

# AIPMT Sample Paper 2013

## Chemistry

**Q. 1.** With which of the following configuration an atom has the lowest ionization enthalpy?

- a.  $1s^2 2s^2 2p^6$
- b.  $1s^2 2s^2 2p^5$
- c.  $1s^2 2s^2 2p^3$
- d.  $1s^2 2s^2 2p^5 3s^1$

**Sol.**  $1s^2 2s^2 2p^5 3s^1$  represents the excited state of a Neon atom. The energy needed to knock off an electron from the excited state of neon must be least. Correct choice is: (4)

**Q. 2.** An element, X has the following isotopic composition;  $^{200}\text{X}:90\%$  ;  $^{199}\text{X}:8.0\%$  ;  $^{202}\text{X}:2.0\%$   
The weighted average atomic mass of the naturally occurring element X is closest to :

- a. 199 amu
- b. 200 amu
- c. 201 amu
- d. 202 amu

**Sol.** The weighted average atomic mass of element (X) =  $0.9(200) + 0.08(199) + 0.02(202) = 180 + 15.92 + 4.04 = 199.96 \approx 200$  Correct choice is: (2)

**Q. 3.** Concentrated aqueous sulphuric acid is 98%  $\text{H}_2\text{SO}_4$  by mass and has a density of  $1.80 \text{ g mL}^{-1}$ . Volume of acid required to make one litre of  $0.1 \text{ M H}_2\text{SO}_4$  is,

- a. 5.55 mL
- b. 11.10 mL
- c. 16.65 mL
- d. 22.20 mL

**Sol.** Density =  $1.80 \text{ g/ml}$

$\Rightarrow 1 \text{ litre has } 1800 \text{ g H}_2\text{SO}_4 \text{ (impure)}$

$\Rightarrow 1 \text{ litre has } 0.98(1800) \text{ g H}_2\text{SO}_4 \text{ (pure)}$

$\Rightarrow 1 \text{ litre has } \frac{1764}{98} \text{ moles H}_2\text{SO}_4 = 18 \text{ M} \Rightarrow \text{Now, } 18 \times V_1 = 0.1 \times 1 \text{ or, } V_1 = \frac{0.1}{18} \times 1000 = 5.55 \text{ ml}$

Correct choice: (1)

**Q.4.** Consider the following sets of quantum numbers:

	n	l	M	s
(a)	3	0	0	+ 1/2
(b)	2	2	1	+ 1/2
(c)	4	3	-2	- 1/2
(d)	1	0	-1	- 1/2
(e)	3	2	3	+1/2

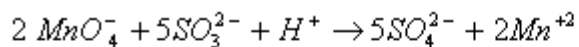
Which of the following sets of quantum number is not possible

- a and c
- b, c and d
- a, b, c and d
- b, d and e

**Sol.** Choice (b), (d) and (e) are incorrect. Remember that value of 'l' ranges from (0) to (n - 1) and values of 'm' range from (-l) to (+l). Correct choice: (4)

**Q. 5.** The number of moles of  $KMnO_4$  that will be needed to react with one mole of sulphite ion in acidic solution is:

- 1
- $\frac{3}{5}$
- $\frac{4}{5}$
- $\frac{2}{5}$



**Sol.**  $\Rightarrow$  Number of moles of  $KMnO_4$  that react with one mole  $SO_3^{2-}$  will be  $\frac{2}{5}$

Correct choice : (4)

**Q. 6.** In a first-order reaction  $A \rightarrow B$ , if k is rate constant and initial concentration of the reactant A is 0.5 M then the half-life is :

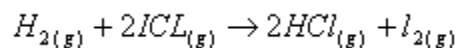
- $\frac{\ln 2}{K}$
- $\frac{0.693}{0.5 K}$

