लक्ष्मं विद्यमानम्

WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 3rd Semester Examination, 2023-24

FNTACOR05T-FOOD AND NUTRITION (CC5)

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.

Answer any *four* questions from the following 10×4 = 40

1. Write short notes on the following: 2×5 = 10
   (a) Transmethylation
   (b) Carbamoyl phosphate
   (c) Glucose-6-phosphatase
   (d) Catabolic products of pyrimidines
   (e) Glycogen synthase.

2. (a) Describe the reactions of the preparatory phase of glycolysis. 5+5
   (b) How many ATPs are formed during glycolysis?
   (Given: $NADPH+H^+$ = 2.5 ATP; $FADH_2$ = 1.5 ATP)

3. (a) State two biochemical reactions where TPP acts as coenzyme. $2\frac{1}{2}+2\frac{1}{2}$
   (b) How are zinc and magnesium physiologically and biochemically important for human body? $2\frac{1}{2}+2\frac{1}{2}$

4. (a) Discuss transamination reactions. 4+(2+2)+2
   (b) Discuss anaplerotic reactions with two examples.
   (c) Why are essential amino acids called so?

5. (a) What are energy rich bonds in ATP? 2+3+5
   (b) How are high energy phosphate bonds formed in biological oxidation?
   (c) Describe the components of mitochondrial electron transport chain.

6. (a) Discuss the role of Vitamin B_2 in metabolism. 5+3+2
   (b) Why is Sodium-Potassium balance important for our body?
   (c) Mention the importance of selenium in human body.

7. (a) Explain the cause of phenylketonuria. 3+2+5
   (b) What is meant by ketogenic amino acids?
   (c) Describe the pathway of β-oxidation of Fatty acids.

8. (a) Discuss the pathophysiological importance of cholesterol. 5+5
   (b) Why it is important to have a pathway like gluconeogenesis?

9. (a) Discuss the functions of calcium in human body. 5+5
   (b) Describe the role of folic acid in metabolism.

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