

2008

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]

Answer Q. No. 1 and any three from the rest.

1. (a) Write differences between any *five* of the following pairs : (2×5)+5+5
- (i) Ground fire and Crown fire ;
  - (ii) Sapling and Pole ;
  - (iii) Fibre and Flosses ;
  - (iv) Aspect and Exposure ;
  - (v) Laterization and Podsolization ;
  - (vi) Seedling felling and Seeding felling ;
  - (vii) Clear strip and Alternate strip system, and
  - (viii) Agroforestry and Social forestry.
- (b) Write a note on "Fire is a good servant but bad master".
- (c) Explain, how parental rock influence the distribution of species ~~and~~ in forest.

2. Answer any *two* of the following :
- What is Silvics ? What is the objective of Silviculture Study ? 1+4
  - What is microclimate ? How the forest is classified on the basis of temperature ? 2+3
  - What is fire line ? What are the causes of forest fire ? 1+4
  - What are the reasons of accumulation of salts in soil ? What are the soil types formed because of this ? 2+3
3. Answer any *two* of the following :
- Write two tree species each for
    - light demander and
    - good coppices. 2+3
 Briefly explain how the frost causes injuries to plants.
  - Write a brief note on "Group System". 5
  - What is afforestation ? Give the reasons of dying back of sal seedlings. 1+4
  - Write a brief note on "Wildlife as a biotic factor. 5
4. What is shelter wood system ? How it differs from the clear felling system ? Explain the distribution of age classes in one rotation when the rotation is 125 year and the regeneration period 25 years. 2+2+6

Or

Why the clear felling system is not applied in hills ? How the regeneration is obtained in clear felling system ? What are the advantages of this system.

5. Write detail notes on any *two* of the following : 5×2
- Uses of Bamboo ;
  - Tannins of forest origin ;
  - Products of animal origin from forest and
  - Drug yielding plants.

Or

Write brief notes on the following (any four) :  $2\frac{1}{2} \times 2$

- (i) Fodder trees ;
- (ii) Spices ;
- (iii) Gums ;
- (iv) Essential oils ;
- (v) Poison and
- (vi) Edible seeds.

### **Second Half**

[Marks—50]

Answer *all* questions.

6. Distinguish between the following (any four) :  $3\frac{1}{2} \times 4$
- (i) Simple random sampling and stratified random sampling ;
  - (ii) Feeling series and felling cycle ;
  - (iii) Traverse and Triangulation survey ;
  - (iv) Base line and tie line ;
  - (v) Crop height and top height ;
  - (vi) Commercial and standard volume table and
  - (vii) Sustained and progressive yield.
7. (a) Compare the Smalian's formula with that of the Huber's formula mentioning their, accuracy and application. 4+3+5
- (b) Explain the principle of diagonal scale construction.
- (c) How the age of the standing tree is measured ?
- Or
- (d) What is quarter girth formula? Give a note on its accuracy. (2+2)+2+(2+4)

(e) Convert the following whole circle bearing to reduced bearing :

(i)  $40^\circ$  (ii)  $140^\circ$  (iii)  $240^\circ$  and (iv)  $340^\circ$ .

(f) What is the relationship between bearing and Back bearing? The following table shows the recording an unclosed compass traverse. Find out the stations affected by the local attractions and mention correct bearing.

Line	Fore bearing	Back bearing
AB	$340^\circ$	$160^\circ$
BC	$87^\circ$	$268^\circ 30'$
CD	$175^\circ 30'$	$353^\circ$
DE	$265^\circ$	$86^\circ$

8. (a) What is rotation? Discuss the rotation of maximum volume production and rotation of highest income.

$(2+3+3)+4$

(b) Explain the concept of "Normal forest".

Or

(c) What is "Growing Stock"? Describe the method of calculation of NGS based on MAI.  $(2+5)+(1+4)$

(d) What is the objective of yield regulation? Discuss Von Mantel's formula.

9. Write short notes on the *four* of the following :  $3 \times 4$

(i) Rules of BH measurement :

(ii) Form factor ;

(iii) Working plan ;

(iv) Advantages of Prismatic compass survey :

(v) Types of volume table (based on variable) ;

(vi) Object of forest management ;

(vii) Flury's constant and

(viii) Correction of length measured by incorrect chain length.