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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 : 2×4=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