Chem - KCET - 12

# Question 1

If a solution prepared by dissolving 1.0 g of polymer of molar mass 185,000 in 450 mL of water at 37°C, calculate the osmotic pressure in Pascal exerted by it?

1. 31
2. 30
3. 32
4. 33

# Question 2

Heptane and octane form an ideal solution. At 373 K, the vapour pressures of the two liquid components are 105.2 kPa and 46.8 kPa respectively. What will be the vapour pressure of a mixture of 26.0 g of heptane and 35 g of octane?

1. 74.3 kPa
2. 73.43 kPa
3. 76.42 kPa
4. 79.50 kPa

# Question 3

At 300 K, 36 g of glucose present in a litre of its solution has an osmotic pressure of 4.98 bar. If the osmotic pressure of the solution is 1.52 bars at the same temperature, what would be its concentration?

1. 0.061 mol
2. 0.063 mol
3. 0.065 mol
4. 0.070 mol

# Question 4

100 g of liquid A (molar mass 140 g mol) was dissolved in 1000 g of liquid B (molar mass 180 g mol–1). The vapour pressure of pure liquid B was found to be 500 torrs. Calculate the vapour pressure of pure liquid A and its vapour pressure in the solution if the total vapour pressure of the solution is 475 Torr.

1. 281.7 torr
2. 290.8 torr
3. 260.7 torr
4. 280.7 torr

# Question 5

An aqueous solution of hydrochloric acid:

1. Obeys Raoult’s law
2. Shows negative deviation from Raoult’s law
3. Shows positive deviation from Raoult’s law
4. Obeys Henry’s law at all compositions

# Question 6

of a non- electrolyte solute (molar mass ) was dissolved in of benzene. If the freezing point depression constant, of benzene is , the freezing point of benzene will be lowered by:

# Question 7

The solubility of the gas in a liquid solution \_\_\_\_\_ with increase in temperature.

1. Decreases
2. Increases
3. Remains same
4. None of these

# Question 8

When a non volatile solute is added to a pure solvent, the :

1. Vapour pressure of the solution becomes lower then that of the pure solvent
2. Rate of evaporation of the pure solvent is reduced
3. Solute does not effect the rate of condensation
4. Rate of the evaporation of the solution is equal to the rate of condensation of the solution at a lower vapour pressure than that in the case of the pure solvent

# Question 9

Effect of adding a non-volatile solute to a solvent is:

1. To lower the vapour pressure
2. To increase its boiling point
3. Both (A) and (B)
4. To decrease its osmotic pressure

# Question 10

Which of the following is ’NOT’ a colligative property ?

1. Elevation in boiling point
2. Depression in freezing point
3. Osmotic pressure
4. Lowering of vapour pressure

# Question 11

When a solute is present in trace quantities. It is convenient to express concentration in:

1. Mass by volume percentage
2. Mole fraction
3. Mass percentage
4. Parts per million

# Question 12

What happens when a solute crystal is added to a supersaturated solution?

1. It becomes a colloidal solution
2. The solute dissolves in the solution
3. The solution desaturates
4. The solute precipitates out of the solution

# Question 13

Which of the following is a true solution?

1. Salt solution
2. Ink
3. Blood
4. Starch solution

# Question 14

The expression relating molality and mole fraction of solute in a solution is:

# Question 15

On increasing temperature, vapour pressure of a substance \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. always increases.
2. decreases.
3. does not depend on temperature.
4. partially depends on temperature.

# Question 16

of Urea (Mol. wt 60) was dissolved in moles of water. If the vapour pressure of pure water is , the vapour pressure of solution is:

# Question 17

Which of the following colligative properties can provide molar mass of proteins (or polymers or colloids) with greater precision:

1. Relative lowering of vapour pressure
2. Elevation of boiling point
3. Depression in freezing point
4. Osmotic pressure

# Question 18

Cryoscopic constant of a liquid is:

1. Decrease in freezing point when 1 gram of solute is dissolved per kg of the solvent.
2. Decrease in the freezing point when 1 mole of solute is dissolved per kg of the solvent.
3. The elevation for 1 molar solution
4. factor used for calculation of elevation in boiling point

# Question 19

Van’t Hoff factor, when benzoic acid is dissolved in benzene, will be:

# Question 20

Which of the following solvents would most likely dissolve 3-Aminopropan-1-ol?

1. CHOH
2. CHOH
3. HO
4. CHCOCH

# Question 21

Given below are the half-cell reactions:The for will be:

1. ; the reaction will not occur
2. ; the reaction will occur
3. ; the reaction will not occur
4. ; the reaction will occur

# Question 22

Silver is uniformly electro-deposited on a metallic vessel of surface area of by passing a current of ampere for 2 hours. Calculate the thickness of silver deposited. (Given : the density of silver is and atomic mass of )

# Question 23

for the reaction, at is . The equilibrium constant for the reaction is:

# Question 24

How much electricity in terms of Faraday is required to produce of Ca from molten

1. 1F
2. 2F
3. 3F
4. 5F

# Question 25

Current in an electrolyte is carried by \_\_\_\_\_\_\_\_.

1. only electrons
2. only -ve ions
3. only +ve ions
4. both +ve and -ve ions

# Question 26

is not stable and undergoes disproportionation. for disproportionation is :Given standard reduction potentials,

# Question 27

\_\_\_\_\_\_\_ is an application of electrolysis.

