

Third Semester (Special/Back) 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 [2X10]
- Write one letter symbols for following amino acids i) Tryptophan ii) Phenylalanine iii) Asparagine iv) Glutamic acid
 - What is NAD? Write its application in biological reactions.
 - What is α oxidation of fatty acids?
 - Differentiate between endocrine and paracrine hormones.
 - What will be the standard free energy change of a reaction with equilibrium constant 2 at temperature 27°C ? Gas constant = 8.3 J/K.Mol
 - Give any two examples of protein with α helix in its structure.
 - What are the components of a nucleotide?
 - What is protein turnover number?
 - Define anomer.
 - What is prosthetic group?
- 2) a) What do you mean by genetic code? Explain the characteristics of genetic code. [2+4]
- b) What do you mean by energy coupling in biological reactions? Explain with proper biological example. [4]
- 3) a) Explain Kreb's cycle with proper diagram. [6]
- b) What is glycolysis? Explain the importance in biological systems. [4]
- 4) a) What are fat soluble vitamins? Explain function of each of these vitamins. [6]
- b) Explain different levels of protein structure with proper examples. [4]
- 5) Derive Michaelis-Menten's equation for enzyme substrate catalysis. Explain the constants and their importance. [6+4]
- 6) a) Differentiate between de novo and salvage pathway of nucleotide synthesis. [5]
- b) Explain β oxidation of fatty acids with proper diagram. [5]
- 7) Write notes on [5X2]
- ETS
 - Ribosome
- 8) Write notes on [2.5X4]
- Z DNA
 - Lineweaver-Burk plot.
 - Prosthetic group
 - Pyranose structures of glucose