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NEET UG-2024

[PAPER WITH ANSWER KEY]

HELD ON SUNDAY 05TH MAY 2023

PAPER CODE

T3

CHEMISTRY

SECTION-A

[Q.51] Match List – I with List – II

	List – I (Conversion)		List – II (Number of Faraday required)
A.	1 mol of H_2O to O_2	**I.**	3F
B.	1 mol of MnO_4^- of Mn^{2+}	**II.**	2F
C.	1.5 mol of Ca from molten $CaCl_2$	**III.**	1F
D.	1 mol of FeO to Fe_2O_3	**IV.**	5F

Choose the correct answer from the options given below:

[1] A-II, B-III, C-I, D-IV

[2] A-III, B-IV, C-II, D-I

[3] A-II, B-IV, C-I, D-III

[4] A-III, B-IV, C-I, D-II

[ANS] **3**

[SOLN] (A) $1\times 2=\frac{q}{f}\Rightarrow q=2f$

(B) $1\times 5=\frac{q}{f}\Rightarrow q=5f$

(C) $1.5\times 2=\frac{q}{f}\Rightarrow q=3f$

(D) $1\times 1=\frac{q}{f}=q=F$

[Q.52] Which reaction is **NOT** a redox reaction?

[1] $H_2+Cl_2\rightarrow 2HCl$

[2] $BaCl_2+Na_2SO_4\rightarrow BaSO_4+2NaCl$

[3] $Zn+CuSO_4\rightarrow ZnSO_4+Cu$

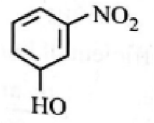
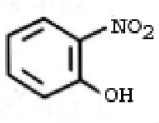
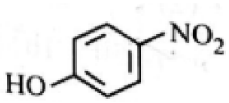
[4] $2KClO_3+I_2\rightarrow 2KIO_3+Cl_2$

[ANS] **2**

[SOLN] $BaCl_2 + Na_2SO_4 \rightarrow BaSO_4 + 2NaCl$

$Ba^{+2}Cl_2^{(-1\times2)} + Na_2^{(+1\times2)}SO_4^{(-2)} \rightarrow Ba^{+2}SO_4^{(-2)} + 2Na^{+1}Cl^{-1}$

[Q.53] Intramolecular hydrogen bonding is present in

[1]  [2] HF [3]  [4] 

[ANS] **3**

[Q.54] Fehling's solution 'A is

[1] alkaline solution of sodium potassium tartrate (Rochelle's salt)

[2] aqueous sodium citrate

[3] aqueous copper sulphate

[4] alkaline copper sulphate

[ANS] **3**

[Q.55] 1 gram of sodium hydroxide was treated with 25 mL of 0.75 M HCl solution, the mass of sodium hydroxide left unreacted is equal to

[1] Zero mg [2] 200 mg [3] 750 mg [4] 250 mg

[ANS] **4**

[SOLN] $NaOH + HCl \rightarrow NaCl + H_2O$

m.mol of NaOH reacted = 18.75

mass of NaOH reacted = 18.75×40 = 750 mg

mass remain unreacted = 1000–750 = 250 mg

[Q.56] Match List I with List II

List I (Compound)	**List II (Shape geometry)**
A. NH_3	I. Trigonal Pyramidal
B. BrF_5	II. Square Planar
C. XeF_4	III. Octahedral
D. SF_6	IV. Square Pyramidal

Choose the correct answer from the options given below:

[1] A – III, B – IV, C – I, D - II [2] A – II, B – III, C – IV, D - I

[3] A – I, B – IV, C – II, D - III [4] A – II, B – IV, C – III, D - I

[ANS] 3

[SOLN] NH_3 - Trigonal Pyramidal

BrF_5 - Square Pyramidal

XeF_4 - Square Planar

SF_6 - Octahedral

[Q.57] The E° value for the Mn^{3+}/Mn^{2+} couple is more positive than that of Cr^{3+}/Cr^{2+} or Fe^{3+}/Fe^{2+} due to change of

[1] d^4 to d^5 configuration

[2] d^3 to d^5 configuration

[3] d^5 to d^4 configuration

[4] d^5 to d^2 configuration

[ANS] 1

[SOLN] $E^\circ\ Mn^{3+}/Mn^{2+} = (+1.57v)$

$E^\circ\ Cr^{3+}/Cr^{2+} = (-0.41v)$

$E^\circ\ Fe^{3+}/Fe^{2+} = (+0.77v)$

[Q.58] Match List – I with List – II.

