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M.Sc.(Chemistry)

Semester - III

Core course – 08 **Full marks – 70**

Set- I

Answer all the questions

1. Write one word answer : 1X10= 10
   - i) Name the element which in acidic or alkaline medium contol the nerves, blood clotting and muscles action.
   - ii) Name the family of enzymes known to catalyze the reduction of N2 to NH3 .
   - iii) Name the compound which acts as oxygen carrier in blood.
   - iv) Name the metal which involve in the acid-base balance of the metabolic process.
   - v) Name the bacteria present in nodes of the roots of plant to absorb the nitrogen from atmosphere.
   - vi) Name the metal present in vitaman B12.
   - vii) Name the group of non-protein part of the of conjugate protein of the enzymes.
   - viii) Name one coenzyme involved in hydrogen transfer.
   - ix) Name any one method of purification of enzyme.
   - x) Name the type of reversible inhibitors.

Group – A **15X4 = 60**

Answer any four questions selecting at least one from each group.

2. Write down the role of following metal in biological system:

   Calcium ii) Zinc iii) Magnesium.

3. Write down the type of DNA polymerase. Discuss the function of DNA Polymerase- I.

4. In brief, discuss the biological fixation of nitrogenby enzyme.

Group – B

5. a) Write down the features of biological and chemical catalysis.

b) Explain Fischer's lock and key and Koshland's induced fit hypothesis.

6. Discuss the structure and biological function of Vitamin-12.

7. Explain isomerization and rearrangement reactions catalysed by enzymes.

8. What do you mean by the term recombinant DNA- technology. Discuss Enzyme and recombinant DNA technology.

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Answer of question no. 01

i) Calcium.
ii) Nitrogenase
iii) Haemoglobin.
iv) Potassium.
v) Azetobacter or rhizobia.
vi) Co^{+3}
vii) Prosthetic group.
viii) NAD orFMN or Liopic acid.
ix) Column chromatography
x) Competitive, uncompetitive and noncompetitive.

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