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**Max Time : 1 hr** **Class = 12th Chemistry Test**  **Max Marks : 30**

**D & F BLOCK + Isomerism**

1. Which of the following ions will have a magnetic moment value of 1.73 B.M? [ 1 ]

Sc3+ , Ti3+ , Ti2+ , Cu2+, Zn2+

1. What is the oxidation state of chromium in chromate ion and dichromate ion? [ 1 ]
2. Why Mn2+ is more stable than Fe2+ towards +3 oxidation state? [ 1 ]
3. Which of the following cations are coloured in aqueous solution and why? [ 1 ]

Sc3+ , Ti4+ , V3+ , Mn2+

1. Why orange colour of ion changes to yellow when treated with an alkali? [ 1 ]
2. Why actinoids exhibit a grater range of oxidation states than lanthanoids? [ 2 ]
3. Write the ionic equation for reaction of KI with acidified KMnO4. [ 2 ]
4. Why the transition elements shows high melting points? [ 2 ]
5. Why first ionization enthalpy of Cr is lower than that of Zn? [ 2 ]
6. Complete the following equation: + 8 H+ + 5 e –  [ 2 ]
7. Out of Cr 3+ and Mn2+, which is a strong oxidizing agent and why? [ 2 ]
8. What happens when KMnO4 is treated with oxalic acid in acidic medium? [ 2 ]
9. Answer the following questions : [ 3 ]
10. Why transition metals form alloys?
11. Why Eu2+ is a strong reducing agent?
12. Explain why transition elements acts as catalyst?
13. (a) Draw the structure of dichromate ion. [ 3 ]

(b) How will you obtain Na2Cr2O7 from Na2CrO4?

1. Draw the structures of optical isomers of : [ 3 ]

(a) [Cr (C2O4)3] 3 –  (b) [PtCl2 (en)2]2+ (c) [Co (NH3)2 Cl2 (en)]+

1. Draw the isomers (geometrical and optical) of : [ 2 ]

(a) [CoCl2 (en)2]2+ (b) [Co (NH3) Cl (en)2]2+