

Total No. of printed pages = 4

19/3rd Sem/UFET303

2021

BIOCHEMISTRY AND HUMAN NUTRITION

Full Marks – 100

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Answer any *five* questions.

1. (a) What are cellular pool? Explain its two phases. 2+4=6
- (b) "Amino acids are amphoteric in behaviour". Explain. 4
- (c) Define ETC. Explain the process of electron transport chain giving suitable diagram. 2+8=10
2. (a) Define Co-factor. Explain the role of metals as co-enzymes. 2+4=6
- (b) What is N-equilibrium? Explain the importance of amino acid pool. 2+4=6

[Turn over

(c) How are micelles formed? List the various steps involved in fat digestion and absorption.

8

3. (a) Define the following terms on any *five* :

2×5=10

(i) ES-Complex

(ii) Phosphorylation

(iii) Mutase

(iv) Substrates

(v) Oxido-reductase

(vi) BMI.



(b) What are allosteric site? How are lock-and-key and induced fit models similar. 5

(c) What is ATP? How GTP is different from ATP? 5

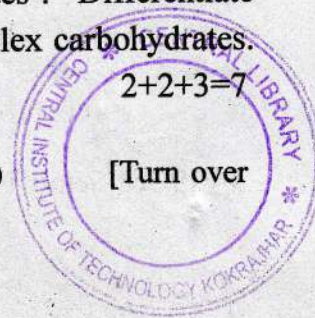
4. (a) Define amino acid? Give important characteristics of an amino acid. 6

(b) What is Glycolysis? Describe the steps involved in Glycolysis. 8

(c) What is optimum pH? How does pH affect the action of enzymes on their substrates?

2+4=6

5. (a) Distinguish between (any *three*): $3 \times 3 = 9$
- (i) Competitive and non-competitive inhibition
 - (ii) Positive and negative nitrogen balance
 - (iii) Sugar and non-sugar molecule
 - (iv) Endopeptidase and exopeptidase.
- (b) Define K_m . Explain the effect of substrate concentration on the velocity of enzymatic reaction with suitable diagrams. 6
- (c) Define metabolism. Explain the role of NADH and $FADH_2$ in cell metabolism. 5
- 6 (a) What are bio-chemical reactions? What are the major types of biochemical reactions? 6
- (b) What is nutritional assessment? Explain in brief the clinical method of nutritional assessment. 7
- (c) What are carbohydrates? Write the important properties of carbohydrates? Differentiate between Simple and Complex carbohydrates. $2+2+3=7$



7. Write short notes on any *four* of the following :

4×5=20

- (a) Absolute specificity of enzymes
- (b) Oligosaccharides
- (c) Protein digestion
- (d) BMR
- (e) Nutritional deficiency diseases.

