



**Avinashilingam Institute for Home Science and Higher Education for Women**  
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)  
Re-accredited with A++ Grade by NAAC. Recognised by UGC Under Section 12B  
Coimbatore - 641 043, Tamil Nadu, India

**Continuous Internal Assessment – II (Oct -2025)**  
**V Semester**

**Class : III**  
**Branch : Chemistry**

**Time : 2 Hours**  
**Max. Marks : 60**

**23BCHC10 - Inorganic Chemistry – III**

**Course Outcomes**

1. Ability to recognize the types of isomers in coordination compounds
2. Ability to apply theories of coordination chemistry to the structure of complexes
3. Chemistry of transition elements and molecular symmetry
4. Ability to understand the importance of lanthanides and actinides
5. Understanding the significance of bioinorganic systems

**Part A**

**6 x 1 = 6**

**Choose the Correct Answer**

1. What is the point group of water?  
a. D<sub>2v</sub>      b. C<sub>2h</sub>      c. C<sub>2v</sub>      d. D<sub>2h</sub> CO3 K2
2. Potassium ferricyanide reacts with ferrous iron in acidic solution to produce the insoluble blue pigment, commonly referred to as  
a. American blue      b. Navy blue      c. Indian blue      d. Prussian blue CO3 K2
3. Identify the one which is a weakly radioactive metallic chemical element with the atomic number 90  
a. Thorium      b. Uranium      c. Indium      d. Plutonium CO4 K3
4. Oxygen binding capacity of hemoglobin on lowering of pH  
a. Decreases      b. Increases      c. Remain unchanged      d. None of the above CO5 K2
5. The compound nonactin binds to which metal ion?  
a. K<sup>+</sup>      b. Na<sup>+</sup>      c. Mg<sup>2+</sup>      d. Ca<sup>2+</sup> CO5 K2
6. Which is not a micronutrient?  
a. Boron      b. Zinc      c. Magnesium      d. Molybdenum CO5 K2

**Part B**

**3 x 6 = 18**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

7. a. Give a brief description about the properties and uses of potassium ferri cyanide. CO3 K1  
Or
7. b. Explain Symmetry elements CO3 K2
8. a. Give a brief description about the properties and uses of titanium CO3 K2  
Or
8. b. Compare the properties of lanthanides and actinides CO4 K2
9. a. Discuss the classification of elements according to their action in biological system CO5 K2  
Or
9. b. Explain the toxic nature of metal ions CO5 K3

**Part C**

**3 x 12 = 36**

**Answer ALL questions**

**Each answer should not exceed 800 words or four pages**

10. a. Explain the important chemistry aspects of titanium dioxide and titanium tetrachloride CO4 K2
- Or
10. b. Discuss the Symmetry operation of water molecule CO3 K3
11. a. Write the synthesis, properties and its uses of vanadium penta oxide and ammonium meta vanadate CO4 K2
- Or
11. b. Discuss extraction and chemistry of thorium and uranium CO4 K3
12. a. Explain the distribution of metals using sodium / potassium – pump CO5 K2
- Or
12. b. Describe the role of Iron in biological system CO5 K3

Number of Copies: 25

Staff In-charge: Dr. M. Amutha Selvi