

Section : Chemistry

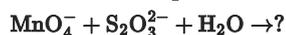
Q.1 Wood spirit is known as

1. Ethanol
2. Propanol
3. Methanol
4. Methoxymethane

Options 1. 1

2. 2
3. 3
4. 4

Q.2 What are the products of the following reaction in neutral solution?



- (1) $\text{MnO}_2, \text{SO}_3^{2-}, \text{H}^+$
- (2) $\text{MnO}_2, \text{SO}_2, \text{HO}^-$
- (3) $\text{MnO}_2, \text{SO}_4^{2-}, \text{HO}^-$
- (4) $\text{Mn}^{2+}, \text{SO}_4^{2-}, \text{H}^+$

Options 1. 1

2. 2
3. 3
4. 4

Q.3 When 1 mol of $\text{CrCl}_3 \cdot 6\text{H}_2\text{O}$ is treated with excess AgNO_3 , 3 mol of AgCl are obtained.

The conductivity of the solution will correspond to:

1. 1:1 electrolyte
2. 1:2 electrolyte
3. 2:1 electrolyte
4. 1:3 electrolyte

Options 1. 1

2. 2
3. 3
4. 4

Q.4 Predict the order of decreasing reactivity of the following compounds towards SN_1 reaction.

- (A) $\text{C}_6\text{H}_5\text{CH}_2\text{Br}$
- (B) $\text{C}_6\text{H}_5\text{CH}(\text{C}_6\text{H}_5)\text{Br}$
- (C) $\text{C}_6\text{H}_5\text{CH}(\text{CH}_3)\text{Br}$
- (D) $\text{C}_6\text{H}_5\text{C}(\text{CH}_3)(\text{C}_6\text{H}_5)\text{Br}$

Choose the correct answer from the options given below:

1. (A), (B), (C), (D)
2. (D), (A), (C), (B)
3. (D), (B), (C), (A)
4. (A), (C), (B), (D)

Options 1. 1

2. 2
3. 3
4. 4

Q.5 Identify the correct statements for the behavior of ethane-1,2-diamine as a ligand.

- (A) it is a neutral ligand
- (B) it is a bidentate ligand
- (C) it is an ambidentate ligand
- (D) it is a chelating ligand

Choose the correct answer from the options given below:

1. (A), (B) and (D) only
2. (A), (B) and (C) only
3. (B), (C) and (D)
4. (B) and (D) only

Options 1. 1

2. 2
3. 3
4. 4

Q.6 Which one of these tripositive ions is the most stable in aqueous solution?

- (1) Cr^{3+}
- (2) Ti^{3+}

(3) V^{3+}

(4) Mn^{3+}

Options 1. 1

2. 2

3. 3

4. 4

Q.7 $Cr_2O_7^{2-}$ dissolves in aqueous NaOH to give:

(1) Cr_2O_3

(2) $Cr(OH)_3$

(3) CrO_4^{2-}

(4) CrO_3

Options 1. 1

2. 2

3. 3

4. 4

Q.8 The correct increasing reactivity order for S_N2 reaction for the following compounds

(A) Benzyl Chloride

(B) Methyl Chloride,

(C) Isopropyl Chloride

(D) Tertiary butyl Chloride

Choose the correct answer from the options given below:

1. (A), (B), (D), (C)

2. (A), (B), (C), (D)

3. (A), (D), (C), (B)

4. (D), (C), (B), (A)

Options 1. 1

2. 2

3. 3

4. 4

Q.9 The order of a certain reaction with respect to Cl^- ion is -1 .

The Cl^- is

1. A catalyst

2. A promotor

3. An inhibitor

4. Always a product molecule

Options 1. 1

2. 2

3. 3

4. 4

Q.10 Lack of Vitamin B1 causes:

1. Beri beri

2. Rickets

3. Convulsions

4. Scurvy

Options 1. 1

2. 2

3. 3

4. 4

Q.11 The correct sequence of attachment of sugar, base and phosphoric acid in a nucleic acid is

(A) Formation of phosphodiester linkage

(B) Attachment of base to 1' position of sugar

(C) Selection of appropriate base and sugar

(D) Attachment of phosphoric acid

Choose the correct answer from the options given below:

1. (C), (B), (D), (A)

