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S – 6853

Reg. No. :

Name :

Third Semester M.Sc. Degree Examination, February 2024

Botany

**BO 232 : BIOCHEMISTRY, PLANT PHYSIOLOGY AND
RESEARCH METHODOLOGY**

(2019 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

(Draw diagrams wherever necessary)

- I. Answer the following questions.
1. What is a buffer? Give an example.
2. Define glycosidic bond.
3. Which is the symmetric amino acid?
4. What is meant by allosteric enzyme?
5. Explain photorespiration.
6. What is meant by C-4 cycle?
7. Comment on circadian rhythm.
8. What is meant by data?
9. Describe level of significance.
10. What is APA style of citation?

(10 × 1 = 10 Marks)

P.T.O.



II. Answer the following questions in not more than **50** words.

11. (a) Differentiate between acids and bases.

OR

(b) Comment on pH and pKa values.

12. (a) Compare abzymes with ribozymes with examples.

OR

(b) Explain coenzymes.

13. (a) Give an account of structure of rubisco.

OR

(b) What are phytochromes?

14. (a) Elaborate glyoxylate cycle.

OR

(b) Give an account of non-symbiotic nitrogen fixation.

15. (a) Explain the importance of review of literature.

OR

(b) Write about degree of freedom.

(5 × 2 = 10 Marks)



III. Answer the following questions in not more than **150** words.

16. (a) Explain the importance of Henderson-Hasselbalch equation.

OR

(b) Describe gluconeogenesis.

17. (a) Describe the process of transamination in detail.

OR

(b) Give an account of IUB system of classification of enzymes.

18. (a) Give an account of enzyme kinetics.

OR

(b) Describe biosynthesis of pyrimidines.

19. (a) Differentiate between Photosystem I and II.

OR

(b) Describe CAM pathway.

20. (a) Comment on anaerobic respiration in detail.

OR

(b) Explain the mechanism of phloem translocation.

21. (a) What are the physiological effects of cytokinins and gibberellins?

OR

(b) Describe the physiological responses of plants to drought and cold.



22. (a) Comment on thesis preparation in detail.

OR

(b) Explain various methodologies of experimental designs.

(7 × 5 = 35 Marks)

IV. Answer the following questions in not more than **250** words.

23. (a) Explain various levels of protein conformation.

OR

(b) Give an account of structure and synthesis of starch and cellulose.

24. (a) Give an account of TCA cycle and ETS.

OR

(b) Describe C-3 cycle of photosynthesis with special reference to energetics of CO₂ fixation

(2 × 10 = 20 Marks)

