Quality Checkers Only way to fulfill your dreams	12th Science : Chemistry Transition and Inner transition Elements,	**DATE:** **TIME: 1 hour** **MARKS: 25**
	SEAT NO:	

Note:-

1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

Section A

Q.1 Select and write the correct answer. **(4)**

1. Which of the following ions have same number of unpaired electrons?

   A) Ni^{2+} B) Ti^{3+}

   C) V^{4+} D) Fe^{3+}

2. The metal ion which is not coloured?

   A) Fe^{3+} B) V^{2+}

   C) Zn^{2+} D) Ti^{3+}

3. To which period of periodic table lanthanoid belongs?

   A) 3^{rd} period B) 4^{th} period

   C) 5^{th} period D) 6^{th}period

4. Which of the following element belongs to actnoid series?

   A) Cerium B) Lutetium

   C) Thorium D) Lanthanum

Q.2 Answer the following. **(3)**

1. Define ionisation enthalpy.
2. Balance the following equations.
   1. $KMnO_4 + H_2C_2O_4 \rightarrow MnSO_4 + K_2SO_4 + H_2O + O_2$
   2. $K_2Cr_2O_7 + KI + H_2SO_4 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + 7H_2O + 3I_2$
3. What are f - block elements?

Section B
Attempt any Four

Q.3 What are minerals and ores? **(2)**

Q.4 Ionic radii of lanthanoids decreases from La to Lu. Give reason. **(2)**

Q.5 Calculate the spin only magnetic moment of La^{3+}. Compare the value with that given in table 8.13. Is it same or different? **(2)**

Q.6 Give the general formula of hydroxides of lanthanoids. Why basicity of hydroxides decreases from $La(OH)_3$ to $Lu(OH)_3$? **(2)**

Q.7 Why Scandium shows only two oxidation states while manganese shows six different oxidation states? **(2)**

Q.8 Calculate the spin only magnetic moment of divalent cation of a transition metal with atomic number 27. **(2)**

Section C
Attempt any Two

Q.9 Give the electronic configuration of various ions in 3d elements. **(3)**

Q.10 Explain the effective magnetic moments of lanthanoids in +3 oxidation state. **(3)**

Q.11 Explain the oxidizing properties of $KMnO_4$ in neutral or weakly alkaline medium. **(3)**

Section D
Attempt any One

Q.12 Write the important properties of lanthanoids. **(4)**

Q.13 Explain the electronic configuration of lanthanoids. **(4)**