2. (A), (C), (B), (D)

3. (B), (A), (D), (C)

4. (C), (B), (A), (D)

Options 1. 1

2. 2

3. 3

4. 4

Q.12 Match List-I with List-II

List-I

List-II

- (A) Wurtz-Fittig reaction (I) CH_3COCl and Anhyd. AlCl_3
(B) Chiral (II) CFCs
(C) Friedel-Crafts Acylation (III) Alkylarene
(D) Freons (IV) Non-superimposable mirror images

Choose the correct answer from the options given below:

- (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
- (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

Options

- 1
- 2
- 3
- 4

Q.13 Which of the following statements, with reference to a solution, are correct?

- (A) The osmotic pressure of the solution is proportional to the molarity of the solute.
(B) The elevation of the boiling point (ΔT_b) is directly proportional to the molal concentration of the solute in a solution.
(C) The unit of K_b is $\text{K kg}^{-1} \text{mol}^{-1}$.
(D) $\Delta T_b = T_b^0 - T_b$.

Choose the correct answer from the options given below:

- (A), (B) and (C) only
- (A) and (B) only
- (C) and (D) only
- (B), (C) and (D) only

Options

- 1
- 2
- 3
- 4

Q.14 Reaction of Ethene with Bromine in CCl_4 will result in

- Gem-Dibromide
- Vicinal-Dibromide
- Vinylic-Dibromide
- Allylic-Bromide

Options

- 1
- 2
- 3
- 4

Q.15 Which of the following compound will form a cyclic product on reaction with ethylene glycol?

- Acetone
- Ethylether
- Benzoic acid
- Benzyl alcohol

Options

- 1
- 2
- 3
- 4

Q.16 Which of the following reagents can be used to convert Ethanol to Ethanal?

- (A) Chromium trioxide in Pyridine and HCl
(B) Heated Copper at 573 K
(C) Anhydrous Chromium trioxide
(D) Acidic KMnO_4

Choose the correct answer from the options given below:

- (A), (B) and (D) only
- (A), (B) and (C) only
- (A), (B), (C) and (D)
- (B), (C) and (D) only

Options

- 1
- 2
- 3
- 4

Q.17 Arrange the following ligands in decreasing order of field strength in spectrochemical series.

- (A) Br^-
(B) H_2O
(C) OH^-
(D) CO

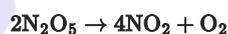
Choose the correct answer from the options given below:

1. (D), (B), (C), (A)
2. (A), (C), (B), (D)
3. (B), (A), (D), (C)
4. (C), (B), (D), (A)

Options 1. 1

2. 2
3. 3
4. 4

Q.18 For the reaction:



At a given instant of time, the rate and rate constant are $1.02 \times 10^{-4} \text{ mol L}^{-1}\text{s}^{-1}$ and $3.4 \times 10^{-5} \text{ s}^{-1}$, respectively.

The concentration of N_2O_5 at that time will be:

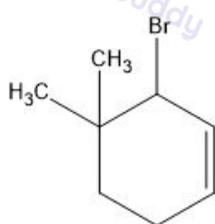
- (1) 3.0 mol L^{-1}
- (2) 1.713 mol L^{-1}
- (3) $1.02 \times 10^{-4} \text{ mol L}^{-1}$
- (4) $3.4 \times 10^{-5} \text{ mol L}^{-1}$

Options 1. 1

2. 2
3. 3
4. 4

Q.19

The IUPAC name of the given compound is



1. 3-Bromo-4,4-dimethyl-cyclohexene
2. 1-Bromo-2,2-dimethyl-cyclohexene
3. 1,1-dimethyl-2-bromo-cyclohexene
4. 1,1-dimethyl-2-bromo-cyclohexane

Options 1. 1

2. 2
3. 3
4. 4

Q.20 Isomerism shown by the complex pair $\text{Co}(\text{NH}_3)_5(\text{NO}_3)]\text{SO}_4$ and $\text{Co}(\text{NH}_3)_5(\text{SO}_4)]\text{NO}_3$ is:

1. Hydrate isomerism
2. Ionization isomerism
3. Coordination isomerism
4. Linkage isomerism

Options 1. 1

2. 2
3. 3
4. 4

Q.21 Decide which of the following atomic numbers are the atomic numbers of the inner transition elements

