TB243644K

Reg. No :.....

Name :.....

**BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, NOVEMBER 2024**

**2023 ADMISSIONS REGULAR**

**SEMESTER III - COMPLEMENTARY COURSE 1 (BIOCHEMISTRY )**

**ND3C05B20 - Nutritional Biochemistry**

**Time : 3 Hours** **Maximum Marks : 80**

## Part A

**I. Answer any Ten questions. Each question carries 2 marks** **(10x2=20)**

1. Briefly explain the metabolism of fructose.
2. Relate the synthesis of oxaloacetate and its utilization in TCA cycle.
3. Describe oligosaccharides with example.
4. Discuss β oxidation of MUFA.
5. Explain degradation of cholesterol.
6. What are derived lipids? Give suitable examples.
7. How is glutamine synthesized in brain?
8. Write a note on transmethylation and synthesis of SAM.
9. Briefly explain cytoplasmic part of urea cycle.
10. Briefly discuss the glycogenolysis stage of starvation.
11. What are the energy reserves of a normal 70 kg weighed man?
12. Describe ebb phase.

## Part B

**II. Answer any Six questions. Each question carries 5 marks** **(6x5=30)**

13. Explain different types of carbohydrates according to the number of sugar units present.
14. Differentiate between fructose and galactose metabolism.
15. Explain the conversion of various non-carbohydrates to glucose.
16. Describe beta oxidation of palmitic acid with its energetics.
17. Discuss the synthesis of triglycerides.
18. How is ammonia removed from the body?
19. Examine urea cycle.
20. Explain the derangements in lipid metabolism in diabetes.
21. How does muscle wasting result in diabetic patients?

## Part C

**III. Answer any Two questions. Each question carries 15 marks** **(2x15=30)**

22. What is gluconeogenesis? Explain the pathway and substrates involved.
23. Elaborate β oxidation of odd chain fatty acids. Elaborate on Denovo synthesis of palmitic acid.
24. Summarize the catabolic reactions of amino acids.
25. Explain the significance of integration of metabolic pathways along with metabolic profile of various organs.