	List – I (Process)		**List – II (Conditions)**
A.	Isothermal process	**I.**	No heat exchange
B.	Isochoric process	**II.**	Carried out at constant temperature
C.	Isobaric process	**III.**	Carried out at constant volume
D.	Adiabatic process	**IV.**	Carried out at constant pressure

Choose the correct answer from the options given below:

[1] A-I, B-II, C-III, D-IV

[2] A-II, B-III, C-IV, D-I

[3] A-IV, B-III, C-II, D-I

[4] A-IV, B-II, C-III, D-I

[ANS] **2**

[Q.59] Activation energy of any chemical reaction can be calculated if one knows the value of

[1] orientation of reactant molecules during collision.

[2] rate constant at two different temperatures.

[3] rate constant at standard temperature

[4] probability of collision.

[ANS] **2**

[SOLN] $\log\frac{k_2}{k_1} = \frac{E_a}{2.303R}\left[\frac{T_2 - T_1}{T_1T_2}\right]$

[Q.60] A compound with a molecular formula **of** C_6H_{14} has two tertiary carbons. Its IUPAC name is

[1] 2,3- dimethylbutane [2] 2,2-dimethylbutane

[3] n-hexane [4] 2-methylpentane

[ANS] **1**

[Q.61] Spin only ' magnetic moment is same for which of the following ions?

A. Ti^{3+} B. Cr^{2+}

C. Mn^{2+} D. Fe^{2+}

E. Sc^{3+}

Choose the most appropriate answer from the options given below:

[1] B and C only [2] A and D only

[3] B and D only [4] A and E only

[ANS] 3

[SOLN] A. $Ti^{3+} - 3d^1$

B. $Cr^{2+} - 3d^4$

C. $Mn^{2+} - 3d^5$

D. $Fe^{2+} - 3d^6$

E. $Sc^{3+} - 3d^0$

[Q.62] Arrange the following elements in increasing order of electronegativity :

N, O, F, C, Si

Choose the correct answer from the options given below:

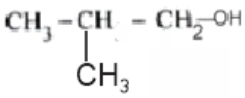
[1] O < F < N < C < Si [2] F < O < N < C < Si

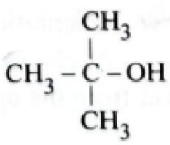
[3] Si < C < N < O < F [4] Si < C < O < N < F

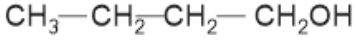
[ANS] 3

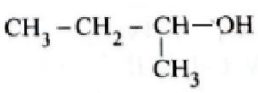
[SOLN] EN Order: F > O > N > C > Si

[Q.63] Which one of the following alcohols reacts instantaneously with Lucas reagent?

[1] 

[2] 

[3] 

[4] 

[ANS] **2**

[Q.64] Given below are two statements:

Statement I : Both $\left[Co(NH_3)_6\right]^{3+}$ and $[CoF_6]^{3-}$ complexes are octahedral but differ in their magnetic behavior.

Statement II: $[CoF_6]^{3-}$ is paramagnetic.

In the light of the above statements, choose the correct answer from the options given below:

[1] Statement I is true but Statement II is false.

[2] Statement I is false but Statement II is true

[3] Both Statement I and Statement II are true.

[4] Both Statement I and Statement II are false.

[ANS] 3

[SOLN] $\left[Co(NH_3)_6\right]^{3+}$ - $Co^{3+} - d^2sp^3$ Diamagnetic, No. of unpaired = 0

$[CoF_6]^{3-}$ - $Co^{3+} - sp^3d^2$ Paramagnetic, No. of unpaired = 4

[Q.65] Given below are two statements:

Statement I : The boiling point of hydrides of Group 16 elements follow the order $H_2O > H_2Te > H_2Se > H_2S$

Statement II: On the basis of molecular mass, H_2O is expected to have lower boiling point than the other members of the group but due to the presence of extensive H-bonding in H_2O, it has higher boiling point.

In the light of the above statements, choose the correct answer from the options given below:

[1] Statement I is true but Statement II is false

[2] Statement I is False but Statement II is True

[3] Both Statement I and Statement II are true.

[4] Both Statement I and Statement II are false

[ANS] **3**

[Q.66] Match List – I with List – II.

