TDC (CBCS) Odd Semester Exam., 2021
held in March, 2022

BOTANY

(1st Semester)

Course No. : BOTHCC–102T

(Biomolecules and Cell Biology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

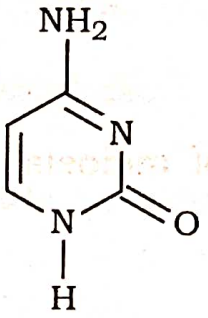
SECTION—A

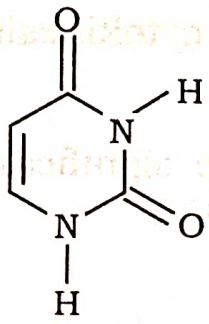
Answer any *ten* of the following questions : 2×10=20

1. What is pH?

2. State two functions of fatty acids.

3. Name the following nitrogenous bases :





4. What is holoenzyme?

5. What is apoenzyme?

6. What is coenzyme?

7. What is passive transport?

8. What is active transport?

9. What is facilitated transport?

10. What is cytoskeleton?

11. What are lysosomes?

12. What is endoplasmic reticulum?

13. State two differences between Metaphase of mitosis and Metaphase I of meiosis.

14. What is cytokinesis?

15. State the significance of meiosis.

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. Write a note on different types of chemical bonds and mention their significance. 6

17. Discuss the structures of B and Z types of DNA. 3+3=6

18. State the first law of thermodynamics. Explain the concept of free energy. 2+4=6

19. Write short notes on the following : 3+3=6

    (a) Role of ATP as energy currency molecule

    (b) Lock and key hypothesis

20. Write a note on endosymbiotic theory of the origin of eukaryotic cell properly using available evidences in support of your argument. 6

21. Write short notes on the following : 3+3=6

    (a) Exocytosis

    (b) Endocytosis

22. Write a note on structure and function of cell wall. 6

23. Write short notes on the following : 3+3=6

(a) Chloroplast

(b) Nucleolus

24. Write a note on prophase I of meiosis. 6

25. Write short notes on the following : 3+3=6

(a) Cell cycle

(b) Protein kinases

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