

Roll No.

(011/17-I)

5192

B. Sc. EXAMINATION

(Third Semester)

CHEMISTRY

CH-201

Inorganic Chemistry

Time : Three Hours

Maximum Marks : 27

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Unit. Q. No. 1 is compulsory.

Compulsory Question

1. (a) Explain, why all elements of *d*-block are metals. 1
- (b) Why do Zr and Hf show identical chemistry ? 1
- (c) Give the structure of $\text{Cr}_2\text{O}_7^{-2}$. 1

(2-06/3) B-5192

P.T.O.

- (d) What are platinum metals ? Why are these called noble metals ? 1
- (e) Write the IUPAC name of $\text{VO}(\text{acac})_2$. 1
- (f) 2-methyl pyridine is a weaker base than pyridine. Why ? 1
- (g) What are non-aqueous solvents ? 1

Unit I

2. What are *d*-block elements ? Brief their general characteristic properties. 5
3. (a) Why transition elements show variable oxidation states ? Explain. 3
- (b) Draw the structure of $\text{Ni}(\text{CO})_4$. 2
4. (a) Potassium dichromate has orange colour in acidic medium while yellow in alkaline medium ? Explain. 3
- (b) Calculate in Bohr Magneton the magnetic moments for the Cr^{2+} and V^{4+} . 2

Unit II

5. (a) What is EDTA ? Draw its structure showing its donor sites. 3
- (b) What are the limitations of valence bond theory ? 2
6. (a) Give experimental verification of Werner's coordination theory. 3
- (b) Explain that AgCl is soluble in liquid NH_3 but insoluble in H_2O . 2
7. Explain the following :
- (a) K_2SO_3 is soluble in liquid SO_2 2.5
- (b) Solvolytic reaction in liquid NH_3 . 2.5