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Reg. No. : .....

Name : .....

Third Semester M.Sc. Degree Examination, January 2023

Botany

BO 232 : BIOPHYSICS, BIOCHEMISTRY AND PLANT PHYSIOLOGY

(2013-2018 Admission)

Time : 3 Hours Max. Marks : 75

I. Answer the following questions.

1. What is Van Der Waals Force?
2. What is Bond angle?
3. Flow cytometry.
4. Comment on ESR spectroscopy.
5. What are phospholipids?
6. Comment on Non Protein amino acids.
7. What is Proton motive force?
8. What is climacteric fruit?
9. What is canopy cover?
10. Explain Vernalisation.

(10 × 1 = 10 Marks)

P.T.O.

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

11. (a) What are coupled reactions?

OR

(b) What is sheath fluid?

12. (a) Differentiate between SEM and TEM.

OR

(b) What do you mean by optical sectioning in Confocal microscopy?

13. (a) Comment on interconversion of amino acids.

OR

(b) How is diacylglycerol synthesized?

14. (a) What is Phloem loading?

OR

(b) In seasonally flooded wetlands, some of the submerged aquatic plants can be seen to have very high amounts of acidity in its vegetative parts in the morning which gets normailsed by the evening. What may be the reason for this acid build up in aquatic plants? Explain.

15. (a) Explain the process of abscession.

OR

(b) What is the role of the Phenylpropanoid pathway in plants?

(5 × 2 = 10 Marks)

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

16. (a) Differentiate between vertical and Horizontal gel electrophoresis.

OR

(b) Comment on X - Ray diffraction and its applications in Biology.

17. (a) Explain plasma emission spectroscopy and its applications.

OR

(b) Explain the technique of Liquid scintillation.

18. (a) Illustrate the pathways that is behind starch biosynthesis.

OR

(b) How fatty acids are synthesized?

19. (a) A can of oil which was exposed to air in sterile condition became rancid in a few days. What may be the reason? Explain.

OR

(b) Explain purine synthesis pathways.

20. (a) Solve the energetics of Photosynthesis and respiration.

OR

(b) Give the structure of Light harvesting complex.

21. (a) What is Photorespiration? What are its advantages?

OR

(b) What is florigen? How is it important?

22. (a) What are phytoalexins? Elaborate its method of action.

OR

(b) What is allelopathy? How its significant for Invasive alien plants?

(7 × 5 = 35 Marks)

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

23. (a) With suitable illustrations explain various electrophoretic techniques and its applications.

OR

(b) Elaborate amino acids and Proteins with focus on various types and classification.

24. (a) Briefly discuss the various factors involved in seed germination and the metabolic pathways involved with it.

OR

(b) Elaborate how plants cope up with various abiotic stress elements.

(2 × 10 = 20 Marks)
