

M.Sc. (Chemistry)

Semester - III

Core course – 08

Full marks – 70

Set- III

Answer all the questions.

1. Fill in the blanks:

- a) _____ helps in the utilization of Fe for Hb synthesis in the body.
[Cu , Zn , Ca]
- b) _____ is the major intracellular cation.
[Na , K , Zn]
- c) Ferredoxin consists of _____ protein.
[Fe-Mo, Fe – Rh, Fe –S]
- d) Recombinant technology is also known as _____.
[Genetic engineering, Cloning, all of the these]
- e) Hemocyanin and hemerythrin have dimeric _____ centre.
[Cu & Fe, Cu & Mn, Cu & Co]
- f) Enzymes are highly _____.
[stereospecific, stereoselective, all of these]
- g) Coenzyme _____ involved in the transfer of atom, groups other than hydrogen.
[Lipoic acid, FMN, none of these]
- h) The optimum pH for most of the enzyme is in the pH range of _____.
[10^{4-7} , 10^{7-8} , 10^{4-10}]
- i) The slope of the Lineweaver-Burk plot is _____.
[$1/K_m$, K_m/V_m , $-1/K_m$]

- j) _____ technique is used for immobilization of enzyme.
[cross-binding method, adsorption method, all of these]

Group-A

15X4= 60

Answer any four questions selecting at least one question from each group :

2. Discuss the structure and function of cytochrome c in electron transfer process in brief.
3. Discuss the function of myoglobin. How do myoglobin and haemoglobin work together ?
4. Explain how does Na^+/K^+ pump maintain cell volume and cell potential.

Group – B

5. Write the differences between enzyme catalysis and chemical catalysis.
6. Discuss the structure and biological function of lipoic acid.
7. Discuss acid-base catalysis and covalent catalysis reaction with mechanism.
8. Discuss addition and elimination reaction and also discuss the transfer of sulphate in enzyme catalysed reaction.

Answer of questions no 01 :

- a) Cu
- b) K
- c) Fe – S
- d) All of these
- e) Mg
- f) Stereospecific
- g) None of these.

- h) 10^{7-8}

- i) km/vm

- j) All of these.
