

**M.Sc.( Chemistry )**

**Semester - III**

**Core course – 08**

**Full marks – 70**

**Set- II**

**Answer all the questions**

1. True and False

- i) The elements like Na, K, Ca, P, Zn etc are necessary for metabolic process taking place in human body.
- ii)  $\text{Fe}^{+3}$  ion are present in Vitamin B 12.
- iii) The function of kidney is powered by  $\text{Na}^{+}/\text{K}^{+}$  pump.
- iv) In ferredoxin  $\text{Fe}^{+3}$  changes to  $\text{Fe}^{+2}$  by accepting electrons.
- v) Cytochromes consists of heme group with different proteins.
- vi) Enzymes are a type of proteins with one or more peptide chain.
- vii) There are three types of catalysis.
- viii) The slope of the Lineweaver-Burk plot is equal to  $1/K_m$ .
- ix) Uncompetitive inhibitor binds with already formed ES complex.
- x) Co-enzyme A helps in transferring the acyl group from one compound to other compound.

**Group – A**

**15X4 = 60**

- 2. Why the  $\text{Na}^{+}/\text{K}^{+}$  pump is so important to the human body?
- 3. What is the mechanism of nitrogen fixation.
- 4. Discuss the structure and function of haemoglobin .

**Group – B**

- 5. Deduce the expression for Michael's and Menten equation for enzyme catalysis .
- 6. What is inhibition? Discuss reversible and irreversible inhibition .
- 7. Discuss the structure and biological function of thiamine pyrophosphate.
- 8. a) Explain transition state theory for enzymatic catalytic reaction.

b) Discuss strain and distortion in molecules in enzyme catalysis reaction.

\*\*\*\*\*

**Answer of question no. 01 :**

- i) True
- ii) False
- iii) True
- iv) False
- v) True
- vi) True
- vii) False
- viii) False
- ix) True
- x) True

\*\*\*\*\*