

(FOR THE CANDIDATES ADMITTED  
DURING THE ACADEMIC YEAR 2024 ONLY)

24PBY310

REG.NO. :

**N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI**  
**END-OF-SEMESTER EXAMINATIONS : NOVEMBER-2025**  
**M.Sc.-BOTANY** **MAXIMUM MARKS: 75**  
**SEMESTER: III** **TIME : 3 HOURS**

**PLANT BIOCHEMISTRY AND BIOPHYSICS**

**SECTION – A**

**(10 X 1 = 10 MARKS)**

**ANSWER THE FOLLOWING QUESTIONS.**

**MULTIPLE CHOICE QUESTIONS.**

**(K1)**

1. Polysaccharides, proteins, nucleic acids and esters are known as \_\_\_\_\_.  
a. secondary metabolites    b. primary metabolites    c. none of the above    d. both a and b
2. Carbohydrates are present in the muscles in the form of \_\_\_\_\_.  
a. amylopectin    b. amylose    c. collagen    d. glycogen
3. Which enzyme is responsible for the oxidation process that occurs in fruits and vegetables that turns the food brown?  
a. Polyphenol oxidase    b. Bromelain    c. Serrapeptase    d. Papain
4. Which of the following is not a common method for radiolabeling molecules?  
a. Chemical labeling    b. Enzymatic labeling  
c. Biosynthesis with radioactive precursors    d. UV absorption
5. The weakest type of Van der Waals force is \_\_\_\_\_.  
a. Dipole- dipole interaction    b. Hydrogen bonding  
c. London dispersion force    d. Ion- dipole interaction

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

**(K2)**

6. Define Buffer.
7. Benefits of fatty acids.
8. Functions of Beta cyanins.
9. Enzyme inhibition.
10. Redox potential.

**SECTION – B**

**(5 X 5 = 25 MARKS)**

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

11. a) Describe Henderson – Hasselbalch equation.  
**(OR)**  
b) Discover the biological role of buffer system.
12. a) List the benefits of plant waxes, cholesterol and lecithin.  
**(OR)**  
b) Compare the properties of protein and lipids.

**(CONTD.....2)**

- 13.a) Describe the shikimic acid pathway.  
(OR)  
b) Examine the structure and functions of anthocyanins.
14. a) Discover the mechanism of enzyme action.  
(OR)  
b) List the factors affecting enzyme activity.
15. a) Examine the concept of free energy.  
(OR)  
b) Discover the radio labelling techniques.

**SECTION – C****(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.****(K4 (Or) K5)**

16. a) Compare and contrast Ionic bond and Covalent bond.  
(OR)  
b) Discuss Van der Waals forces.
17. a) Classify lipid structure and properties.  
(OR)  
b) Point out the classification and properties of aminoacids.
18. a) Describe secondary metabolites  
(OR)  
b) Examine Polyphenolic compounds.
19. a) Discuss the enzyme utilization in industry.  
(OR)  
b) Summarise the applications of enzymes in medicine.
20. a) Discuss the molecular imaging of radioactive material.  
(OR)  
b) Describe the laws of Thermodynamics in detail.

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