- (A) 59
- (B) 95
- (C) 102
- (D) 74

Choose the correct answer from the options given below:

1. (A), (B) and (D) only
2. (A), (B) and (C) only
3. (B), (C) and (D) only
4. (A), (C) and (D) only

Options 1. 1

2. 2

3. 3

4. 4

Q.22 Match the properties given in list-I with the metals given in list-II

List-I

List-II

Property

Metal

(A) Element with highest second ionization enthalpy (I) Co

(B) Element with highest heat of atomisation (II) Cu

(C) M in $M(\text{CO})_6$ (III) Zn

(D) Element with highest third ionization enthalpy (IV) Cr

Choose the correct answer from the options given below:

1. (A) - (II), (B) - (III), (C) - (I), (D) - (IV)

2. (A) - (II), (B) - (I), (C) - (IV), (D) - (III)

3. (A) - (III), (B) - (I), (C) - (IV), (D) - (II)

4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Options 1. 1

2. 2

3. 3

4. 4

Q.23 Which of the following reactions are involved in preparation of aldehydes?

(A) Gatterman-Koch reaction

(B) Etard Reaction

(C) Stephen Reaction

(D) Rosenmund Reaction

Choose the correct answer from the options given below:

1. (A), (B) and (C) only

2. (B), (C) and (D) only

3. (A), (B), (C) and (D)

4. (A), (B) and (D) only

Options 1. 1

2. 2

3. 3

4. 4

Q.24 The relative lowering of vapor pressure is equal to the

1. mole fraction of solute

2. boiling point of solvent

3. mole fraction of solvent

4. Vapor pressure of solute

Options 1. 1

2. 2

3. 3

4. 4

Q.25 Glucose reacts with Tollen's reagent (ammoniacal silver nitrate) due to the presence of

1. Ester

2. Aldehyde

3. Ketone

4. Alcoholic AgNO_3

Options 1. 1

2. 2

3. 3

4. 4

Q.26 Which of the following compound will undergo Cannizzaro reaction?

1. Methanal

2. Cyclohexanone

3. Propanal

4. Acetone

Options 1. 1

2. 2

3. 3

4. 4

Q.27 75% of a first order reaction was completed in 16 minutes. When was it half completed?

(Given: $\log(0.75) = -0.125$, $\log(0.25) = -0.602$)

1. 8 min

2. 12 min

3. 4 min

4. 32 min

Options 1. 1

2. 2

3. 3

4. 4

Q.28 Match List-I with List-II

List-I

List-II

- | | |
|-----------------------------|----------------------------------------------------------------|
| (A) Gatterman-Koch reaction | (I) $\text{CrO}_2\text{Cl}_2/\text{CS}_2$ |
| (B) Rosenmund reduction | (II) Acyl chloride and anhyd. AlCl_3 |
| (C) Etard reaction | (III) CO , HCl , $\text{AlCl}_3/\text{CuCl}$ |
| (D) Friedel Craft acylation | (IV) $\text{H}_2/\text{Pd}-\text{BaSO}_4$ |

Choose the correct answer from the options given below:

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Options

- 1
- 2
- 3
- 4

Q.29 Match List-I with List-II

List-I

List-II

Reaction

Preparation

- | | |
|-----------------------------|--------------------------|
| (A) Kolbe's Reaction | (I) Salicylaldehyde |
| (B) Reimer-Tiemann Reaction | (II) Salicylic acid |
| (C) Williamson synthesis | (III) Ethyl methyl ether |
| (D) Cumene Process | (IV) Phenol |

Choose the correct answer from the options given below:

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (II), (B) - (I), (C) - (III), (D) - (IV)
- (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Options

- 1
- 2
- 3
- 4

Q.30 Which structure of proteins gives rise to fibrous and globular proteins?

- Primary Structure
- Secondary Structure
- Tertiary Structure
- Quaternary Structure

Options

- 1
- 2
- 3
- 4

Q.31 If the solubility of the given gases in water decreases in the order of formaldehyde, methane, vinyl chloride, argon. Match List-I with List-II.

