

Questions with Answer Keys

MathonGo

Q1: 24 Feb (Shift 2) - Single Correct

The calculated magnetic moments (spin only value) for species $[\text{FeCl}_4]^{2-}$, $[\text{Co}(\text{C}_2\text{O}_4)_3]^{3-}$ and MnO_4^{2-} respectively are :

- (1) 5.92, 4.90 and 0 BM
- (2) 5.82, 0 and 0 BM
- (3) 4.90, 0 and 1.73 BM
- (4) 4.90, 0 and 2.83 BM

Q2: 25 Feb (Shift 1) - Single Correct

The hybridization and magnetic nature of $[\text{Mn}(\text{CN})_6]^{4-}$ and $[\text{Fe}(\text{CN})_6]^{3-}$, respectively are:

- (1) d^2sp^3 and paramagnetic
- (2) $sp^3 d^2$ and paramagnetic
- (3) d^2sp^3 and diamagnetic
- (4) $sp^3 d^2$ and diamagnetic

Q3: 25 Feb (Shift 2) - Single Correct

Given below are two statements :

Statement I : The identification of Ni^{2+} is carried out by dimethyl glyoxime in the presence of NH_4OH

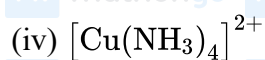
Statement II : The dimethyl glyoxime is a bidentate neutral ligand.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both statement I and statement II are true
- (2) Both statement I and statement II are false
- (3) Statement I is false but statement II is true
- (4) Statement I is true but statement II is false

Q4: 25 Feb (Shift 2) - Single Correct

If which of the following order the given complex ions are arranged correctly with respect to their decreasing spin only magnetic moment?



(1) (ii) > (i) > (iii) > (iv)

(2) (iii) > (iv) > (ii) > (i)

(3) (ii) > (iii) > (i) > (iv)

(4) (i) > (iii) > (iv) > (ii)

Q5: 25 Feb (Shift 2) - Numerical

The spin only magnetic moment of a divalent ion in aqueous solution (atomic number 29) is _____ BM.

Q6: 26 Feb (Shift 1) - Numerical

Number of bridging CO ligands in $[\text{Mn}_2(\text{CO})_{10}]$ is _____

Q7: 26 Feb (Shift 2) - Numerical

The number of stereoisomers possible for $[\text{Co}(\text{Ox})_2(\text{Br})(\text{NH}_3)]^{2-}$ is _____ [Ox = oxalate]

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Answer Key

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Q1 (3)

Q2 (1)

Q3 (4)

Q4 (4)

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Q5 (2)

Q6 (0)

Q7 (3)

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