	List – I Quantum Number		**List – II Information provided**
A.	m_l	**I.**	Shape of orbital
B.	m_s	**II.**	Size of orbital
C.	l	**III.**	Orientation of orbital
D.	n	**IV.**	Orientation of spin of electron

Choose the correct answer from the options given below:

[1] A-III, B-IV, C-II, D-I

[2] A-II, B-I, C-IV, D-III

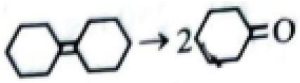
[3] A-I, B-III, C-II, D-IV

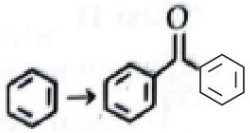
[4] A-III, B-IV, C-I, D-II

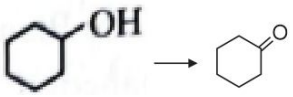
[ANS] **4**

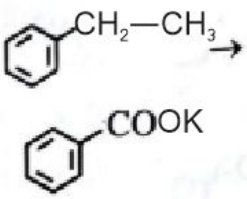
[Q.67] Match List I with List II

List I (Reaction)

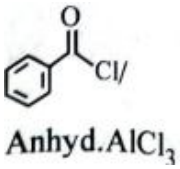
A. 

B. 

C. 

D. 

List II (Reagents/Condition)]

I. 

II. CrO_3

III. $KMnO_4/KOH, \Delta$

IV. (i) O_3 (ii) Zn-H_2O

Choose the correct answer from the options given below:

[1] A-IV, B-I, C-II, D-III

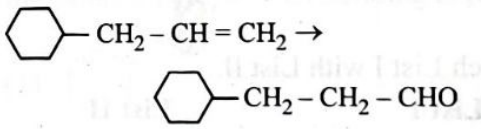
[2] A-I, B-IV, C-II, D-III

[3] A-IV, B-I, C-III, D-II

[4] A-III, B-I, C-II, D-IV

[ANS] **1**

[Q.68] Identify the correct reagents that would bring about the following transformations**.**



[1] (i) BH_3
(ii) $H_2O_2/\overset{\ominus}{O}H$
(iii) alk. $KMnO_4$
(iv) $H_3O^{\oplus}$

[2] (i) H_2O/H^+
(ii) PCC

[3] (i) H_2O/H^+
(ii) CrO_3

[4] (i) BH_3
(ii) $H_2O_2/\overset{\ominus}{O}H$
(iii) PCC

[ANS] **4**

[Q.69] The reagents with which glucose does not react to give the corresponding tests/products are

A. Tollen's reagent

B. Schiff's reagent

C. HCN

D. NH_2OH

E. $NaHSO_3$

Choose the correct options from the given below:

[1] B and E [2] E and D [3] B and C [4] A and D

[ANS] 1

[Q.70] Match List I with List II.

List I (Molecule)	**List II (Number and types of bond/s between two carbon atoms)**
A. ethane	I. one σ- bond and two π – bond
B. ethene	II. Two π – bonds
C. carbon molecule C_2	III. One σ-bond
D. ethyne	IV. one σ- bond and one π – bond

Choose the correct options from the given below:

[1] A-III, B-IV, C-II, D-I [2] A-III, B-IV, C-I, D-II

[3] A-I, B-IV, C-II, D-III [4] A-IV, B-III, C-II, D-I

[ANS] **1**

[Q.71] Among Group 16 elements, which one does **NOT** show-2 oxidation state?

[1] Te [2] Po [3] O [4] Se

[:ANS] **2**

[Q.72] For the reaction $2A \rightleftharpoons B + C$, $K_c = 4 \times 10^{-3}$. At a given time, the composition of reaction mixture is : $[A] = [B] = [C] = 2 \times 10^{-3}$M.

Then, which of the following is correct?

[1] Reaction has a tendency to go in backward direction.

[2] Reaction has gone to completion in forward direction

[3] Reaction is at equilibrium.

[4] Reaction has a tendency to go in forward direction.

