



**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.*

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