- c.  $\frac{\log 2}{K}$   
 d.  $\frac{\log 2}{K \sqrt{0.5}}$

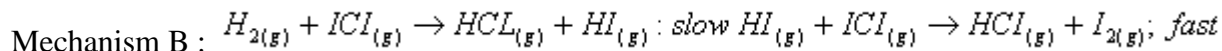
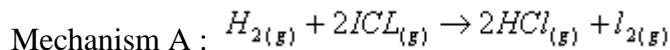
**Sol.**  $t_{1/2}$  for a first order reaction =  $\frac{0.693}{K} = \frac{2.303 \log_{10} 2}{K} = \frac{\ln 2}{K}$

Correct choice: (1)

**Q. 7.** The reaction of hydrogen and iodine monochloride is given as:



This reaction is of first order with respect to  $H_{2(g)}$  and  $ICl_{(g)}$ , following mechanisms were proposed :



Which of the above mechanism (s) can be consistent with the given information about the reaction

- A only
- B only
- 1 and 2 both
- Neither 1 nor 2

**Sol.** The rate law is invariably determined from the slowest step of the mechanism. Therefore mechanism (B) is consistent with the data given for order of reaction. Correct choice: (2)

**Q. 8.** If 60% of a first order reaction was completed in 60 minutes, 50% of the same reaction would be completed in approximately :

- 40 minutes
- 50 minutes
- 45 minutes
- 60 minutes

( $\log 4 = 0.60, \log 5 = 0.69$ )

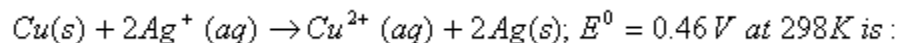
**Sol.**

$$k = \frac{2.303}{60} \log \frac{1}{0.4} = \frac{2.303}{60} \log \frac{10}{4} = \frac{2.303}{60} \log \frac{5}{2} = \frac{2.303}{60} (\log 5 - \log 2) = \frac{2.303}{60} (0.69 - 0.3) = \frac{2.303}{60} \times 0.39$$

$$t_{1/2} = \frac{2.303 \times 0.3 \times 60}{2.303 \times 0.39} = 46.15 \approx 45 \text{ min } \textit{utes}.$$

Correct choice: (3)

**Q. 9.** The equilibrium constant of the reaction :



- $4.0 \times 10^{15}$
- $2.4 \times 10^{10}$
- $2.0 \times 10^{10}$
- $4.0 \times 10^{10}$

$$\Delta G^0 = -2 \times 96500 \times 0.46 = -88780 \text{ J}$$

$$? \Delta G^0 = 2.303 RT \log K_c \text{ or } -88780 = -2.303 \times 8.314 \times 298 \log K_c$$

**Sol.**  $\text{or } -88780 = -5705.84 \log k_c \text{ or } \log k_c = 15.55 \Rightarrow [K_c = 4 \times 10^{15}]$

Correct choice: (1)

**Q. 10.** 0.5 molal aqueous solution of a weak acid (HX) is 20% ionized. If  $K_f$  for water is 1.86 K kg mol<sup>-1</sup>, the lowering in freezing point of the solution is

- 0.56 K
- 1.12 K
- 0.56 K
- 1.12 K

$$\Delta T_f = i K_f m = 1.2 \times 1.86 \times 0.5 = 1.12 \text{ K} \text{ Correct choice: (4)}$$

**Q. 11.** The efficiency of a fuel cell is given by

- $\frac{\Delta S}{\Delta G}$
- $\frac{\Delta H}{\Delta G}$
- $\frac{\Delta G}{\Delta S}$

d.  $\frac{\Delta G}{\Delta H}$

**Sol.** Efficiency of a fuel cell  $(\eta) = \frac{\Delta G}{\Delta H}$  Correct choice: (4)

**Q. 12.** Consider the following reactions:

- a.  $H_{(aq)}^+ + OH_{(aq)}^- = H_2O_{(l)}, \Delta H = -X_1 KJ mol^{-1}$   
 b.  $H_{2(g)} + \frac{1}{2} O_{2(g)} = H_2O_{(l)}, \Delta H = -X_2 KJ mol^{-1}$   
 c.  $CO_{2(g)} + H_{2(g)} = CO_{(g)} + H_2O_{(l)} - X_3 KJ mol^{-1}$   
 d.  $C_2H_{2(g)} + \frac{5}{2} O_{2(g)} = 2CO_{(g)} + H_2O_{(l)} + X_4 KJ mol^{-1}$