[ANS] **1**

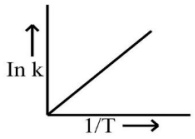
[SOLN] $2A \rightleftharpoons B + C \quad k_c = 4 \times 10^{-3}$

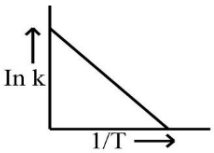
$$Q_c = \frac{\left(2\times10^{-3}\right)^2}{\left(2\times10^{-3}\right)^2} = 1$$

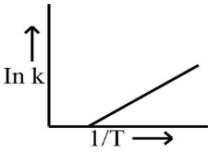
$Q_c > k_c$

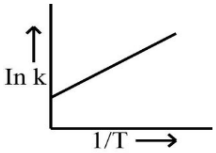
Hence, Reaction has a tendency to go in backward direction.

[Q.73] Which plot of In k vs $\frac{1}{T}$ is consistent with Arrhenius equation?

[1] 

[2] 

[3] 

[4] 

[ANS] **2**

[SOLN] $\text{In}k = -\frac{Ea}{R}\left(\frac{1}{T}\right) + \text{In}A$

$y = mx + c$

[Q.74] In which of the following equilibria, K_p and K_c are **NOT** equal?

[1] $CO_{(g)} + H_2O_{(g)} \rightleftharpoons CO_{2(g)} + H_{2(g)}$

[2] $2BrCl_{(g)} \rightleftharpoons Br_{2(g)} + Cl_{2(g)}$

[3] $PCl_{5(g)} \rightleftharpoons PCl_{3(g)} + Cl_{2(g)}$

[4] $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$

[ANS] **3**

[SOLN] $\Delta n_g \neq 0$ then $K_p \neq K_c$

[Q.75] Given below are two statements:

Statement I: The boiling point of three isomeric pentanes follows the order

n-pentane > isopentane > neopentane

Statement II: When branching increases, the molecule attains a shape of sphere. This results in smaller surface area for contact, due to which the intermolecular forces between the spherical molecules are weak, thereby lowering the boiling point.

In the light of the above statements, choose the most appropriate answer from the options given below:

[1] Statement I is correct but Statement II is incorrect.

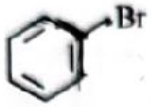
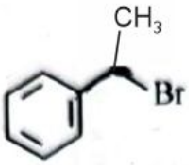
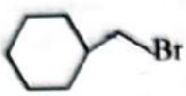
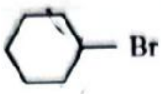
[2] Statement I is incorrect but Statement II is correct.

[3] Both Statement I and Statement II are correct.

[4] Both Statement I and Statement II are incorrect.

[:ANS] 3

[Q.76] The compound that will undergo S_N1 reaction with the fastest is

[1]  [2]  [3]  [4] 

[ANS] **2**

[Q.77] The energy of an electron in the ground state (n = 1) for He^+ ion is –x J, then that for an electron in n = 2 state for Be^{3+} ion in J is :

[1] –4x [2] $-\frac{4}{9}x$ [3] –x [4] $-\frac{x}{9}$

[ANS] **3**

[SOLN] $E = -13.6\frac{z^2}{n^2}ev$

$-X = -13.6\frac{(2)^2}{1^2}$ .....(1)

$E_2^{Be^{+3}} == -13.6\frac{(4)^2}{(2)^2}$ .....(2)

Equation (1) divided by equation (2)

$E_2^{Be^{+3}} = -X$

[Q.78] In which of the following processes entropy increases?

A. A liquid evaporates to vapour.

B. Temperature of a crystalline solid lowered from 130 K to 0 K.

C. $2NaHCO_{3(s)} \rightarrow Na_2CO_{3(s)} + CO_{2(g)} + H_2O_{(g)}$

D. $Cl_{2(g)} \rightarrow 2Cl_{(g)}$

Choose the correct answer from the options given below:

[1] A, C and D [2] C and D [3] A and C [4] A, B and D

[ANS] **1**

[Q.79] On heating, some solid substances change from solid to vapour state without passing through liquid state. The technique used for the purification of such solid substances based on the above principle is known as

[1] Distillation [2] Chromatography [3] Crystallization [4] Sublimation

[ANS] **4**

[:Q.80] Match List I with List II

List I (Complex)	**List II (Types of isomerism)**
(A) $\left[Co(NH_3)_5(NO_2)\right]Cl_2$	I. Solvate isomerism
(B) $\left[Co(NH_3)_5(SO_4)\right]Br$	II. Linkage isomerism
(C) $\left[Co(NH_3)_6\right][Cr(CN)_6]$	III. Ionization isomerism
(D) $\left[CO(H_2O)_6\right]Cl_3$	IV. Coordination isomerism

Choose the correct answer from the options given below:

[1] A-I, B-IV, C-III, D-II [2] A-II, B-IV, C-III, D-I

[3] A-II, B-III, C-IV, D-I [4] A-I, B-III, C-IV, D-II

[:ANS] 3

[Q.81] Given below are two statements:

Statement I: Aniline does not undergo Friedel- Crafts alkylation reaction.

