



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 2nd Semester Examination, 2022



**FNTACOR03T-FOOD AND NUTRITION (CC3)**

**FOOD CHEMISTRY, BIOPHYSICS AND BIOCHEMICAL PRINCIPLES**

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. Define the following terms

2×5 = 10

- (i) Optical isomerism
- (ii) Abzyme
- (iii) Ribozyme
- (iv) Essential fatty acids
- (v) Protein efficiency ratio (PER)

2. Why is it essential to include fibres in our diet? Describe the components of dietary fibres. Why is cellulose not digested in human intestine?

3+4+3=10

3. Describe the primary, secondary and tertiary structures of proteins.

2+4+4=10

4. (a) What do you mean by first class and second class proteins? What is a reference protein?

(3+2)+5=10

(b) Classify amino acids.

5. What are phospholipids? Give the structure of cholesterol. What is rancidity of fats? Define acid value of fats.

4+2+2+2=10

6. Differentiate between competitive and non-competitive inhibition of enzymes. Describe isozymes giving suitable examples. Describe the lock and key mechanism of enzyme substrate interaction.

4+2+4=10

7. What is Lineweaver-Burk plot? What is its advantage over plot of Michaelis Menten equation? Describe the importance of rate limiting steps in a metabolic pathway.

4+2+4=10

8. What is stereoisomerism? Give the structures of possible stereoisomers of lactic acid. What are epimers and anomers? 3+3+4=10
9. Explain the double titration curve of glycine. List the names of all essential amino acids. Give the structure of imino acid. 4+3+3=10

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

—x—