



## 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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