Statement II: Aniline cannot be prepared through Gabriel synthesis.

In the light of the above statements, choose the correct answer from the options given below:

[1] Statement 1 is correct but Statement II is false.

[2] Statement I is incorrect but Statement II is true

[3] Both Statement I and Statement II are true.

[4] Both Statement I and Statement II are false.

[ANS] 3

[Q.82] Arrange the following elements in increasing order of first ionization enthalpy:

Li, Be, B, C, N

Choose the correct answer from the options given below:

[1] Li < Be < C < B < N [2] Li < Be < N < B < C

[3] Li < Be < B < C < N [4] Li < B < Be < C < N

[:ANS] 4

[:SOLN] Li < B < Be < C < N

[Q.83] The highest number of helium atoms is in

[1] 4 g of helium

[2] 2.271098 L of helium at STP

[3] 4 mol of helium

[4] 4 u of helium

[ANS] 3

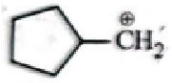
[SOLN] (1) No. of atoms = $\frac{4}{4} \times N_A$

(2) No. of atoms = $\frac{2.271098}{22.7} \times N_A$

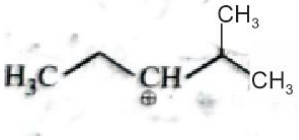
(3) No. of atoms = $4 \times N_A$

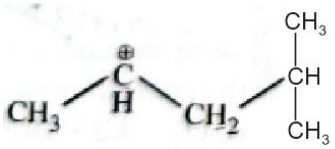
(4) No. of atoms = 1

[Q.84] The most stable carbocation among the following is

[1] 

[2] 

[3] 

[4] 

[ANS] **2**

[Q.85] The Henry's law constant (K_H) values of three gases (A, B, C) in water are 145, 2×10^{-5} and 35 kbar, respectively. The solubility of these gases in water follow the order:

[1] A > C > B [2] A > B > C [3] B > A > C [4] B > C > A

[ANS] **4**

[SOLN] Solubility of gas α $\frac{1}{K_H \text{ of gas}}$

SECTION-B

[Q.86] A compound X contains 32% of A, 20% of B and remaining percentage of C. Then, the empirical formula of X is :

(Given atomic masses of A = 64; B = 40; C = 32 u)

[1] AB_2C_2 [2] ABC_4 [3] A_2BC_2 [4] ABC_3

[ANS] **4**

[SOLN] mol of A = $\frac{32}{64} = 0.5$

Mol of B = $\frac{20}{40} = 0.5$

Mol of C = $\frac{48}{32} = 1.5$

Empirical formula = ABC_3

[Q.87] The products A and B obtained in the following reactions, respectively, are

$3ROH + PCl_3 \rightarrow 3RCl + A$

$ROH + PCl_5 \rightarrow RCl + HCl + B$

[1] H_3PO_4 and $POCl_3$ [2] H_3PO_3 and $POCl_3$

[3] $POCl_3$ and H_3PO_3 [4] $POCl_3$ and H_3PO_4

[:ANS] 2

[:ANS] $3ROH + PCl_3 \rightarrow 3RCl + H_3PO_3$

$ROH + PCl_5 \rightarrow RCl + HCl + POCl_3$

[Q.88] The plot of osmotic pressure (Π) vs concentration $\left(molL^{-1}\right)$ for a solution gives a straight line with slope 25. 73 L bar mol^{-1}. The temperature at which the osmotic pressure measurement is done is (Use R = 0.083 L bar mol $^{-1}$ K^{-1})

