D&F-Block Elements

1. Which one of the following sets correctly represents the increase in the paramagnetic property of the ions ? [E2009]

1) $Cu^{2+} > V^{2+} > Cr^{2+} > Mn^{2+}$
2) $Cu^{2+} < Cr^{2+} < V^{2+} < Mn^{2+}$
3) $Cu^{2+} < V^{2+} < Cr^{2+} < Mn^{2+}$
4) $V^{2+} < Cu^{2+} < Cr^{2+} < Mn^{2+}$

2. Which of the following pair of transition metal ions, have the same calculated values of magnetic moment? (E 2007)

1) Ti^{2+} and V^{2+} 2) Fe^{2+} and Cu^{2+}
3) Cr^{2+} and Fe^{2+} 4) Co^{2+} and Ti^{2+}

3. Which of the following pairs of ions are colorless? [2004-E]

1) Ti^{3+}, Cu^{2+} 2) Sc^{3+}, Zn^{2+}
3) Co^{2+}, Fe^{3+} 4) Ni^{2+}, V^{3+}

4. Which one of the following ions exhibit highest magnetic moment? [2001-E]

1) Cu^{2+} 2) Ti^{3+} 3) Ni^{2+} 4) Mn^{2+}

5. Which one of the following ion exhibits colour in aqueous solution? [2000-E]

1) Sc^{3+} 2) Ni^{2+} 3) Ti^{4+} 4) Zn^{+2}

6. The number of d electrons retained in Fe^{2+} (atomic number 26) ion is (2003-E)

1) 3 2) 4 3) 5 4) 6

7. What would happen when a solution of potassium chromate is treated with an excess of dilute nitric acid? (2003-E)

1) CrO_4^{2-} Is oxidized to +7 state of Cr
2) Cr^{3+} and are formed
3) $Cr_2O_7^{2-}$ and are formed
4) CrO_4^{2-} Is reduced to +3 state of Cr

8. The IUPAC name of the coordination compound is $K_3\left[Fe(CN)_6\right]$ (2005-E)

1) Potassium hexacyanoferrate (II)
2) Potassium hexacyanoferrate (III)
3) Potassium hexacyanoiron (II)
4) Tripotassium hexacyanoiron(II)

9. The IUPAC name for the complex is $\left[Co\left(NO_2\right)\left(NH_3\right)_5\right]Cl_2$ (2006-E)

1) pentaamminenitrito-N-cobalt (III) chloride
2) nitrito-N-pentaamminecobalt(III) chloride
3) pentaamminenitrito-N-cobalt (II) chloride
4) pentaamminenitrito-N-cobalt (I) chloride

10. The spin only magnetic moment of Fe^{3+} ion (in BM) is approximately [KCET-2011]

1) 4 2) 7 3) 5 4) 6

11. The acidic, basic or amphoteric nature of Mn_2O_7, V_2O_5 and CrO are respectively [Kerala CEE-2011]

1) Acidic, acidic and basic
2) Basic, amphoteric and acidic
3) Acidic, basic and amphoteric
4) Acidic, basic and basic

12. Ammonia will not form complex with [Kerala CEE-2011]

1) Ag^{2+} 2) Pb^{2+} 3) Cu^{2+} 4) Cd^{2+} 5) Fe^{2+}

KEY

1) 3	2) 3	3) 2	4) 4	5) 2
6) 4	7) 3	8) 2	9) 1	10) 4
11) 3	12) 2			