2021/TDC/CBCS/ODD
BTCHCC–101T/298

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

BIOTECHNOLOGY

(1st Semester)

Course No. : BTCHCC–101T

(Biochemistry and Metabolism)

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* questions : 2×10=20

1. Write the name of the bond joining two amino acids. How is it formed?

2. Differentiate between essential and non-essential amino acids.

3. What is primary protein structure?

4. What is a reducing sugar? Give an example.

5. What are the final products of lactose hydrolysis?

6. What is glycosidic linkage? Give example.

7. What is a phospholipid? Give one example with structure.

8. What do you mean by triglycerides? Give one example.

9. Differentiate between DNA and RNA.

10. What do you mean by holoenzyme? Give one example.

11. Differentiate between cofactor and coenzyme.

12. Define activation energy and transition state.

13. How many molecules of pyruvic acid are produced in one cycle of glycolysis? Write the full form of PEP.

14. What do you mean by anaerobic respiration of glucose?

15. Name the components of the respiratory electron transport system.

SECTION—B

Answer any *five* questions : 6×5=30

16. Discuss different structural forms of protein with examples. 6

17. Discuss the methodologies involved in protein purification. 6

18. Write about the different types of carbohydrates with chemical structure. 6

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

    (a) Glycoprotein

    (b) Polysaccharides

20. Discuss the role of lipids in biological system with examples. 6

21. Discuss the structure of DNA. How does it differ in the different forms like A, B and Z? 6

22. What do you mean by enzyme specificity? Discuss the mechanisms of action of enzymes. 6

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

(a) Pyridoxal phosphates

(b) Roles of NAD^+ and $NADP^+$

24. Write down the reactions of pentose phosphate pathway. 6

25. Discuss the mechanism of glycolysis. How many molecules of ATP are produced in this process? 6

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