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3 (Sem-4/CBCS) BOT HC 3

2023

BOTANY

(Honours Core)

Paper : BOT-HC-4036

(Plant Systematics)

Full Marks : 60

Time : Three hours

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

1. Answer the following/Choose the correct answer : 1×7=7
- (a) Define cladogram.
 - (b) What the term 'Monochlamydeae' stands for ?
 - (c) Name the *three* most commonly used infraspecific categories.
 - (d) Who is considered as the father of modern genus concept ?

Contd.

(e) In most of the Indian herbarium, the specimens are arranged according to :

- (i) Engler and Prantl's system
- (ii) Bentham and Hooker's system
- (iii) Charles Edwin Bessey's system of classification
- (iv) Hutchinson's system

(f) What do you understand by phyllaries ?

(g) When two or more authors publish a new species or propose a new name, their names are linked using the epithet —

- (i) in
- (ii) ex
- (iii) et
- (iv) emend

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

- (a) Differentiate between homology and analogy.
- (b) Mention the components of a reliable e-flora.
- (c) Write the merits of APG system of classification.

(d) Write the differences between labellum of family zingiberaceae and orchidaceae.

3. Answer **any three** of the following questions : $5 \times 3 = 15$

- (a) How a phenogram can be constructed ?
- (b) Write the full form of ICN. State the principles of priority with example and discuss its limitations.
- (c) Morphology of the grass spikelet.
- (d) Write short notes on contribution of Carolus Linnaeus and C. E. Bessey to plant taxonomy.
- (e) Why is the family asteraceae regarded as highly evolved among dicots ?

4. Answer **any three** of the following : $10 \times 3 = 30$

- (a) What is herbarium ? Discuss the role of herbarium in teaching and taxonomic research. Write names and their acronyms of *two* herbaria, *one* from India and *one* from abroad. $2 + 6 + 2 = 10$
- (b) What is meant by co-evolution ? Add a note on the co-evolution of angiosperm and animals. $2 + 8 = 10$

(c) Enumerate various types of homology. Write a brief note on monophyly, paraphyly and polyphyly. 3+7=10

(d) What is phytochemistry ? Discuss some important sources of taxonomic evidences from phytochemistry. 2+8=10

(e) What is meant by natural and phylogenetic system of classification ? Give an outline classification of angiosperm as proposed by Engler and Prantl. State the merit and demerit of the classification. 2+6+2=10

(f) Give the scientific names of *any two* of the following plants, mention their respective families and also give the salient features of those families with their respective phylogeny. 5+5=10

(i) Tobacco

(ii) Holy Basil

(iii) Banana

(iv) Oat