List-I

List-II

Gas

(K) $\frac{\text{H}}{\text{k bar}}$

- | | |
|--------------------|-----------------------------|
| (A) Formaldehyde | (I) 40.3 |
| (B) Vinyl Chloride | (II) 0.413 |
| (C) Argon | (III) 1.83×10^{-5} |
| (D) Methane | (IV) 0.611 |

Choose the correct answer from the options given below:

- (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
- (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
- (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
- (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Options

- 1
- 2
- 3
- 4

Q.32 The function of the enzymes in various chemical reactions:

1. Increase activation energy
2. Biochemical enhancers
3. Decreases the rate of reaction
4. Act as biological catalysts

Options 1. 1

2. 2
3. 3
4. 4

Q.33 The units of rate constant of four reactions are given below. Arrange them in the increasing order of reaction.

(A) s^{-1}

(B) $\text{mol L}^{-1}\text{s}^{-1}$

(C) $\text{mol}^{1/2}\text{L}^{-1/2}\text{s}^{-1}$

(D) $\text{L}^{1/2}\text{mol}^{-1/2}\text{s}^{-1}$

Choose the correct answer from the options given below:

1. (A), (B), (C), (D)
2. (D), (A), (C), (B)
3. (B), (A), (D), (C)
4. (B), (C), (A), (D)

Options 1. 1

2. 2
3. 3
4. 4

Q.34 Ethanoic acid can be converted into ethanol using reagent

1. Sn + HCl
2. Na and $\text{C}_2\text{H}_5\text{OH}$
3. LiAlH_4 in H_2O
4. H_2 and Pt

Options 1. 1

2. 2
3. 3
4. 4

Q.35 Calculate the molality of 25 g of ethanoic acid (CH_3COOH) in 250 g benzene

1. $16.64 \text{ mol kg}^{-1}$

2. $1.664 \text{ mol kg}^{-1}$

3. $166.4 \text{ mol kg}^{-1}$

4. 6.64 mol kg^{-1}

Options 1. 1

2. 2
3. 3
4. 4

Q.36 _____ is the rate of a reaction at a particular moment of time.

1. Order of reaction
2. Average rate
3. Instantaneous rate
4. Rate constant

Options 1. 1

2. 2
3. 3
4. 4

Q.37 The order of increasing boiling point for the following compounds is

- (A) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$
- (B) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
- (C) $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$
- (D) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$

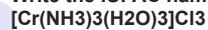
Choose the correct answer from the options given below:

1. (A), (B), (C), (D)
2. (A), (C), (B), (D)
3. (A), (C), (D), (B)
4. (C), (B), (D), (A)

Options 1. 1

2. 2
3. 3
4. 4

Q.38 Write the IUPAC name for the coordination compound:



1. triamminetriaquachromium (III) chloride
2. triaquatrimminechromium (III) chloride
3. tris(amminetriaqua)chromium (III) chloride
4. triamine-tris(aqua)chromium (III) chloride

Options 1. 1

2. 2
3. 3
4. 4

Q.39 50 g of ethylene glycol ($\text{C}_2\text{H}_6\text{O}_2$) is mixed with 900 g of water. The freezing point of the solution will be (K_f of water = $1.86 \text{ K kg mol}^{-1}$)

1. 271.49 K

2. 270.15 K

3. 269.52 K

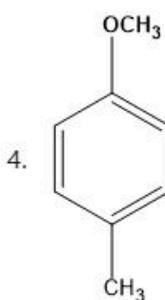
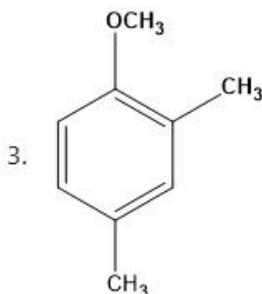
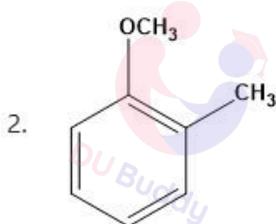
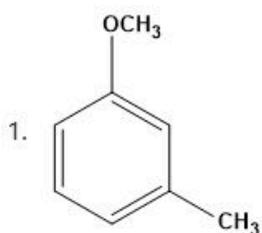
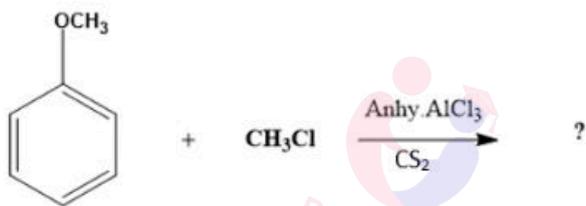
4. 273.15 K

