

Special Examination – 2012
BIOCHEMISTRY

Full Marks – 70
Time : 3 Hours

Answer Question No. 1 which is compulsory and any **five** from the rest.

The figures in the right-hand margin indicate marks.

1. Answer the following questions: 2×10
- (a) Explain what will happen to activation energy in the enzyme catalyzed reactions.
 - (b) Which hormones are responsible for the growth and development of plants?
 - (c) A DNA solution of 10 ml has an A_{260} value of 1.0. What is the DNA concentration in microgram/ml and how much amount of DNA present in that solution?
 - (d) What are the components of a nucleotide?
 - (e) What are the differences between (phi) and (psi) of amino acids in a polypeptide chain?
 - (f) Differentiate between endocrine and paracrine hormones.
 - (g) What is NAD? Write its application in biological reactions.
 - (h) What is disulfide bond? How you can locate a disulfide bond during proteome studies?
 - (i) Why citric acid cycle is known as amphibolic pathway?
 - (j) Why oxidation of acetate is so complicated in TCA cycle of Plants?
2. (a) Write down the structure and biochemical function of natural and synthetic auxins with suitable examples. 5
- (b) What is gluconeogenesis? Explain the process with proper diagram. 5
3. Write short notes on any *two* : 5×2
- (a) Essential Amino acids
 - (b) Michaelis- Menton's Constant



4. Define Oxidative phosphorylation. Briefly explain the carriers of Electron transport system involved in the oxidative phosphorylation of NADH_2 with a note on its ATP generation. 2+8
5. (a) Justify "Enzymes are biocatalysts". Explain "Enzyme kinetics as an approach to understand the mechanisms of enzyme action". 6
(b) Explain how a protein is folded? 4
6. Briefly explain the stoichiometry of the Glyco-lysis with the energy balance sheet. 10
7. Explain the various level of organization of protein structure with emphasis on various bonds and chemical interaction on protein function. 10
8. Write short notes of the followings: 2×5
 - (a) Electron transport system
 - (b) Primary and secondary structure of protien