Enthalpy of formation of  $H_2O(l)$  is

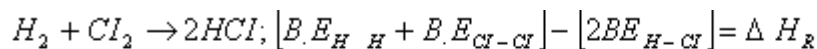
- a.  $+X_1 KJ mol^{-1}$   
 b.  $+X_2 KJ mol^{-1}$   
 c.  $+X_3 KJ mol^{-1}$   
 d.  $+X_4 KJ mol^{-1}$

**Sol.** Heat of formation of  $H_2O(l) = -X_2 kJ / mol$  . Correct choice: (2)

**Q. 13.** Given that bond energies of

$H -$  and  $Cl - Cl$  are  $430 KJmol^{-1}$  respectively and  $\Delta_f H$  fo  $HCl$  is  $-90 KJ mol^{-1}$ ,  
 Bond enthalpy of  $HCl$  is

- a.  $245 KJ mol^{-1}$   
 b.  $2909 KJ mol^{-1}$   
 c.  $380 KJ mol^{-1}$   
 d.  $425 KJ mol^{-1}$



**Sol.**  $[430 + 240] - [2.BE_{H-Cl}] = 180$  or  $670 - 2(BE)_{H-Cl} = 850$  or  $BE_{H-Cl} = 425 KJ mol^{-1}$

Correct choice: (4)

**Q. 14.** The Langmuir adsorption isotherm is deduced using the assumption

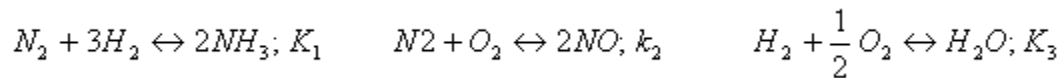
- The adsorbed molecules interact with each other
- The adsorption takes place in multilayers
- The adsorption sites are equivalent in their ability to adsorb the particles
- The heat of adsorption varies with coverage

**Sol.** Langmuir adsorption has the following postulates

- The isotherm is devised for adsorption equilibrium i.e., when rate of adsorption = rate of desorption
- Adsorption at all sites is equivalent
- Adsorption at a site is unaffected by adsorption at neighboring sites.

Correct choice: (3)

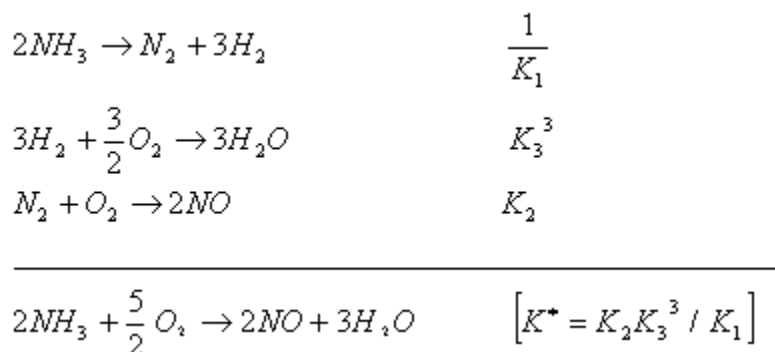
**Q. 15.** The following equilibrium constants are given



The equilibrium constant for the oxidation of  $NH_3$  by oxygen to give  $NO$  is

- $K_1 K_2 / K_3$
- $K_2 K_3^3 / K_1$
- $K_2 K_3^2 / K_1$
- $K_2^2 K_3 / K_1$

**Sol.**



Correct choice: (2)

**Q. 16.** Calculate the pOH of a solution at  $25^\circ C$  that contains

$1 \times 10^{-10}$  M of hydronium ions, i.e.  $H_3O^+$  :

- a. 1.000
- b. 7.000
- c. 4.000
- d. 9.000

**Sol.**  $[OH^-] = 10^{-4}$  mol / l,  $P^{OH} = 4$  Correct choice : (3)

**Q. 17.** A weak acid,  $HA$  has a  $K_a$  of  $1.00 \times 10^{-5}$ . If 0.100 mol of this acid is dissolved in one litre of water, the percentage of acid dissociated at equilibrium is closest to