Options 1. 1

2. 2
3. 3
4. 4

Q.40

The major product of the following reaction is



Options 1. 1

2. 2

3. 3

4. 4

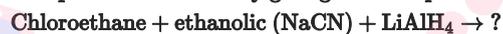
Q.41 Read the passage carefully and answer the questions

Amines are considered to be derivatives of ammonia obtained by replacement of hydrogen atoms with alkyl or aryl groups.

They are usually prepared from nitro compounds, halides, amides, imides etc. The presence of hydrogen bonding influences its physical properties. In alkylamines, a combination of electron releasing steric and hydrogen bonding factors influences the stability of substituted ammonium cations in protic polar solvents and thus affects the basic nature of amines. Alkyl amines are found to be stronger bases than ammonia which is more basic than water. Primary and secondary amines are engaged in intermolecular association due to hydrogen bonding. This intermolecular association is more in primary amines than in secondary amines. Tertiary amines do not have intermolecular association due to the absence

of hydrogen atom available for hydrogen bonding. Thus, the boiling point of amines depends on hydrogen bonding. In aromatic amines, electron releasing and withdrawing groups increase and decrease their basic character. Aryl diazonium salts usually obtained from arylamine undergo replacement of the diazonium group with a variety of nucleophile. Their coupling reaction of aryl diazonium salts with phenol or arylamine results in formation of dyes.

Complete the reaction by giving the final product:



1. $\text{CH}_3\text{CH}_2\text{NH}_2$
2. $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$
3. $\text{CH}_3\text{CH}_2\text{CN}$
4. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CN}$

- Options
1. 1
 2. 2
 3. 3
 4. 4

Q.42 Read the passage carefully and answer the questions

Amines are considered to be derivatives of ammonia obtained by replacement of hydrogen atoms with alkyl or aryl groups. They are usually prepared from nitro compounds, halides, amides, imides etc. The presence of hydrogen bonding influences its physical properties. In alkylamines, a combination of electron releasing steric and hydrogen bonding factors influences the stability of substituted ammonium cations in protic polar solvents and thus affects the basic nature of amines. Alkyl amines are found to be stronger bases than ammonia which is more basic than water. Primary and secondary amines are engaged in intermolecular association due to hydrogen bonding. This intermolecular association is more in primary amines than in secondary amines. Tertiary amines do not have intermolecular association due to the absence of hydrogen atom available for hydrogen bonding. Thus, the boiling point of amines depends on hydrogen bonding. In aromatic amines, electron releasing and withdrawing groups increase and decrease their basic character. Aryl diazonium salts usually obtained from arylamine undergo replacement of the diazonium group with a variety of nucleophile. Their coupling reaction of aryl diazonium salts with phenol or arylamine results in formation of dyes.

The most basic species in the following is

1. NH_2^-
2. H_2O
3. OH^-
4. NH_3

- Options
1. 1
 2. 2
 3. 3
 4. 4

Q.43 Read the passage carefully and answer the questions

Amines are considered to be derivatives of ammonia obtained by replacement of hydrogen atoms with alkyl or aryl groups. They are usually prepared from nitro compounds, halides, amides, imides etc. The presence of hydrogen bonding influences its physical properties. In alkylamines, a combination of electron releasing steric and hydrogen bonding factors influences the stability of substituted ammonium cations in protic polar solvents and thus affects the basic nature of amines. Alkyl amines are found to be stronger bases than ammonia which is more basic than water. Primary and secondary amines are engaged in intermolecular association due to hydrogen bonding. This intermolecular association is more in primary amines than in secondary amines. Tertiary amines do not have intermolecular association due to the absence of hydrogen atom available for hydrogen bonding. Thus, the boiling point of amines depends on hydrogen bonding. In aromatic amines, electron releasing and withdrawing groups increase and decrease their basic character. Aryl diazonium salts usually obtained from arylamine undergo replacement of the diazonium group with a variety of nucleophile. Their coupling reaction of aryl diazonium salts with phenol or arylamine results in formation of dyes.

