

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 : $1 \times 7 = 7$

- (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.

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(Turn Over)

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. $4+2+2+2=10$

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