- a. 0.100%
- b. 99.0%
- c. 1.00%
- d. 99.9%

**Sol.** We know that,  $K_a = C\alpha^2$  or  $\alpha = \sqrt{\frac{K_a}{C}} = \sqrt{\frac{10^{-5}}{10^{-1}}} = 10^{-2}$  Correct choice: (3)

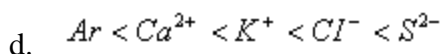
**Q. 18.** The fraction of total volume occupied by the atoms present in a simple cube is

- a.  $\frac{\pi}{4}$
- b.  $\frac{\pi}{6}$
- c.  $\frac{\pi}{3\sqrt{2}}$
- d.  $\frac{\pi}{4\sqrt{2}}$

**Sol.** Packing fraction for a simple cube  $= \frac{4 \left(\frac{a}{2}\right)^3}{a^3} = \frac{\pi}{6}$  Correct choice: (2)

**Q. 19.** Identify the correct order of the size of the following:

- a.  $Ca^{2+} < Ar < K^+ < Cl^- < S^{2-}$
- b.  $Ca^{2+} + K^+ < Ar < S^{2-} < Cl^-$
- c.  $Ca^{2+} + < K^+ < Ar < Cl^- < S^{2-}$



**Sol.** Anions have the largest sizes followed by neutral atoms and then cations for a respective period. So, the correct order should be  $Ca^{2+} < K^+ < Ar < Cl^- < S^{2-}$  Correct choice: (3)

**Q.20.** In which of the following pairs, the two species are iso-structural?

- a.  $BrO_3^-$  and  $XeO_3$
- b.  $SF_4$  and  $XeF_4$
- c.  $SO_3^{2-}$  and  $NO_3^-$
- d.  $BF_3$  and  $NF_3$

**Sol.** Both -  $BrO_3^-$  and  $XeO_3$  have the central atom in  $SP^3$ . both these species are pyramidal.

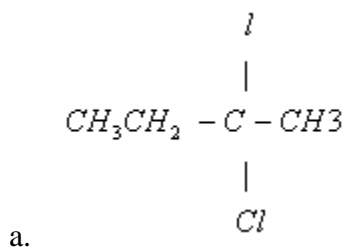
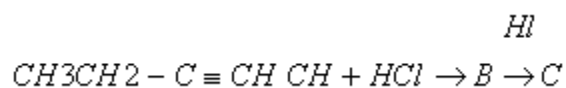
**Q. 21.** The order of decreasing reactivity towards an electrophilic reagent, for the following:

- a. Benzene
- b. Toluene
- c. Chlorobenzene
- d. Phenol would be

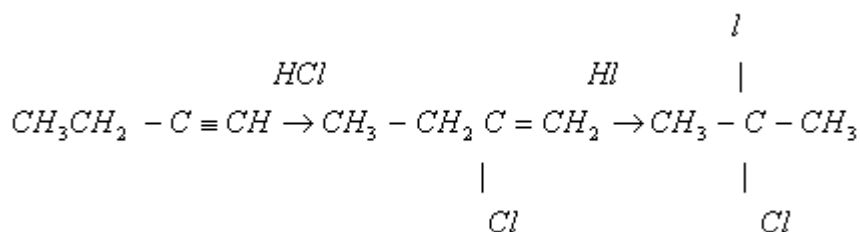
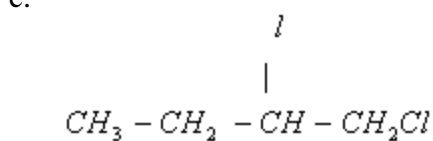
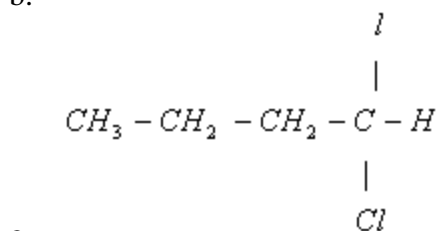
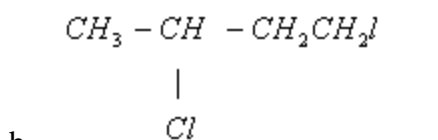
- a.  $d > b > a > c$
- b.  $a > b > c > d$
- c.  $b > d > a > c$
- d.  $d > c > b > a$

