

Most Repeated Questions in JEE Main Chemistry from Electronic configuration & Magnetic Moment

Q: Lanthanoid ions with $4f^7$ configuration are:

(A) Eu^{2+} (B) Gd^{3+} (C) Eu^{3+} (D) Tb^{3+} (E) Sm^{2+}

Choose the correct answer from the options given below

- (a) (B) and (E) only
- (b) (B) and (C) only
- (c) (A) and (D) only
- (d) (A) and (B)

Q: Niobium (Nb) and ruthenium (Ru) have “x” and “y” number of electrons in their respective 4d orbitals. The value of $x + y$ is _____.

Q: . Among CrO , Cr_2O_3 and CrO_3 , the sum of spin-only magnetic moment values of basic and amphoteric oxides is 10^{-2}BM (nearest integer). (Given atomic number of Cr is 24)

Q: The electronic configuration of Einsteinium is: (Given atomic number of Einsteinium = 99)

- (A) $[\text{Rn}] 5f^{13} 6d^0 7s^2$
- (B) $[\text{Rn}] 5f^{12} 6d^0 7s^2$
- (C) $[\text{Rn}] 5f^{11} 6d^0 7s^2$
- (D) $[\text{Rn}] 5f^{10} 6d^0 7s^2$

Q: Among VO_2^+ , MnO_4^- , and $\text{Cr}_2\text{O}_7^{2-}$, the spin-only magnetic moment value of the species with least oxidising ability is BM (Nearest integer). (Given atomic number V = 23 Mn = 25 Cr = 24)

Q: A transition metal 'M' among Sc, Ti, V, Cr, Mn and Fe has the highest second ionisation enthalpy. The spin-only magnetic moment value of M^+ ion is _____ BM (Near integer) (Given atomic number Sc: 21, Ti: 22, V: 23, Cr: 24, Mn: 25, Fe: 26)

Q: The magnetic moment of a transition metal compound has been calculated to be 3.87 B.M. The metal ion is

- (A) Cr^{2+} (B) Mn^{2+} (C) V^{2+} (D) Ti^{2+}

Q: T10 The electronic configuration of Cu(II) is $3d^9$ whereas that of Cu(I) is $3d^{10}$.

Which of the following is correct?

- (A) Cu(II) is more stable
- (B) Cu (II) is less stable
- (C) Cu(I) and Cu(II) are equally stable
- (D) Stability of Cu(I) and Cu(II) depends on nature of copper salts

Q: How many of the following metal ions have similar value of spin only magnetic moment in gaseous state? _____

(Given: Atomic number: V, 23 ; Cr, 24; Fe, 26; Ni, 28)

V^{3+} , Cr^{3+} , Fe^{2+} , Ni^{3+}