

2016

M.Sc.

Part-I Examination

BOTANY

PAPER—II

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]

(Taxonomy of Angiosperms)

1. Write short notes on any *five* of the following : 5×4

(a) Consolidation phase ;

(Turn Over)

- (b) Morphometric plasticity ;
- (c) Flora and Monograph ;
- (d) *Archaeofructus* ;
- (e) ICN vs ICBN ;
- (f) Holotype and Lectotype ;
- (g) Salient features of Alismatales ;
- (h) Eudicot.

2. Characterise the order Asterales. Write the advanced features of this order. Discuss the evolutionary significance of this taxon. 6+4+5

Or

Write notes on any *three* of the following : 3×5

- (a) Role of Botanic garden in taxonomic studies ;
- (b) Floral characters of Liliales ;
- (c) Role of plastids in taxonomic treatment. What is 'S' type and 'P' type plastids ?
- (d) Explain phenetic and cladistics approach in taxonomy.

- (e) Cytology as an aid to taxonomy ;
 - (f) Role of Phytochemistry in solving taxonomic problems.
3. Define taxonomic hierarchy. Who first proposed taxonomic hierarchy? What are the major and minor hierarchical categories to be considered for construction of a typical taxonomic hierarchy? 3+2+(7+3)

Or

Name two angiosperm precursors of Mesozoic Era. Discuss their role in the origin of angiosperm. 3+12

Second Half

[Marks—50]

**(Computer Application in Biology
and Bioinformatics)**

Answer any *five* questions.

4. (a) Distinguish between data and information.
- (b) Illustrate system software and Application software.
- (c) Distinguish between files and folders. 3+4+3

5. (a) What are the needs of Page set-up in MS-Word and how do you set up Pages in MS-Word?
 (b) Write the steps in creation of table in MS-word.
 (c) Write the steps of Paragraph creation in MS-Word.
 4+4+2
6. (a) Write the facilities of MS-Excel.
 (b) What are the needs of formating cells?
 (c) Write the steps in creation of Pie chart in MS-Excel.
 (d) Write the basic differences between primary memory and secondary memory.
 3+2+2+3
7. (a) Write the steps of the following items in Foxpro.
 (i) Creation of a New database file.
 (ii) Changing the structure of the existing file.
 (iii) Display the contents of a file.
 (b) Write how internet helps in gathering bio-technological information.
 (3+2+2)+3

8. (a) Calculate Median and Mode from the following data :

Value	Frequency
Less than 10	4
" " 20	16
" " 30	40
" " 40	76
" " 50	96
" " 60	112
" " 70	120
" " 80	125

- (b) Find the standard deviation from the following data

49, 63, 46, 59, 65, 52, 60, 54 (3+3)+4

9. (a) Write the properties of correlation Co-efficient.
 (b) Determine the correlation Co-efficient between x and y —
- | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| x : | 5 | 7 | 9 | 11 | 13 | 15 |
| Y : | 1.7 | 2.4 | 2.8 | 3.4 | 3.7 | 4.4 |
- (c) Write any three properties of Regression equations.
 3+4+3

10. (a) A bag contains 8 white and 6 black balls. If 5 balls are drawn at random, what is the probability that 3 are white and 2 are black?
- (b) Write any three properties each of Binomial and poisson distribution. $4+3 \times 2$
11. (a) Explain the term simple random sampling with replacement (SRSWR).
- (b) What is Type I and Type II errors in sampling distribution?
- (c) Illustrate stratified sampling technique.
- (d) Write the sample size when 't' distribution is suitable. $2+3+4+1$