**Sol.** The correct order is  $d > b > a > c$ . Correct choice: (1)

**Q. 22.** Predict the product C obtained in the following reaction of





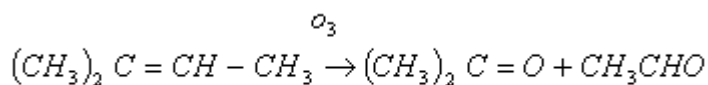


**Sol.**

Correct choice: (1)

**Q. 23.** Which of the compounds with molecular formula  $\text{C}_5\text{H}_{10}$  yields acetone on ozonolysis?

- 2-Methyl-1-butene
- 2-Methyl-2-butene
- 3-Methyl-1-butene
- Cyclopentane



**Sol.** 2-methyl 2-butene  $\text{Zn} / \text{H}_2\text{O}$

Correct choice: (2)

**Q. 24.** If there is no rotation of plane polarized light by a compound in a specific solvent, thought to be chiral, it may mean that

- the compound may be a racemic mixture
- the compound is certainly a chiral

- c. the compound is certainly meso
- d. there is no compound in the solvent

**Sol.** The given compound was thought to be chiral because of a chiral carbon/s. If there is no optical activity, it means the compound must certainly be meso. Correct choice: (3)

**Q. 25.** For the following

- a. I<sup>-</sup>
- b. Cl<sup>-</sup>
- c. Br<sup>-</sup>

the increasing order of nucleophilicity would be:

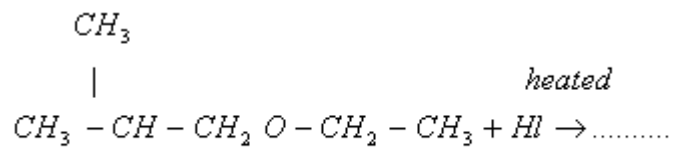
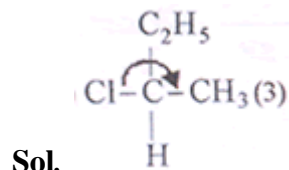
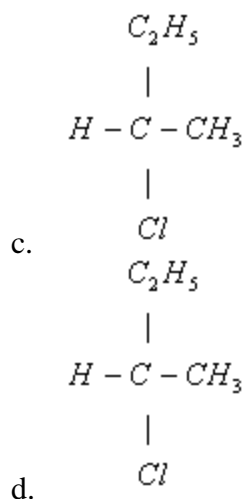
- a.  $Br^- < Cl^- < I^-$
- b.  $I^- < Br^- < Cl^-$
- c.  $Cl^- < Br^- < I^-$
- d.  $I^- < Cl^- < Br^-$

**Sol.** The order of nucleophilicities of halides ions in water (default solvent) will be

$Cl^- < Br^- < I^-$  Correct choice: (3)

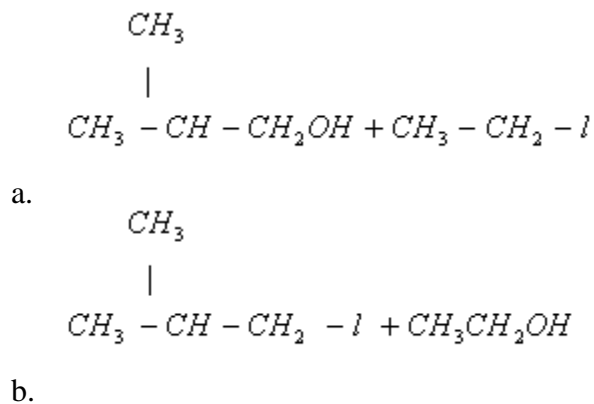
**Q. 26.**  $CH_3 - CHCl - CH_2 - CH_3$  has a chiral centre. Which one of the following represents its R configuration?

