

Chapter 9

Coordination Compounds

(Assertion and Reason Questions)

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
- (c) If the Assertion is correct but Reason is incorrect.
- (d) If both the Assertion and Reason are incorrect.

Q.1. Assertion : NF_3 is a weaker ligand than $\text{N}(\text{CH}_3)_3$.
Reason : NF_3 ionizes to give F^- ions in aqueous solution.

Q.2. Assertion : $[\text{Fe}(\text{CN})_6]^{3-}$ is weakly paramagnetic while $[\text{Fe}(\text{CN})_6]^{4-}$ is diamagnetic.
Reason : $[\text{Fe}(\text{CN})_6]^{3-}$ has +3 oxidation state while $[\text{Fe}(\text{CN})_6]^{4-}$ has +2 oxidation state.

Q.3. Assertion : $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ is coloured while $[\text{Sc}(\text{H}_2\text{O})_6]^{3+}$ is colourless.
Reason : d-d transition is not possible in $[\text{Sc}(\text{H}_2\text{O})_6]^{3+}$.

-X-X-X-

ANSWER KEY

Q.1 : (c)

Q.2 : (b)

Q.3 : (a)