost injury ; and
- (iv) Plant as biotic factor.

3. Which silviculture system is more ecofriendly and how ? Discuss the pattern of felling in Group System and the nature of crop development.

(2+3)+(5+2)

Or

In what respect, shelter wood system is different from clear felling system. Discuss the pattern of felling and regeneration in shelter wood system. Where is it applied ?

4+6+2

4. Write short notes on any *four* of the following : $2\frac{1}{2} \times 4$

- (i) Sources of Gums;
- (ii) Uses of Bamboo ;
- (iii) Resins and their uses ;
- (iv) Drugs of forest origin ;
- (v) Natural fibres ; and
- (vi) NWFP of West Bengal.

Second Half

[Marks—50]

Answer all questions.

5. Distinguish between the *two* of any *four* pairs of the following :

 $4\frac{1}{2} \times 4$

- (i) Sustained yield any progressive yield ;
- (ii) General volume table and volume tables with variables ;
- (iii) Mean height and top height ;
- (iv) Rotation of highest income and financial rotation ;
- (v) Base line and tie line ; and
- (vi) Bearing and angle.

6. (a) What is "great principles of survey" ?

(b) What is quadrantal bearing ? Convert the following W.B. to reduced bearing :

(i) 50° , (ii) 95° , (iii) 195° , (iv) 295°

(c) What are the characteristics of good graphical scale ? How a Map differs from a plan ?

 $(2+2)+(1+2)+(2+1)$

Or

(d) What are the advantages and disadvantages of plane table survey ?

 $4+2+4$

(e) If the scale is $16^{11} = 1$ mile in how many ways it can be expressed ?

(f) Following bearings were taken in a running compass traverse. Find out the station affected by local attractions and write the correct bearings :

Line	F.B.	B.B.
AB	344°	164°
BC	88°	$269^\circ 30'$
CD	$173^\circ 30'$	$350^\circ 30'$
DA	$263^\circ 30'$	85°

7. Answer the following questions :

(a) Abney's level is based upon what principle ? What is the function of air bubble & mirror ? Why is the eye height added to know height of the tree ?

3+2

(b) How the crop diameter is calculated ? Why the diameter is recorded as dia-class ?

3+2

Or

(c) What is quarter Girth formula ? How is it derived ? Write about its limitations.

1+2+2

(d) Why is it important to know the age of a tree? How the age is determined?

1+4

8. Explain the concept of increment in tree? Discuss the application of CAI and MAI in forest management. What is normal forest?

3+5+4

Or

Write short notes any three of the following : 4×3

- (a) Growing stock ;
 - (b) Working plan ;
 - (c) Yield regulation by reduced area method ;
 - (d) Territorial classification of forest ; and
 - (e) Object of Forest management.
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