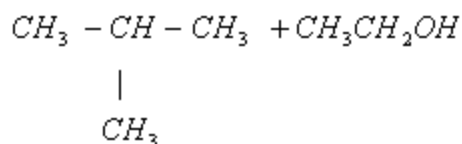
- a. 
$$\begin{array}{c} CH_3 \\ | \\ H - C - Cl \\ | \\ C_2H_5 \\ C_2H_5 \end{array}$$
- b. 
$$\begin{array}{c} H_3C - C - Cl \\ | \\ Cl \end{array}$$



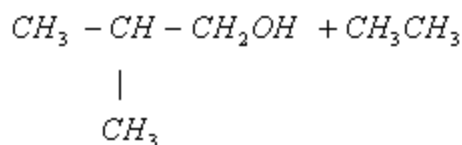
Q. 27. In the reaction

Which of the following compounds will be formed?

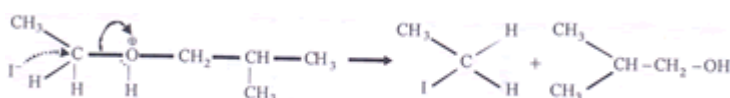




c.



d.



**Sol.**

Correct choice: (1)

**Q. 28.** Which one of the following vitamins is water-soluble?

- Vitamin A
- Vitamin B
- Vitamin E
- Vitamin K

**Sol.** Vitamin (B) and vitamin (C) are water soluble, while Vitamin (A), (D), (E) and (K) are fat soluble. Correct choice: (2)

**Q. 29.** RNA and DNA are chiral molecules, their chirality is due to

- D – sugar component
- L – sugar component
- Chiral bases
- Chiral phosphate ester units

**Sol.** Deoxyribose and ribose sugars are D -chiral sugars in DNA and RNA. Correct choice: (1)

**Q. 30.** Which one of the following polymers is prepared by condensation polymerization?

- Styrene ]
- Nylon – 66
- Teflon
- Rubber

**Sol.** Nylon-66 is a condensation polymer of hexamethylene diamine and adipic acid. \Correct choice: (2)

**Q. 31.** The correct order of  $C - O$  bond length among  $CO$ ,  $CO_3^{2-}$ ,  $CO_2$  is :

- a.  $CO < CO_2 < CO_3^{2-}$
- b.  $CO_2 < CO_3^{2-} < CO$
- c.  $CO < CO_3^{2-} < CO_2$
- d.  $< CO_3^{2-} < CO_2 < CO$

**Sol.** The correct order of  $C - O$  bond length will be  $CO < CO_2 < CO_3^{2-}$

Correct choice: (1)

**Q. 32.** Which one of the following ionic species has the greatest proton affinity to form stable compound?

- a.  $I^-$
- b.  $HS^-$
- c.  $NH_2^-$
- d.  $E^-$

**Sol.** Strongest base would have the highest proton affinity i.e.,  $NH_2^-$  Correct choice: (3)

**Q. 33.** In which of the following the hydration energy is higher than the lattice energy?

- a.  $SrSO_4$
- b.  $BaSO_4$
- c.  $MgSO_4$
- d.  $RaSO_4$

**Sol.**  $MgSO_4$  is the most soluble out of the given alkaline earth metal sulphates. Correct choice: (3)

**Q. 34.** Which of the following statements, about the advantage of roasting sulphide ore before reduction is not true?

- a. Roasting of the sulphide to the oxide is thermodynamically feasible.
- b. Carbon and hydrogen are suitable reducing agents for metal sulphides.
- c. The  $\Delta_f G^\theta$  of the sulphide is greater than those for  $CS_2$  and  $H_2S$
- d. The  $\Delta_f G^\theta$  is negative for roasting of sulphide ore to oxide

**Sol.** Carbon and hydrogen are not suitable for reduction of sulphides directly. Correct choice: (2)

**Q. 35.** The correct order of increasing thermal stability of

$K_2CO_3$ ,  $MgCO_3$ ,  $CaCO_3$  and  $BeCO_3$  is :

