

2023

BOTANY — HONOURS

Paper : CC-7

(Plant Systematics)

Full Marks : 50

The figures in the margin indicate full marks.

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

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1. Answer *any five* of the following :

- | | |
|---|-----|
| (a) What is lectotype? Cite an example. | 1+1 |
| (b) In which family cleistogamy is widespread? Give example of a plant (Scientific name). | 1+1 |
| (c) Name the largest herbaria of the world and where is it located? | 2 |
| (d) Define plesiomorphy with example. | 2 |
| (e) Define phenogram. | 2 |
| (f) What is phenon line? | 2 |
| (g) What do you mean by stylopodium and where is it found? | 1+1 |

2. Write brief notes on *any two* of the following :

5×2

- Supportive evidences from Palynology in relation to taxonomy
- Role of Botanical Gardens in teaching and research
- Comparative account of monophyletic, polyphyletic and paraphyletic groups
- Encyclopaedic and Biosystematic phases of taxonomy.

3. Answer *any three* of the following :

- Why Bentham and Hooker's system of classification is still operative in many of the important herbaria? Describe the classification system proposed by Cronquist in 1988, highlighting one advantage and one disadvantage of this classification. 2+6+2
- Why is it important to include author name(s) when citing scientific name in relation to plant taxonomy? Describe various types of 'author citation' providing relevant examples to illustrate their application. 2+8
- Discuss the systematic position of the Orchidaceae family according to both Bentham and Hooker and Cronquist classification systems. Mention four key features that make Orchidaceae as one of the most advanced families. Provide a comparative account of floral morphology of Orchidaceae and Alismataceae. 2+4+4

Please Turn Over

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(2)

- (d) State the diagnostic characters of Zingiberaceae. Draw floral diagram of the family and mention three economically important species and their uses. 5+2+3
- (e) Write notes on *any two* of the following : 5×2
- Indented and bracketed keys
 - Significance of Cladistics in taxonomy
 - Plesiomorphic characters of Magnoliaceae
 - Reasons of Orchidaceae as advanced family among monocotyledons.

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