CHEMISTRY

BOOKS - ACCURATE PUBLICATION

MODEL TEST PAPER-9

Section A Mcq

1. Osmotic pressure of a solution is 0.0821 atm at temperature of 300 K. The concentration of solution in $mol/litre$ will be

A. 0.33

B. 0.666

C. 0.3×10^{-2}

D. 3

Answer:

▶ **Watch Video Solution**

2. The standard emf of a galvanic cell involving

cell reaction with n = 2 is formed to be . 0.295

V at $25^\circ C$. The equilibrium constant of the reaction would be :

A. 1.0×10^{10}

B. 2.0×10^{11}

C. 4.0×10^{12}

D. 1.0×10^{2}

Answer:

3. Solubility of gas in liquid depends upon

A. The nature of gas

B. the temperature

C. the nature of the solvent

D. All of the above

Answer:

▶ **Watch Video Solution**

4. The hotness of an object is determined by its_____

5. Which property is used for determination of molar mass of colloids, polymers and proteins

    A. Diffusion pressure

    B. Atmospheric pressure

    C. osmotic pressure
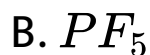
D. turgor pressure

Answer:

6. Which of the following fluorides does not exist:

A. NF_5

B. PF_5

C. AsF_5

D. SbF_5

Answer:

▶ **Watch Video Solution**

---

7. Dehydration of tertiary alcohols with Cu at 573 K gives:

A. Aldehydes

B. ketones

C. alkenes

D. None of these

Answer:

▶ **Watch Video Solution**

8. Which one is strongest basic ?

A. ammonia

B. methylamine

C. ethylamine

D. none of these

Answer:
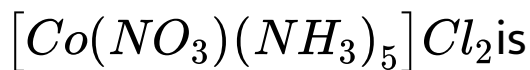
9. Zr and Hf have same atomic and ionic radii

because

    A. both are in same group

    B. of diagonal relationship

    C. Of lanthanides contraction

    D. None of these

Answer:

10. The IUPAC name for the complex $[Co(NO_3)(NH_3)_5]Cl_2$ is

   A. Cyclopentadienyl iron (II)

   B. Bis (cyclopentadienyl) iron (II),

   C. Dicyclopentadienyl ferrate (II)

   D. Ferrocene

Answer:

11. A reagent used for identifying nickel ion is :

    A. Potassiymferrocyanide

    B. Phenolphthalin

    C. Dimethylglyoxime

    D. EDTA

Answer:

12. The strongest acid among the following

compound is

    A. HCOOH

    B. CH_3COOH

    C. $(CH_3)_3CHCOOH$

    D. $(CH_3)_3\mathbb{C}OOH$

Answer:

13. Write a chemical test to distinguish between phenol and benzoic acid.

A. Tollen's reagent

B. Molisch reagent

C. Neutral ferric chloride

D. Aqueous sodium hydroxide

Answer:

14. The coldness of an object is determined by its_____

15. Why boiling of water cannot be measured through a clinical thermometer?

16. No medium is required for the transfer of heat by the process of_____.

17. Which of the statements about "Denaturation" given below are correct ?

(A) Denaturation of proteins causes loss of secondary and tertiary structures of the protein.

(B) Denturation leads to the conversion of

double strand of DNA into single strand

(C) Denaturation affects primary structure which gets distorted

Options:

A. (B) and (C)

B. (A) and (C)

C. (A) and (B)

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

Answer:

18. The presence or absence of hydroxyl group on which carbon atom of sugar differentiates RNA and DNA ?

A. 1st

B. 2nd

C. 3rd

D. 4th

Answer:

1. The particles of colloidal solution possess electrical charge which is responsible for the stability of these solutions. The charge on colloidal particles arises because of selective adsorption of ions which are common with their own lattice. The presence of charge on colloidal part!cles can be determined with the help of phenomenon known as electrophoresis. However, when some

electrolyte is added, the charge on the particles of dispersed phase gets neutralized and precipitation takes place. This process is also called coagulation. The coagulation is given by Hardy Schulze rules. According to these rules the ions carrying the charge opposite to that of sol particles are effective and coagulating power of an electrolyte is directly proportional to the fourth power of the valency of the ion. Coagulation can also occur by mutual precipitation, by electrophoresis, by persistent dialysis or by heating or cooling.