Carbylamine reaction is used as a test for

1. Primary aliphatic amine
2. Primary aliphatic and aromatic amine
3. Secondary aliphatic amine
4. Secondary aromatic amine

Options 1. 1

2. 2

3. 3

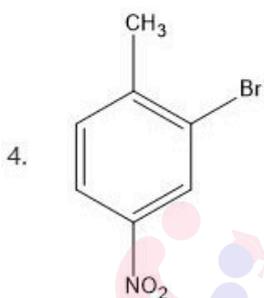
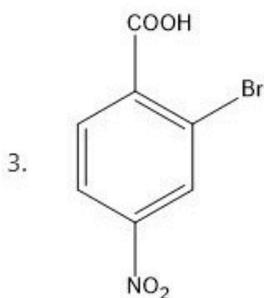
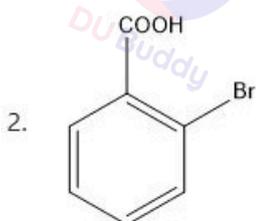
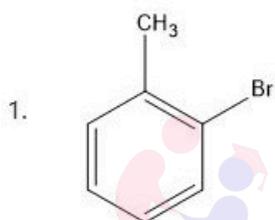
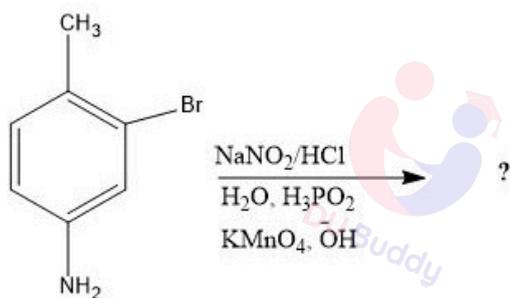
4. 4

Q.44 Read the passage carefully and answer the questions

Amines are considered to be derivatives of ammonia obtained by replacement of hydrogen atoms with alkyl or aryl groups.

They are usually prepared from nitro compounds, halides, amides, imides etc. The presence of hydrogen bonding influences its physical properties. In alkylamines, a combination of electron releasing steric and hydrogen bonding factors influences the stability of substituted ammonium cations in protic polar solvents and thus affects the basic nature of amines. Alkyl amines are found to be stronger bases than ammonia which is more basic than water. Primary and secondary amines are engaged in intermolecular association due to hydrogen bonding. This intermolecular association is more in primary amines than in secondary amines. Tertiary amines do not have intermolecular association due to the absence of hydrogen atom available for hydrogen bonding. Thus, the boiling point of amines depends on hydrogen bonding. In aromatic amines, electron releasing and withdrawing groups increase and decrease their basic character. Aryl diazonium salts usually obtained from arylamine undergo replacement of the diazonium group with a variety of nucleophile. Their coupling reaction of aryl diazonium salts with phenol or arylamine results in formation of dyes.

Complete the following reaction:



Options 1. 1

2. 2

3. 3

4. 4

Q.45 Read the passage carefully and answer the questions

Amines are considered to be derivatives of ammonia obtained by replacement of hydrogen atoms with alkyl or aryl groups.

They are usually prepared from nitro compounds, halides, amides, imides etc. The presence of hydrogen bonding influences its physical properties. In alkylamines, a combination of electron releasing steric and hydrogen bonding factors influences the stability of substituted ammonium cations in protic polar solvents and thus affects the basic nature of amines. Alkyl amines are found to be stronger bases than ammonia which is more basic than water. Primary and

secondary amines are engaged in intermolecular association due to hydrogen bonding. This intermolecular association is more in primary amines than in secondary amines. Tertiary amines do not have intermolecular association due to the absence of hydrogen atom available for hydrogen bonding. Thus, the boiling point of amines depends on hydrogen bonding. In aromatic amines, electron releasing and withdrawing groups increase and decrease their basic character. Aryl diazonium salts usually obtained from arylamine undergo replacement of the diazonium group with a variety of nucleophile. Their coupling reaction of aryl diazonium salts with phenol or arylamine results in formation of dyes.

Which of the following compounds will not undergo azo coupling with benzene diazonium chloride?

