

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 $K_3[Fe(CN)_6]$ (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 $[Co(NO_2)(NH_3)_5]Cl_2$ (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

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