

CHE-9

**BACHELOR OF SCIENCE (B.Sc.)**

**Term-End Examination**

**June, 2005**

**CHEMISTRY**

**CHE-9 : BIOCHEMISTRY**

*Time : 2 hours*

*Maximum Marks : 50*

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**Note :** Answer any **five** questions. All questions carry equal marks.

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1. (a) Define and explain the significance of : 6
  - (i)  $K_m$
  - (ii) Isoenzymes
- (b) Name two peptides with biological activity. Describe the function of one of them briefly. 4
2. (a) Briefly discuss different stages of protein synthesis. 6
- (b) Differentiate between codons and anticodons. What is the importance of initiation and termination codons ? 4

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3. (a) Give a brief account of gluconeogenesis. 4
- (b) Give two examples of adequate proteins. Name any four of the essential amino acids. 3
- (c) Define isoelectric point. How do the amino acid molecules behave in acidic or basic medium? 3
4. (a) Write down the types of biological reactions with which the following vitamins are associated. Give one disease each caused by the deficiency of these vitamins :  $7\frac{1}{2}$
- (i) Niacin
  - (ii) Folic acid
  - (iii) Biotin
  - (iv) Pantothenic acid
  - (v) Cyanocobalamine
- (b) What are uncouplers and how do they act? Give one example of an uncoupler.  $2\frac{1}{2}$
5. Differentiate between the following pairs :  $2\frac{1}{2} \times 4 = 10$
- (i) Substrate level and Oxidative phosphorylation
  - (ii) DNA polymerase and RNA polymerase
  - (iii) Chloroplast and Mitochondria
  - (iv) Competitive and Non competitive inhibition of enzyme

6. (a) What are essential fatty acids and why are they essential? 2
- (b) Name the different types of lipoproteins found in plasma. What is their functional role? 4
- (c) Discuss the important functions associated with any four trace elements. 4
7. Write short notes on any **four** of the following :  $2\frac{1}{2} \times 4 = 10$
- (a) Eicosanoids
- (b) t-RNA
- (c) Immobilized enzymes
- (d) Cellular immunity
- (e) S-phase of cell cycle