JEE Main 30 January 2024 Shift 2 Answer Key

Chemistry

Q.1: Why does KMnO4 display colour?

A.1: Due to ligand to metal charge transfer

Q.2: What is the mole fraction of C when C is added to a solution of A and B?

A.2: $n_c/(n_A + n_B + n_C)$

Q.3: What reagent results in the formation of salicylaldehyde when it reacts with phenol?
A.3: $CHCI_3, NaOH$

Q.4: Based on the given carbocation, find the correct order of stability
$(CH_3)_3C^+$, $(CH_3)_2CH^+$, $CH_3CH_2^+$, CH_3^+

A.4: I > II> III> IV

Q.5: From the given options, which has a square pyramidal shape? (A. PCL_3, B. BrF_5, C. PF_5, D. $[NI(CN)_4]^{2-}$)

A.5: BrF5

Q.6: Consider the following statements:

Statement I: Since electronegativity of F > H, so dipole moment of $NF_3 > NH_3$

Statement II: The lone pair dipole in NH_3 is not in the direction of the resultant bond dipole while in the case of NF_3 the lone pair dipole is in the direction of resultant bond dipole.

A.6: Both the statements are false.

Q.7: Arrange the following based on their decreasing oxidising power BrO_4^-, IO_4^-, ClO_4^-

A.7: $BrO_4^- > ClO_4^- > IO_4^-$