

5. (a) Define the following terms and give **one** example each : 5
- (i) Anti-Microbial agent
 - (ii) Anti-Therapeutic agent
 - (iii) Acid neutralizing capacity
 - (iv) Anti-inflammatory agent
 - (v) Anti-Rheumatoid agent
- (b) What are ant-acids ? Give **one** example and mention any **two** important constituents. Briefly explain the mode of action in the biological system. 5
- (c) Name any **two** alternatives to cis-platin. Enlist any **three** conditions for a complex to show anticancer activity. 5
6. (a) Name the metal which plays a vital role in haemoglobin. Draw the oxygen binding curve for haemoglobin and myoglobin in blood. 5
- (b) What is the function of Manganese (Mn) in the human body ? Write the effects of its deficiency on the human body. 5
- (c) What do you understand by essential and trace elements ? Discuss any **two** trace elements with respect to human health. 5

[This question paper contains 4 printed pages]

Your Roll No. :**Sl. No. of Q. Paper** : **5319**

Unique Paper Code : 2174001210

Name of the Course : **All Undergraduate****Courses except with
Chemistry Discipline**Name of the Paper : GE : Role of Metals in
Medicines

Semester : II/IV/VI

Time : 2 Hours **Maximum Marks : 60****Instructions for Candidates :**

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
 - (b) Attempt any **Four** questions in **all**.
 - (c) Each questions carries **15** marks.
1. (a) Name the metal which play an important role in the functioning of following enzymes : 5
- (i) Carbonic anhydrase
 - (ii) Glucose tolerance factor
 - (iii) Superoxide dismutase
 - (iv) Nitrogenase
 - (v) Pyruvate Kinase

- (b) Discuss in detail the role of ^{123}I as a radiopharmaceutical. 5
- (c) Enlist any **five** parameters to distinguish water soluble vitamins from fat soluble vitamins. 5
2. (a) Answer the following multiple choice questions : 5
- (i) Which of the following is the **correct** match ?
- (A) Vitamin A – Calciferol
 - (B) Vitamin E – Tocopherol
 - (C) Vitamin D – Thiamine
 - (D) Vitamin K – Ascorbic acid
- (ii) Calcium is responsible for :
- (A) Muscle contraction
 - (B) Blood coagulation
 - (C) Nerve conduction
 - (D) All of the above
- (iii) What is the role of Zinc in the human body ?
- (A) It is a component of chlorophyll
 - (B) It is important for immune function
 - (C) It helps regulate blood pressure
 - (D) It strengthens bones and teeth
- (iv) Which element is essential for energy production within the cells ?
- (A) Sodium
 - (B) Potassium
 - (C) Phosphorus
 - (D) Calcium

- (v) Name of the most common type of cancer that kills men in the world.
- (A) Lung cancer
 - (B) Prostate cancer
 - (C) Liver cancer
 - (D) Colon and rectum cancer
- (b) What is sodium-potassium pump ? Explain its mechanism in detail. 5
- (c) Discuss the role of Vanadium in the treatment of diabetes. 5
3. (a) Elaborate the significance and function of BaSO_4 as a contrasting agent in X-Ray Imaging. 5
- (b) What is the drug Auranofin used for ? Explain its mechanism of action in the biological system. 5
- (c) What is the oxidation state of iron in haemoglobin ? Discuss in detail, the importance of globin in haemoglobin. 5
4. (a) Write short notes on any **two** of the following : 5
- (i) Gaviscon
 - (ii) De-nol
 - (iii) Calamine lotion
- (b) Draw the structure of Melarsoprol. What is the purpose of this medicine ? Explain. 5
- (c) Discuss the role of calcium and magnesium metals in biological system. 5