1. Oxidation
2. Electrotyping
3. Electric shielding
4. Electric polishing

# Question 28

The concentration of potassium ions inside a biological cell is at least twenty times higher than the outside. The resulting potential difference across the cell is important in several processes such as the transmission of nerve impulses and maintaining the ion balance. A simple model for such a concentration cell involving a metal is: molar molar For the above electrolytic cell the magnitude of the cell potential .For the above cell:

# Question 29

Standard electrode potentials of and are and respectively. The standard electrode potential for is:

# Question 30

Maintenance-free batteries, now in use, in place of common batteries, have:

1. Electrodes made of lead-lead oxide
2. Electrodes made of calcium-containing lead alloy
3. Non-aqueous solvents as medium
4. Platinum electrodes

# Question 31

An acid is a substance that produces \_\_\_\_\_\_\_\_\_ ions in a water solution.

1. oxygen
2. nitrogen
3. carbon
4. hydrogen

# Question 32

The filament resistance of the bulb is \_\_\_\_\_\_\_\_ to its resistance when it is not glowing.

1. greater
2. lower
3. equal
4. none of above

# Question 33

An example of the secondary battery cell is:

1. Edison Alkaline cell
2. Daniel cell
3. Lachanche cell
4. Bunsencell

# Question 34

What happens when the lead storage battery is discharged?

1. is evolved
2. Lead sulphate is consumed
3. Lead is formed
4. is consumed

# Question 35

The tarnishing of silver ornaments in the atmosphere is due to:

# Question 36

The approximate time duration in hours to electroplate of calcium from molten calcium chloride using a current of is:[Atomic mass of ]

1. 8
2. 80
3. 10
4. 16

# Question 37

The charge carriers in metallic conductors and in electrolytes are respectively:

1. Both ions
2. Both electrons
3. Electrons and ions
4. Ions and electrons

# Question 38

Which of the following is not a characteristic feature of a salt bridge?

1. Salt bridge joins the two halves of an electrochemical cell
2. It completes the inner circuit
3. It is filled with a salt solution (or gel)
4. It does not maintain electrical neutrality of the electrolytic solutions of the half-cells

# Question 39

What is the direction of flow of electrons in an electrolytic cell?

1. Anode to cathode externally
2. Anode to cathode internally
3. Cathode to anode externally
4. Cathode to anode in the solution

# Question 40

Which of the following statements regarding primary cells is false?

1. Primary cells cannot be recharged
2. They have low internal resistance
3. They have an irreversible chemical reaction
4. Their initial cost is cheap

# Question 41

Which of the following compounds has the highest boiling point?

1. RF
2. RCl
3. RBr
4. RI

# Question 42

Which of the following compounds is an allyl bromide?

1. CHBr
2. CHCHCHBr
3. CH=CHCHCHBr
4. CH=CHCHCHCHBr

# Question 43

Groove’s method is used for the preparation of:

1. All of these

# Question 44

Flourobenzene can be synthesised in the laboratory:

1. A by heating phenol with and
2. from aniline by diazotisation followed by heating the diazonium salt with
3. by direct fluorination of benzene with gas
4. by reacting with solution

# Question 45

When alkyl halide is heated with dry , it produces \_\_\_\_\_\_.

1. ester
2. ether
3. ketone
4. alcohol

# Question 46

The process of converting alkyl halides to alcohols involve:

1. Addition reaction
2. Rearrangement reaction
3. Substitution reaction
4. Dehydrohalogenation reaction

# Question 47

Which of the following is an example of aryl alkyl halide?

1. P-chlorotoluene
2. Chlorobenzene
3. Allyl chloride
4. Benzyl chloride

# Question 48

 What is the IUPAC name of the following compound?<a href="https://www.sanfoundry.com/wp-content/uploads/2020/02/chemistry-questions-answers-nomenclature-q2.png">![image](data:text/html; charset=UTF-8;base64,)</a>

1. 1-Bromo-3-methylprop-2-ene
2. 3-Bromo-1-methylpropene
3. 1-Bromobut-2-ene
4. 4-Bromobut-2-ene

# Question 49

In the common naming system, the prefix sym- is used for haloarenes with \_\_\_\_\_ halogen atoms.

1. 1
2. 2
3. 3
4. 4

# Question 50

How many carbon atoms does Isobutyl chloride have in its parent carbon chain?

1. 2
2. 3
3. 4
4. 5

# Question 51

Addition of accelerates the hydrolysis of primary alkyl halides because:

1. is soluble in organic solvents
2. The iodide ion is a weak base and a poor leaving group
3. The iodide ion is a strong base
4. The iodide ion is a powerful nucleophile as well as a good leaving group

# Question 52

In the following pair of compounds, which of the following relation is correct for nucleophilicity in a polar-protic solvent?

1. None of these

# Question 53

The correct order of reactivity of following alkyl halides for reaction is:

# Question 54

A mono haloarene is an example of \_\_\_\_\_\_\_\_\_\_.

1. aliphatic halogen compound
2. side-chain substituted aryl halide
3. alkyl halide
4. aromatic halogen compound

# Question 55

What do you get by heating a mixture of hexanol and concentrated aqueous hydrogen chloride?

1. Cyclochlorohexane
2. Chlorohexane
3. Phosphorus acid
4. No reaction

# Question 56

Which of the following haloalkanes is most reactive?

1. 1-chloropropane
2. 1-bromopropane
3. 2-chloropropane
4. 2-bromopropane

# Question 57

The reaction of benzene with chlorine in the presence of iron gives:

1. Benzene hexachloride
2. Chlorobenzene
3. Benzyl chloride
4. Benzoyl chloride

# Question 58

\_\_\_\_\_\_\_\_\_\_\_\_.

# Question 59

Which of the following has the highest boiling point?

# Question 60

In isomeric alkyl halides:

1. The branch chain isomer have relatively high boiling point as compared to its straight chain isomer
2. The branch chain isomer have relatively low boiling point as compared to its straight chain isomer
3. The branch chain isomer boiling point equal to its straight chain isomer
4. None of these