1. Anisole
2. Phenol
3. Aniline
4. Nitrobenzene

Options 1. 1

2. 2
3. 3
4. 4

Q.46 Read the passage carefully and answer the questions

Electrochemistry is the study involving two types of processes. One type involves the production of electricity from the energy released during a spontaneous chemical reaction. Galvanic cells like Daniel cells are used to produce electricity from the redox reaction. Nernst equation of a galvanic cell gives the relation between the standard cell potential and the concentration of the species involved in the redox reaction. The second type of study involves the cells in which electrical energy is used to bring about the chemical reactions in a non-spontaneous process. The conductance of electrolytic solution depends on many factors including the nature of the electrolyte and the dimensions of the electrolytic cell.

The conductivity of ionic electrolytic solutions does not depend on:

1. Concentration of electrolyte.
2. Viscosity of solvent.
3. Solvation of ion.
4. Pressure.

Options 1. 1

2. 2
3. 3
4. 4

Q.47 Read the passage carefully and answer the questions

Electrochemistry is the study involving two types of processes. One type involves the production of electricity from the energy released during a spontaneous chemical reaction. Galvanic cells like Daniel cells are used to produce electricity from the redox reaction. Nernst equation of a galvanic cell gives the relation between the standard cell potential and the concentration of the species involved in the redox reaction. The second type of study involves the cells in which electrical energy is used to bring about the chemical reactions in a non-spontaneous process. The conductance of electrolytic solution depends on many factors including the nature of the electrolyte and the dimensions of the electrolytic cell.

What is the SI unit of conductivity?

1. $S\ m^{-1}$

2. $\Omega\ m$

3. $S\ m$

4. $\Omega\ m^{-1}$

Options 1. 1

2. 2
3. 3
4. 4

Q.48 Read the passage carefully and answer the questions

Electrochemistry is the study involving two types of processes. One type involves the production of electricity from the energy

released during a spontaneous chemical reaction. Galvanic cells like Daniel cells are used to produce electricity from the redox reaction. Nernst equation of a galvanic cell gives the relation between the standard cell potential and the concentration of the species involved in the redox reaction. The second type of study involves the cells in which electrical energy is used to bring about the chemical reactions in a non-spontaneous process. The conductance of electrolytic solution depends on many factors including the nature of the electrolyte and the dimensions of the electrolytic cell.

Faraday's laws of electrolysis are related to:

1. Speed of cation
2. Equivalent mass of electrolyte
3. Atomic number of anion
4. Atomic number of cation

Options 1. 1

2. 2
3. 3
4. 4

Q.49 Read the passage carefully and answer the questions

Electrochemistry is the study involving two types of processes. One type involves the production of electricity from the energy released during a spontaneous chemical reaction. Galvanic cells like Daniel cells are used to produce electricity from the redox reaction. Nernst equation of a galvanic cell gives the relation between the standard cell potential and the concentration of the species involved in the redox reaction. The second type of study involves the cells in which electrical energy is used to bring about the chemical reactions in a non-spontaneous process. The conductance of electrolytic solution depends on many factors including the nature of the electrolyte and the dimensions of the electrolytic cell.

When KCl is dissolved in water, the Potassium ion is;

1. Oxidized
2. Reduced
3. Hydrated
4. Hydrolyzed

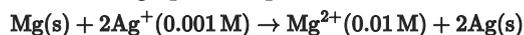
Options 1. 1

2. 2
3. 3
4. 4

Q.50 Read the passage carefully and answer the questions

Electrochemistry is the study involving two types of processes. One type involves the production of electricity from the energy released during a spontaneous chemical reaction. Galvanic cells like Daniel cells are used to produce electricity from the redox reaction. Nernst equation of a galvanic cell gives the relation between the standard cell potential and the concentration of the species involved in the redox reaction. The second type of study involves the cells in which electrical energy is used to bring about the chemical reactions in a non-spontaneous process. The conductance of electrolytic solution depends on many factors including the nature of the electrolyte and the dimensions of the electrolytic cell.

The following equation represents the reaction taking place in a Galvanic cell:



Calculate its E_{cell} at 298 K if $E_{\text{cell}}^{\circ} = 2.91\text{ V}$.

1. 2.79 V
2. 2.96 V
3. 3.21 V
4. 1.52 V

Options 1. 1

2. 2
3. 3
4. 4