

B.Sc. BOTANY
THIRD SEMESTER
ANGIOSPERM TAXONOMY AND DEVELOPMENTAL BIOLOGY
BSB-931 (IDMJ)

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

Marks: 20

$$1 \times 20 = 20$$

Objective

Choose the correct answer from the following:

1. "Family" of a species is ended with "suffix"
 - a. -aceae
 - b. -ades
 - c. -ales
 - d. -phyta
2. In flowering plants, the process where one male gamete fuses with the egg cell and the other fuses with the central cell is known as:
 - a. Single fertilization
 - b. Cross-pollination
 - c. Double fertilization
 - d. Self-fertilization
3. A leaf with stalk is called
 - a. Petiolate
 - b. Sessile
 - c. Stalked
 - d. None of these
4. Arrangement of leaf in the stem is known as
 - a. Venation
 - b. Aestivation
 - c. Phyllotaxy
 - d. All of these
5. Reticulate venation is seen in
 - a. Dicot angiosperm
 - b. Gymnosperm
 - c. Monocot angiosperm
 - d. Pteridophyta
6. Mathematical representation of a flower is called
 - a. Floral diagram
 - b. Floral description
 - c. Floral anatomy
 - d. Floral formula
7. Transfer of pollen grain from anther to the stigma is called
 - a. Pollination
 - b. Aestivation
 - c. Fertilization
 - d. All of these
8. Which of the following families is characterized by having flowers with three petals and parallel-veined leaves?
 - a. Fabaceae
 - b. Asteraceae
 - c. Poaceae
 - d. Lamiaceae
9. A group of organisms that can reproduce naturally with one another
 - a. Species
 - b. Family
 - c. Genus
 - d. Order

10. Which monocot family is economically significant for providing major cereal crops such as wheat, rice, and corn?
 - a. Poaceae
 - b. Liliaceae
 - c. Bromeliaceae
 - d. Araceae
11. Who is recognized for establishing the system of binomial nomenclature?
 - a. Carl Linnaeus
 - b. Charles Darwin
 - c. Gregor Mendel
 - d. Watson and Crick
12. The scientific name of potato is:
 - a. *Capsicum annuum*
 - b. *Solanum melongena*
 - c. *Solanum torvum*
 - d. *Solanum tuberosum*
13. John Hutchinson's classification system (1884-1972) was based on:
 - a. Natural system
 - b. Phylogenetic system
 - c. Asexual system
 - d. Artificial system
14. Which of the following is NOT an objective of plant taxonomy?
 - a. Identification of unknown plant species
 - b. Developing medicinal drugs from plants
 - c. Establishing evolutionary relationships between species
 - d. Classifying plants into hierarchical categories
15. How many main classes are there in the Bentham and Hooker classification system?
 - a. 2
 - b. 3
 - c. 4
 - d. 5
16. Which of the following genera is NOT a member of the Asteraceae family?
 - a. *Taraxacum*
 - b. *Helianthus*
 - c. *Rosa*
 - d. *Chrysanthemum*
17. The term "pappus" in Asteraceae refers to:
 - a. The outer whorl of petals
 - b. The modified leaf structures
 - c. The bristles or scales at the top of the achene
 - d. The receptacle of the flower
18. In Solanaceae, the fruit type is generally:
 - a. Capsule
 - b. Drupe
 - c. Achene
 - d. Berry
19. Which of the following is a well-known member of the Asteraceae family?
 - a. Sunflower
 - b. Potato
 - c. Tomato
 - d. Cabbage
20. In which family would you classify the Chilies (*Capsicum annuum*)?
 - a. Fabaceae
 - b. Asteraceae
 - c. Solanaceae
 - d. Lamiaceae

(Descriptive)

Marks : 50

Time : 2 hrs. 40 min.

[Answer question no.1 & any four (4) from the rest]

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| 1. Write the characters and economic importance of the family Orchidaceae. | 5+5=10 |
| 2. Draw and describe different parts of a typical leaf. | 4+6=10 |
| 3. Short notes on
a) Pollination
b) Fertilisation | 5+5=10 |
| 4. Define herbarium. Write about herbarium techniques in detail. | 2+8=10 |
| 5. What is the binomial system of nomenclature? Discuss the guidelines for plant nomenclature. | 2+8=10 |
| 6. What is taxonomy? Discuss the key characteristics, merits and drawbacks of the classification system proposed by Bentham and Hooker. | 2+4+4=10 |
| 7. Discuss the morphological and reproductive traits of the Asteraceae family, along with their economic significance. | 3+3+4=10 |
| 8. Describe the morphological characteristics of family Solanaceae, with floral formula and diagram. | 4+3+3=10 |

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