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Reg. No. : .....

Name : .....

Third Semester M.Sc. Degree Examination, March 2022

Botany

BO 232 : BIOCHEMISTRY, PLANT PHYSIOLOGY AND RESEARCH METHODOLOGY

(2019 Admission Onwards)

Time : 3 Hours Max. Marks : 75

I. Answer the following questions.

1. Allosteric enzyme mechanism.
2. Ribozymes.
3. Gangliosides.
4. Co-enzymes.
5. Esterification.
6. Comment on cytochrome.
7. Water potential.
8. Compatible solutes.
9. Comment on the anapleurotic nature of citric acid cycle.
10. Differentiate between active and passive transport.

(10 × 1 = 10 Marks)

P.T.O.

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

11. (a) Explain hydrogenation.

OR

(b) Comment on saponification.

12. (a) Comment on enzyme activation.

OR

(b) Explain non-competitive enzyme inhibition and inhibitors.

13. (a) Explain the anaerobic fate of pyruvate.

OR

(b) Explain the aerobic fate of pyruvate.

14. (a) Explain preparatory phase of glycolysis.

OR

(b) Explain pay-off phase of glycolysis.

15. (a) Explain copyright.

OR

(b) What is IPR?

(5 × 2 = 10 Marks)

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

16. (a) Explain Michaelis-Menten equation of enzyme kinetics.

OR

(b) Explain V_{max} and K_m of enzyme kinetics.

17. (a) Explain the primary and secondary structure of protein, and give examples.

OR

(b) Explain the tertiary and quaternary structure of protein, and give examples.

18. (a) Describe the process of biological nitrogen fixation.

OR

(b) Write a note on nitrogenase enzyme.

19. (a) Write a note on thigmonasty.

OR

(b) Write a note on photoperiodism.

20. (a) Explain the regulation of glycolysis.

OR

(b) Write a note on chaperons and its functions.

21. (a) Give an account on stress and stress responses in plants.

OR

(b) What are the various morphological modifications shown by plants during abiotic stresses?

22. (a) Explain measures of central tendency.

OR

(b) Enumerate various data collection methods.

(7 × 5 = 35 Marks)

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

23. (a) Describe the different steps whereby a molecule of glucose is oxidized to CO_2 in glycolysis and the citric acid cycle. Mention the steps in which CO_2 is released, and energy conserved?

OR

(b) Explain the biochemistry and genetics involved of nitrogen fixation.

24. (a) With relevance to biological research, comment on the process of hypothesis making, with special relevance to methods of data collection.

OR

(b) With reference to it application, explain any three of the five software programmes that are used in checking plagiarism.

(2 × 10 = 20 Marks)

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