

Section I: Single-Correct MCQs (+3/−1)

- For ClO_2 (odd-electron molecule), the best description is
 - Linear, diamagnetic
 - Bent, paramagnetic
 - Bent, diamagnetic
 - Trigonal planar, paramagnetic
- The correct order of acidity in gas phase is
 - $\text{H}_2\text{O} < \text{CH}_3\text{OH} < \text{C}_6\text{H}_5\text{OH}$
 - $\text{CH}_3\text{OH} < \text{H}_2\text{O} < \text{C}_6\text{H}_5\text{OH}$
 - $\text{C}_6\text{H}_5\text{OH} < \text{CH}_3\text{OH} < \text{H}_2\text{O}$
 - $\text{CH}_3\text{OH} < \text{C}_6\text{H}_5\text{OH} < \text{H}_2\text{O}$
- The curve of $\ln k$ versus $1/T$ for a reaction is straight. The slope equals
 - E_a/R
 - $-E_a/R$
 - $-RT/E_a$
 - E_a/RT
- The pair that can show linkage isomerism is
 - $[\text{CrCl}_2(\text{H}_2\text{O})_4]\text{Cl}$
 - $[\text{Co}(\text{NH}_3)_5\text{NO}_2]\text{Cl}_2$
 - $[\text{Ni}(\text{H}_2\text{O})_6]\text{Cl}_2$
 - $[\text{Fe}(\text{CN})_6]^{4-}$
- Among the following, the strongest oxidizing agent in acidic medium is
 - MnO_4^-
 - $\text{Cr}_2\text{O}_7^{2-}$
 - NO_3^-
 - ClO_3^-
- The major product of the following is
- $\text{CH}_3-\text{CH}=\text{CH}_2 + \text{Br}_2/\text{H}_2\text{O} \rightarrow$
 - 1-bromopropane
 - 2-bromopropanol
 - 1,2-dibromopropane