[1] 25.73°C [2] 12.05°C [3] 37°C [4] 310°C

[ANS] 3

[SOLN] $\pi = CRT$

$\pi = (RT)C$

$\downarrow \quad \downarrow \quad \downarrow$

$y = \quad m \quad x$

m = slope = RT = 25.73 L. bar. mol^{-1}

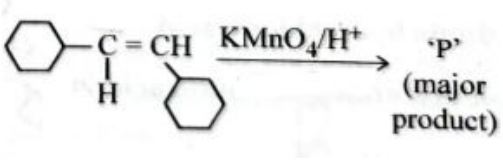
= 0.08314 × T = 25.73

= T = 309. 718 K

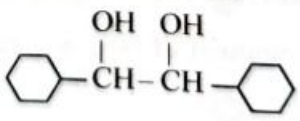
= 309. 718 – 273

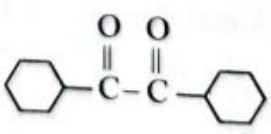
$= 37\,°C$

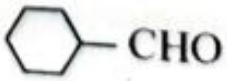
[Q.89] For the given reaction:

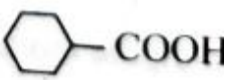


'P' is

[1] 

[2] 

[3] 

[4] 

[ANS] 4

[Q.90] Given below are two statements:

Statement-I: $\left[Co(NH_3)_6\right]^{3+}$ is a homoleptic complex whereas $\left[Co(NH_3)_4Cl_4\right]^{+}$ is a heteroleptic complex.

Statement-II: Complex $\left[Co(NH_3)_6\right]^{3+}$ has only one kind of ligands but $\left[Co(NH_3)_4Cl_2\right]^{+}$ has more than one kind of ligands.

In the light of the above statements, choose the correct answer from the options given below:

[1] Statement-I is true but Statement-II is false.

[2] Statement-I is false but Statement II is true

[3] Both Statement I and Statement II are true

[4] Both Statement I and Statement II are false

[ANS] 3

[Q.91] During the preparation of Mohr's salt solution (Ferrous ammonium sulphate), which of the following acid is added to prevent hydrolysis of Fe^{2+} ion?

[1] dilute nitric acid

[2] dilute sulphuric acid

[3] dilute hydrochloric acid

[4] concentrated sulphuric acid

[ANS] 2

[Q.92] Identify the correct answer.

[1] Dipole moment of NF_3 is greater than that of NH_3.

[2] Three canonical forms can be drawn for CO_3^{2-} ion.

[3] Three resonance structures can be drawn for ozone

[4] BF_3 has non-zero dipole moment

[ANS] 2

[Q.93] Given below are certain cations. Using inorganic qualitative analysis, arrange them in increasing group number from 0 to VI.

(A) Al^{3+} (B) Cu^{2+} (C) Cu^{2+} (D) CO^{2+}

(E) Mg^{2+}

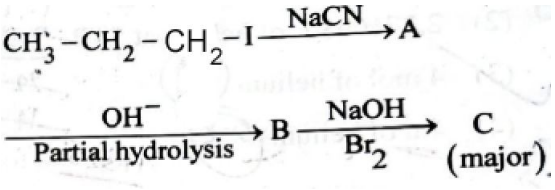
Choose the correct answer from the options given below:

[1] E, C, D, D, A [2] E, A, B, C, D

[3] B, A, D, C, E [4] B, C, A, D, E

[ANS] 3

[Q.94] **Identify the major product C formed in the following reaction sequence :**



[1] butanamide [2] α – bromobutanoic acid

[3] propylamine [4] butylamnie

[ANS] **3**

[Q.95] The rate of reaction quadruples when temperature changes from 27°C to 57°C Calculate the energy of activation.

Given R = $8.314 JK^{-1}mol^{-1}$, log 4 = 0.6021

[1] 3.80 kJ/ mol [2] 3804 kJ/ mol

[3] 38. 04 kJ/ mol [4] 380. 4 kJ/ mol

[ANS] **3**

[SOLN] $\frac{r_2}{r_1} = \frac{k_2}{k_1} = 4$

$$\log\frac{k_2}{k_1} = \frac{E_a}{2.303R}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)$$

$$\log 4 = \frac{Ea}{2.303 \times 8.314}\left(\frac{T_2 - T_1}{T_1T_2}\right)$$

$$0.6021 = \frac{E_a}{2.303 \times 8.314}\left(\frac{330 - 300}{330 \times 300}\right)$$

$$E_a = 38.04 Kjmol^{-1}$$

[Q.96] Consider the following reaction in a sealed vessel at equilibrium with concentration of

$N_2 = 3.0 \times 10^{-3}M, O_2 = 4.2 \times 10^{-3}M$ and $NO = 2.8 \times 10^{-3}M$

$2NO_{(g)} \rightleftharpoons N_{2(g)} + O_{2(g)}$

If $0.1 molL^{-1}$ **of** $NO_{(g)}$ is taken in a closed vessel, what will be degree of dissociation (α) of $NO_{(g)}$ at equilibrium?

