

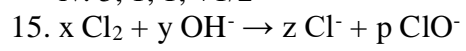
JEE Main Session 2 Chemistry Exam: Model 3

- If alkaline KMnO_4 is oxidised iodide to give a particular product (A), then determine the oxidation state of iodine in the compound (A).
- Which of the following statements is incorrect?
 - $\Delta G = 0$ for reversible reaction
 - $\Delta G < 0$ for spontaneous process
 - $\Delta G > 0$ for spontaneous process
 - $\Delta G < 0$ for non-spontaneous process
- Assume $K_{\text{net}} = (K_1 * K_2) / K_3$
When $E_{a1} = 40$ kJ/mol, $E_{a2} = 50$ kJ/mol and $E_{a3} = 60$ kJ/mol, calculate the value of $(E_a)_{\text{net}}$ in kJ/mol.
- Which of the following compounds yield a positive Fehling solution test?
- What is the effect that occurs between a lone pair and a pi bond?
 - Inductive effect
 - Electromertic effect
 - Resonance effect
 - Hyperconjugation
- Statement 1: Electronegativity of group 14 elements decreases from Si to Pb.
Statement 2: Group 14 has metals, metalloids and non-metals.
 - Both statements 1 and 2 are correct.
 - Both statements 1 and 2 are incorrect.
 - Statement 1 is correct and statement 2 is incorrect.
 - Statement 1 is incorrect and statement 2 is correct.
- Hydrolysis of protein gives which type of amino acids?
 - α - Amino acids
 - β - Amino acids
 - γ - Amino acids
 - δ - Amino acids
- How many of the following compounds have one lone pair of electrons in the central atom?
 ClF_3 , XeO_3 , BrF_5 , XeF_4 , O_3 , NH_3
- How many of the following species have bond order 1 and are paramagnetic as well?
 He_2^{2+} , O_2^{2-} , Ne_2^{2+} , F_2 , B_2 , H_2 , O_2^{2+}
- Match the following:
Column I: i. Fluorspar, ii. Cryolite, iii. Bauxite, iv. Dolomite
Column II: i. $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$, ii. CaF_2 , iii. $\text{MgCO}_3 \cdot \text{CaCO}_3$, iv. $\text{Na}_3[\text{AlF}_6]$
- Match the following:
Column I: i. Vitamin B12, ii. Wilkinson's Catalyst, iii. Ziegler-Natta Catalyst, iv. Haemoglobin
Column II: i. Ti, ii. Co, iii. Fe, iv. Rh
- The presence of which element(s) is confirmed by the appearance of blood red color with FeCl_3 in Lassaigne's Test?
- Statement 1: Ionization energy decreases along a period.
Statement 2: In a period, Z dominates over the screening effect.
 - Both statements 1 and 2 are correct.
 - Both statements 1 and 2 are incorrect.
 - Statement 1 is correct and statement 2 is incorrect.
 - Statement 1 is incorrect and statement 2 is correct.
- For Rb (37), which of the following set of quantum numbers is correct for the valence electron?
 - 5, 0, 0, +1/2

ii. 5, 0, 1, -1/2

iii. 5, 0, 1, +1/2

iv. 5, 1, 1, +1/2



Balance the equation and find the values of x, y, z, and p.