- a.  $K_2CO_3 < MgCO_3 < CaCO_3 < BeCO_3$
- b.  $BeCO_3 < MgCO_3 < K_2CO_3 < CaCO_3$
- c.  $BeCO_3 < MgCO_3 < CaCO_3 < K_2CO_3$
- d.  $MgCO_3 < BeCO_3 < CaCO_3 < K_2CO_3$

**Sol.** The correct order is  $BeCO_3 < MgCO_3 < CaCO_3 < K_2CO_3$

Correct choice: (3)

**Q. 36.** Sulphides ores of metals are usually concentrated by Froth Flotation process. Which one of the following sulphides ores offers an exception and is concentrated by chemical leaching?

- a. Sphalerite
- b. Argentite
- c. Galena
- d. Copper pyrite

**Sol.** Argentite ore is leached with NaCN during extraction of silver in the Mc Arthur Forrest Cyanide process. Correct choice: (2)

**Q. 37.** Which one of the following anions is present in the chain structure of silicates?

- a.  $SiO_4^{4-}$
- b.  $Si_2O_7^{6-}$
- c.  $(SiO_3^{2-})_n$
- d.  $(Si_2O_5^{2-})_n$

**Sol.** Chain silicates have the general formula  $(SiO_3^{2-})_n$  Correct choice: (4)

**Q. 38.** Which one of the following orders correctly represents the increasing acid strengths of the given acids?

- a.  $HOCIO_3 < HOCIO_2 < HOCIO < HOCl$
- b.  $HOCIO_3 < HOCIO < HOCIO_2 < HOCIO_3$
- c.  $HOCIO_3 < HOCl < HOCIO_3 < HOCIO_2$
- d.  $HOCIO_2 < HOCIO_3 < HOCIO < HOCl$

**Sol.** The correct order is  $HOCIO_3 < HOCIO < HOCIO_2 < HOCIO_3$   
Correct choice: (2)

**Q. 39.** Which of the following oxidation states are the most characteristic for lead and tin respectively?

- a. + 2, + 2
- b. + 4, + 2
- c. + 2, + 4
- d. + 4, + 4

**Sol.** Among common characteristic states for Pb and Sn, we find +2 and +4 respectively. Correct choice: (3)

**Q. 40.** Identify the incorrect statement among the following:

- a. Shielding power of 4f electrons is quite weak
- b. There is a decrease in the radii of the atoms or ions as one proceeds from La to Lu
- c. Lanthanoid contraction is the accumulation of successive shrinkages
- d. As a result of lanthanoid contraction, the properties of 4d series of the transition elements have no similarities with the 5d series of elements

**Sol.** The atomic radii of 4d and 5d elements down the group become quite similar due to lanthanide contraction. Correct choice: (4)

**Q. 41.** Which one of the following ions is the most stable in aqueous solution?

- a.  $Mn^{3+}$
- b.  $Cr^{3+}$
- c.  $V^{3+}$
- d.  $Ti^{3+}$

(Atomic number. Ti = 22, V = 23, Cr = 24, Mn = 25)

**Sol.**  $Cr^{3+}$  is the most stable ion in aqueous medium. Correct choice: (2)

**Q. 42.** The d electron configurations of Cr. Which one of the following aqua complexes will exhibit the minimum paramagnetic behaviour?

- a.  $[Cr(H_2O_6)]^{2+}$
- b.  $[Mn(H_2O_6)]^{2+}$
- c.  $[Fe(H_2O_6)]^{2+}$
- d.  $[Ni(H_2O_6)]^{2+}$

(Atomic number. Cr = 24, Mn = 25, Fe = 26, Ni = 28)

**Sol.**  $AsH_2O$  is a weak field ligand,  $[Ni(H_2O)_6]^{+2}$  will have two unpaired electrons and will show least paramagnetic character. Correct choice: (4)