[1] 0.8889 [2] 0.717 [3] 0.00889 [4] 0.0889

[ANS] **2**

[SOLN] $2NO(g) \rightleftharpoons N_2(g) + O_2(g)$

$$K_c = \frac{\left(3\times10^{-3}\right)\times 4.2\times10^{-3}}{2.8\times10^{-3}} = 1.607$$

$$\underset{0.1-2x}{2NO(g)} \rightleftharpoons \underset{x}{N_2(g)} + \underset{x}{O_2(g)}$$

$$1.607 = \frac{x\times x}{(0.1-2x)^2}$$

$$\Rightarrow 1.607 = \frac{x^2}{(0.1-2x)^2}$$

$$\Rightarrow x = 0.0355$$

$$\alpha = \frac{2x}{0.1} = \frac{2\times0.0355}{0.1}$$

$$= 0.717$$

[Q.97] The work done during reversible isothermal expansion of one mole of hydrogen gas at $25^\circ C$ from pressure of 20 atmosphere to 10 atmosphere is :

(Given $R = 2.0\,cal K^{-1}mol^{-1}$)

[1] 413. 14 calories [2] 100 calories

[3] 0 calorie [4] - 413. 14 calories

[ANS] **4**

[SOLN] $W_{rev} = -2.303\,nRT\log\frac{P_1}{P_2}$

$$= -2.303\times1\times2\times298\log\frac{20}{10}$$

$$= -2.303\times2\times298\times0.3010\,cal$$

$$= -413.15\,cal$$

[Q.98] Mass in grams of copper deposited by passing 9.6487 A current through a voltmeter containing copper sulphate solution for 100 seconds is:

(Given : Molar mass of $Cu: 63\,g\,mol^{-1}$, IF = 96487C)

[1] 31. 5 g [2] 0.0315 g [3] 3.15 g [4] 0.315 g

[ANS] 4

[SOLN] $Cu^{2+} + 2e^- \rightarrow Cu$

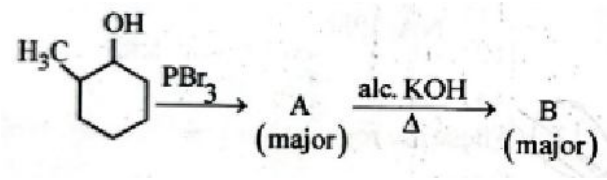
$$E_{Cu} = \frac{63}{2}$$

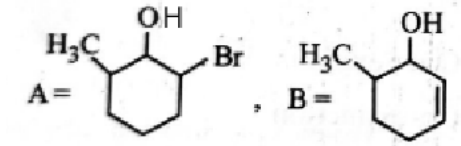
$$\text{no. of } eq^{+} \text{ of Cu} = \text{no. of faraday}$$

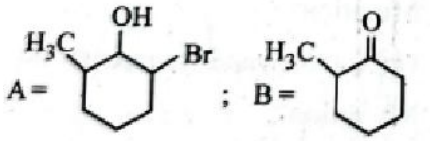
$$= \frac{Q}{F} = \frac{i \times t}{F} = \frac{9.6487 \times 100}{96500} = 0.00998$$

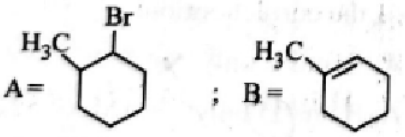
$$\text{Mass of Cu deposited} = 0.009998 \times \frac{63}{2} = 0.3149\,g$$

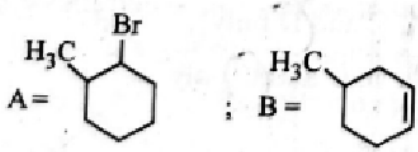
[Q.99] **Major products A and B formed in the following reaction sequence, are**



[1] 

[2] 

[3] 

[4] 

[ANS] **3**

[Q.100] The pair of lanthanoid ions which are diamagnetic is

[1] Gd^{3+} and Eu^{3+}

[2] Pm^{3+} and Sm^{3+}

[3] Ce^{4+} and Yb^{2+}

[4] Ce^{3+} and Eu^{2+}

[ANS] **3**