

**SHIVAJI COLLEGE, UNIVERSITY OF DELHI**

**DEPARTMENT OF CHEMISTRY**

**INTERNAL TEST-I (Academic Year 2023-24)**

**Name of the Course:** B.Sc. (P) Life Sciences

**Semester:** VI (B)

**Name of the Paper:** Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy (Unique Paper Code: 42177926)

**Faculty Name:** Dr. Sunil Yadav

**Duration:** 1 Hour **Maximum Marks:** 05

**Date of Test:** 18.04.2024

Attempt any three questions. Question No. 1 is compulsory.

1. Name the metal involved in following metalloproteins: (1)  
(i) Transferrin (ii) Chlorophyll (iii) Myoglobin (iv) Vitamin B12
2. With reference to biological system define essential metal ions, trace metal and non-essential metal ions with an example of each. (2)
3. Explain the structure of hemoglobin and its function in biological system. (2)
4. How is iron transferred from storage sites to the sites for incorporation in hemoglobin? (2)
5. How is the unequal concentration of  $\text{Na}^+$  and  $\text{K}^+$  ions in extra cellular and intracellular fluid controlled in the human body? Give a diagrammatic representation of the process and explain the mechanism involved in it. What is the source of energy in it? (2)

