

2018

BOTANY

(Major)

Paper : 4-2

(Plant Taxonomy)

Full Marks : 60

Time : 3 hours

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

1. Answer the following :

1×7=7

- (a) Who is called the father of Indian taxonomy?
- (b) Which year is treated as starting point of botanical nomenclature?
- (c) Why was the term Draft BioCode introduced in biology?
- (d) Who proposed the hypothesis 'neotenic origin'?
- (e) What is meant by Gamma taxonomy?
- (f) Why have DNA technologies created new opportunities for taxonomic studies?
- (g) Define tetradynamous stamen.

2. Answer the following : $2 \times 4 = 8$

- (a) Differentiate between monophyletic and polyphyletic.
- (b) Write a note on spikelet.
- (c) Distinguish between holotype and lectotype.
- (d) Describe the difference between morphological species concept and biological species concept.

3. Answer the following (any three) : $5 \times 3 = 15$

- (a) The family Orchidaceae displays special morphological features and adaptations for cross-pollination. Justify.
- (b) Describe briefly about neo-Adansonian principles.
- (c) Write a note on the importance of wood anatomy in plant classification.
- (d) Write a brief note on specific epithet.
- (e) Describe the economic importance of Zingiberaceae.

4. Answer the following (any three) : $10 \times 3 = 30$

- (a) What is phylogenetic classification? Give a detailed outline of Takhtajan system of classification, 1980. Do you think that this system is entirely based on the principles of phylogeny? Explain briefly.

$2+7+1=10$

(b) What is the basic cladistic concept behind APG system? Give a brief description of APG system II (2003). Write merits and demerits. $1+6+3=10$

(c) Why is the family Asteraceae regarded as highly advanced family among the dicotyledons? Mention its systematic position. $8+2=10$

(d) Write explanatory notes on the following : $5+5=10$

(i) History of International Code of Botanical Nomenclature (ICBN)

(ii) Salient features of Lamiaceae

(e) Why Bentham and Hooker placed Magnoliaceae under the cohort Ranales at the beginning of their classification? Discuss the affinities and economic importance of Magnoliaceae. $4+3+3=10$

(f) Write an explanatory note on literatures in plant taxonomy. Define cluster analysis, OTUs and dendrogram. $4+2+2+2=10$
