

Total number of printed pages—4

1 (Sem-5/FYUGP) BOT44MJ

2025

BOTANY

(Major)

Paper : BOT0500404

(Plant Systematics)

Full Marks : 45

Time : 2 hours

The figures in the margin indicate full marks for the questions.

1. Answer the following questions : 1×5=5
- (a) What is gynostemium ?
 - (b) Pulses belong to which sub-family ?
 - (c) 'L' stands for what in plant nomenclature ?
 - (d) What is a dichotomous key ?
 - (e) Which molecular character is employed in plant taxonomy ?

2. Write short notes on **any five** of the following : $2 \times 5 = 10$

- (a) Differentiate between monophyly and polyphyly.
- (b) Mention characters of a magnolian stamen.
- (c) What is the parachute mechanism?
- (d) Differentiate between phenograms and cladograms.
- (e) What is a staminode? What is its biological significance?
- (f) Mention *two* palynological characters employed in taxonomy.
- (g) What do you mean by effective and valid publication?
- (h) What is nomina rejicienda? Mention *two* examples.
- (i) Draw a labeled diagram of pollinia.
- (j) Mention the floral formula of Zingiberaceae.

3. Write short notes on **any four** of the following : $5 \times 4 = 20$

- (a) APG system
- (b) Type concept
- (c) Nomina conservanda
- (d) Plesiomorphic characters of Magnoliaceae
- (e) Virtual herbarium and its importance
- (f) Pollination in Orchids
- (g) Grass spikelet
- (h) Operational Taxonomic Units

4. Answer **any one** of the following :

$10 \times 1 = 10$

- (a) Give an account of general characters of the following families mentioning their economic importance : (**any two**)

$5 \times 2 = 10$

- (i) Lamiaceae
- (ii) Euphorbiaceae
- (iii) Orchidaceae
- (iv) Poaceae

(b) Compare a Natural system of classification with a phylogenetic system as prescribed in your syllabus. Phylogenetic systems are preferred more than natural systems—why?

8+2=10

(c) Name the latest ICN mentioning the year of its publication. Mention the Principles of ICN. Give an account of the principle of priority and its limitations.

2+3+5=10

(d) What is a phylogram? Mention the principle of Takhtajan's system of classification. Show how Takhtajan interpreted putative relationship among angiosperm taxa with his bubble diagram.

1+3+6=10