**Q. 43.** Which of the following will give a pair of enantiomorphs?

- $[Pt(NH_3)_4][PtCl_6]$
- $[Co(NH_3)_4Cl_2]NO_2$
- $[Cr(NH_3)_6][Co(CN)_6]$
- $[Co(en)_2Cl_2]Cl$  ( $en = NH_2CH_2CH_2NH_2$ )

**Sol.** The complex ion  $[Co(en)_2Cl_2]^+$  can show optical isomerism in its cis-isomer, and will form a pair of enantiomorphs. Its trans-form will be optically inactive (meso). Correct choice: (4)

**Q. 44.** If NaCl is doped with

$10^{-4}$  mol %  $SrCl_2$ , the concentration of cation vacancies will be ( $N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$ )

- $6.02 \times 10^{14} \text{ mol}^{-1}$
- $6.02 \times 10^{15} \text{ mol}^{-1}$
- $6.02 \times 10^{16} \text{ mol}^{-1}$
- $6.02 \times 10^{17} \text{ mol}^{-1}$

**Sol.** Number of moles of cationic vacancies

$$\frac{10^{-4}}{10^2} = 10^{-6} \text{ mole}$$

$\Rightarrow$  Number of cationic vacancies =  $10^{-6} \times 6.02 \times 10^{23} = 6.02 \times 10^{17}$  Correct choice: (4)

**Q. 45.** Which of the following presents the correct order of the acidity in the given compounds?

- $FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$
- $CH_3COOH > BrCH_2COOH > ClCH_2COOH > FCH_2COOH$
- $FCH_2COOH > CH_3COOH > BrCH_2COOH > ClCH_2COOH$
- $BrCH_2COOH > ClCH_2COOH > FCH_2COOH > CH_3COOH$

**Sol.**  $FCH_2COOH > ClCH_2COOH > BrCH_2COOH > CH_3COOH$  Correct choice: (1)

**Q. 46.** The product formed in Aldol condensation is



- a. an alpha, beta unsaturated ester
- b. a beta-hydroxy acid
- c. a beta-hydroxy aldehyde or a beta-hydroxy ketone
- d. an alpha-hydroxy aldehyde or ketone

**Sol.** Aldol condensation leads to formation of  $\beta$  - hydroxy aldehyde or a  $\beta$  - hydroxy Ketone.



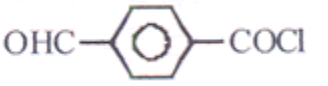
Correct choice: (3)

**Q. 47.** Reduction of aldehydes and ketones into hydrocarbons using zinc amalgam and conc.HCl is called

- a. Wolf-Kishner Reduction
- b. Clemmensen Reduction
- c. Cope Reduction
- d. Dow Reduction

**Sol.** This is Clemmensen's reduction. Correct choice: (2)

**Q. 48.** Consider the following compounds

- a.  $C_6H_5COCl$
- b. 
- c. 
- d. 

The correct decreasing order of their reactivity towards hydrolysis is

- a. (b) > (d) > (a) > (c)
- b. (b) > (d) > (c) > (a)
- c. (a) > (b) > (c) > (d)
- d. (d) > (b) > (a) > (c)

**Sol.** The attack of the nucleophile onto the carbonyl carbon is the rate-determining step. So, order must be (b) > (d) > (a) > (c) Correct choice: (1)

**Q. 49.** Which one of the following on treatment with 50% aqueous sodium

- a. 
$$\begin{array}{c} O \\ || \\ |CH_3 - C - CH_3 \end{array}$$

- b.  $C_6H_5CH_2CHO$
- c.  $C_6H_5CHO$
- d.  $CH_3CH_2CH_2CHO$

**Sol.** Benzaldehyde has no  $\alpha$  - hydrogen atom, so it can undergo Cannizaro reaction. Correct choice: (3)

**Q. 50.** Which one of the following on reduction with lithium aluminium hydride yields a secondary amine?

- a. Methyl Cyanide
- b. Nitroethane
- c. Methylisocyanide
- d. Acetamide

**Sol.** Methyl isocyanide on reduction with  $LiAlH_4$  will give dimethylamine. Correct choice: (3)