2023
B.A./B.Sc.
Fourth Semester
CORE – 10
BOTANY
Course Code: BOC 4.31
(Plant Systematics)

Total Mark: 70   *Pass Mark: 28*
Time: 3 hours

Answer <u>five</u> *questions, taking* <u>one</u> *from each unit.*

UNIT–I

1. Discuss the important components of plant taxonomy.   14

2. (a) Which characters of pollen grains are useful in solving taxonomic
        problems?   4
    (b) Write a note on the following: 5×2=10
        (i) Field inventory
        (ii) Virtual herbarium

UNIT–II

3. (a) Write three important identifying morphological characters of
        <u>any two</u> families.   3×2=6
        (i)   Magnoliaceae
        (ii) Fabaceae
        (iii) Poaceae
    (b) Write the systematic classification of the families.   4×2=8
        (i) Ranunculaceae
        (ii) Orchidaceae

4. Draw the floral diagram and write the floral formula of <u>any two</u> families.
    (a) Lamiaceae   7×2=14
    (b) Cucurbitaceae
    (c) Zingiberaceae

UNIT–III

5. (a) What is a taxon? Explain the concept of a genus.   2+6=8
   (b) Differentiate between taxonomic group and taxonomic rank.   6

6. (a) What is a type specimen?   2
   (b) Define the following terms: 2½×2=5
       (i) Nomen nudum
       (ii) Later homonym
   (c) Write a note on the following: 3½×2=7
       (i) Principles of priority
       (ii) Names of hybrid

UNIT–IV

7. (a) Write a brief summary of contributions by Carolus Linnaeus, Augustine Pyramus de Candolle, and Arthur Cronquist in the field of taxonomy.   3+3+3=9
   (b) Write a critical account of the Bentham and Hooker system of classification.   5

8. (a) Give an outline of the Engler and Prantl system of classification up to series and state its merits and demerits.   8
   (b) What is the angiosperm phylogeny group (APG)? What are the principles of the APG's approach to classification?   6

UNIT–V

9. (a) Explain the following terms with an example.   3×3=9
       (i) Parallelism
       (ii) Convergence
       (iii) Paraphyly
   (b) Explain the process of co-evolution of angiosperms and animals.   5

10. (a) Describe the different types of variation observed in plants.   10
    (b) Write a note on cluster analysis method in construction of phylogenetic tree.   4

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