

**(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2022 ONLY)**

22UBY304

REG.NO. :

**N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI
END-OF-SEMESTER EXAMINATIONS : NOVEMBER-2023
COURSE NAME: B.Sc.-BOTANY
SEMESTER: III**

**MAXIMUM MARKS: 50
TIME : 3 HOURS**

**PART - III
CYTOLOGY, ANATOMY AND EMBRYOLOGY
SECTION – A (10 X 1 = 10 MARKS)**

ANSWER THE FOLLOWING QUESTIONS.

MULTIPLE CHOICE QUESTIONS.

(K1)

1. The plasma membrane mainly consists of _____.
 a. Phospholipids embedded in a protein bilayer.
 b. Protein embedded in a phospholipid bilayer.
 c. Protein embedded in a polymer of glucose molecule.
 d. Protein embedded in carbohydrate bilayer.
2. Dedifferentiated cell attains a particular function and loses its ability to divide again is called _____.
 a. Differentiation b. Dedifferentiation c. Cell division d. Redifferentiation
3. Secondary growth is due to the presence of _____.
 a. Cambium b. Apical meristem c. Intercalary meristem d. Parenchyma
4. Water containing cavities in vascular bundle is characteristic feature of _____.
 a. Dicot root b. Monocot root c. Monocot stem d. Monocot leaves
5. In orthotropous ovule, the micropyle and chalaza are _____.
 a. Parallel to funiculus b. Right angles to funiculus
 c. Oblique angle to funiculus d. In straight line with funiculus

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES. (K2)

6. Mention any two functions of plasma membrane.
7. Define the term differentiation.
8. Differentiate dicot stem from monocot stem. (2 Points)
9. List any two function of trichomes.
10. What is parthenocarpy?

SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Illustrate the structure and functions of plasma membrane.
 (OR)
 b) Sketch the structure of ribosomes and list its functions.
12. a) Interpret the tunica corpus theory of shoot meristem.
 (OR)
 b) Assess the functions of cambium.

13.a) Organize the primary structure of monocot stem.
(OR)
b) Identify the difference between hard wood and sap wood .

14.a) Discuss the various types of stomata.
(OR)
b) Sketch the internal structure of Grass.

15.a) Show the types of tapetum in anther.
(OR)
b) Examine the concept of parthenocarpy in fruit development.

SECTION – C**(5 X 5 = 25 MARKS)**

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.
(K4 (Or) K5)

16. a) Analyze the ultra-structure and functions of mitochondria.
(OR)
b) Explain the process of mitosis with suitable diagram.

17.a) Determine the various theories of root apical meristem.
(OR)
b) Criticize the types of simple tissues with suitable diagram.

18. a) Examine the anomalous secondary growth in *Boerhavia* stem.
(OR)
b) Inspect the anomalous secondary growth in *Dracaena* stem.

19.a) Evaluate the internal structure of *Tridax* leaf.
(OR)
b) Prove the presence of xerophytic anatomical characters in *Casuarina* with diagram.

20.a) Assess the different types of ovules with suitable diagram.
(OR)
b) Interpret the embryo development in dicot .
