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(iii) Molybdenum

(iv) Copper

(v) Cobalt

(5,5,5)

(100)

[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5052

J

Unique Paper Code : 2174001210

Name of the Paper : GE : Role of Metals in
Medicines

Name of the Course : **All Undergraduate Courses
Except with Chemistry
Discipline**

Semester : II / IV / VI

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **FOUR** questions in all.
3. Each question carries **15** marks.

P.T.O.

1. (a) Define ANC. Name any one salt of sodium which is used in the treatment of heart burn and digestive disorders and explain its mechanism of action.

(b) Name an over-the-counter medicine used to soothe itchy skin. Discuss its composition.

(c) Name the enzyme and write the chemical equation involved in the functioning of sodium potassium pump. Explain its mechanism in detail. (5,5,5)
2. (a) Answer the following multiple-choice question-
 - (i) Which element is crucial for the proper functioning of the thyroid gland?

(A) Iron

(B) Potassium

(C) Zinc

(D) Iodine

- (c) What are diagnostic and therapeutic agents? Discuss the role of vanadium in the context of diabetes. (5,5,5)
6. (a) Which parasite is responsible for causing African sleeping sickness? Name any one drug used in the treatment of African sleeping sickness. Explain its mode of action in the biological system.

(b) What is the importance of zinc oxide and ferric oxide in the treatment of skin diseases? Enlist the differences between Lacto calamine and calamine lotion.

(c) Mention the disease caused by deficiency of following elements :
 - (i) Iron
 - (ii) Zinc

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(b) What is the role of haemoglobin and myoglobin in the biological system? Enlist few differences between the two.

(c) Name an alkali metal-based medicine used for mental health treatment. Discuss its mode of action in the human body. (5,5,5)

5. (a) Give full form of the following :

(i) GERD

(ii) ATP

(iii) MR1

(iv) SSRP

(v) BAL

(b) Discuss in detail the function of sodium selenite in the biological system and discuss adverse effects associated with it.

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(ii) Name the cancer that starts in the skin or the tissues that line other organs

(A) Leukemia

(B) Pancreas

(C) Carcinoma

(D) None of the above

(iii) Which vitamin is also known as "Cobalamin"?

(A) Vitamin B12

(B) Vitamin B1

(C) Vitamin A

(D) Vitamin D

(iv) Which mineral element is found in chlorophyll?

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(A) Manganese

(B) Magnesium

(C) Iron

(D) Calcium

(v) The drug Auranofin is mainly used for

(A) Treatment of Parkinson disease

(B) For reversing the toxicity due to cholinergic drugs

(C) Reducing pain due to Arthritis

(D) All of the above

(b) Discuss the structural features of vitamin B12.

Give the names of different forms of cobalamin.

(c) Discuss the mechanism of action of Cis-platin as an antitumor drug. (5,5,5)

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3. (a) How are metals utilized in the medicines? Describe the purpose of medication given below and identify the metal involved in the following:

(i) Pepto-bismol

(ii) Gaviscon

(iii) De-nol

(b) Justify the statement "Bioinorganic chemistry is a bridge between Inorganic chemistry and biochemistry".

(c) What is the role of chromium chloride in metabolic processes when it is consumed as a multivitamin? Enlist its side effects. (5,5,5)

4. (a) Write the names of water soluble vitamins. What are the sources and functions of vitamin C?

P.T.O.