Which charge is responsible for stability of colloidal particles ?

2. The particles of colloidal solution possess electrical charge which is responsible for the stability of these solutions. The charge on colloidal particles arises because of selective adsorption of ions which are common with their own lattice. The presence of charge on colloidal part!cles can be determined with the

help of phenomenon known as electrophoresis. However, when some electrolyte is added, the charge on the particles of dispersed phase gets neutralized and precipitation takes place. This process is also called coagulation. The coagulation is given by Hardy Schulze rules. According to these rules the ions carrying the charge opposite to that of sol particles are effective and coagulating power of an electrolyte is directly proportional to the fourth power of the valency of the ion. Coagulation can also occur by mutual precipitation, by

electrophoresis, by persistent dialysis or by heating or cooling.

What is electrophoresis ?

 Watch Video Solution

3. The particles of colloidal solution possess electrical charge which is responsible for the stability of these solutions. The charge on colloidal particles arises because of selective adsorption of ions which are common with their own lattice. The presence of charge on

colloidal part!cles can be determined with the help of phenomenon known as electrophoresis. However, when some electrolyte is added, the charge on the particles of dispersed phase gets neutralized and precipitation takes place. This process is also called coagulation. The coagulation is given by Hardy Schulze rules. According to these rules the ions carrying the charge opposite to that of sol particles are effective and coagulating power of an electrolyte is directly proportional to the fourth power of the valency of the ion. Coagulation can also

occur by mutual precipitation, by electrophoresis, by persistent dialysis or by heating or cooling.

What is precipitation ?

▶ **Watch Video Solution**

4. A cold steel spoon is dipped in a cup of hot milk. It transfer heat to its other end by the process of _____.

▶ **Watch Video Solution**

5. Why we use good quality plastic containers for heating the food in a microwave and not any metal made utensil?

▶ **Watch Video Solution**

Section A True False

1. Why do wear light coloured clothes in summer?

▶ **Watch Video Solution**

2. The dipole moment of CH_3F is larger than that of CH_3Cl.

▶ **Watch Video Solution**

3. Why we prefer to wear dark coloured clothes in winters?

▶ **Watch Video Solution**

4. tert -butyl alcohol is more soluble in water than n- butyl alcohol.

5. Clothes of _____ coloured absorb heat better as compared to light coloured clothes.

Section B Short Answer

1. Plastic and wood are _____ conductors of heat.

> ▶ **Watch Video Solution**

2. Aluminium, iron and steel are _____ conductors of heat.

> ▶ **Watch Video Solution**

3. Define chelate and chelating ligand. Give one example of chelate complex.

4. Unit of rate constant for zero order reaction is

5. Out of the following objects, mention which are good conductors of heat and which are bad conductors of heat- iron rod, aluminium sheet, plastic container, wooden table, steel spoon.

▶ **Watch Video Solution**

6. In places of hot climate it is advised that the outer walls of the house should be painted white. Why?

7. How you can tell that water is neutral?

8. Calculate the mass of a non-volatile solute (molar mass 40g mol^{-1}) which should be dissolved in 114g octane to reduce its vapour pressure to 80%.

9. $200 \; cm^3$ of an aqueous solution of a protein contains 1.26g of the protein . The osmotic pressure of such a solution at 300K is found to be 2.7×10^{-3} bar. Calculate the molar mass of the protein (R=0.083 L bar $mol^{-1}K^{-1}$)

▶ **Watch Video Solution**

10. Why do transition elements show variable oxidation states ? Name the element showing

maximum number of oxidation states among the first series of transition metals from Sc (Z = 21) to Zn (Z= 30).

▶ **Watch Video Solution**

11. A 1st order Reaction is 40% complete in 10 minutes. Calculate the time required for 75 % completion.

▶ **Watch Video Solution**

12. In a reaction when the concentration of reactants is double, the rate of reaction becomes 8 times. What is order ofreaction ?

13. Is photosynthesis is a chemical change or a physical change?

14. How does O_3 react with KNO_2

> ▶ Watch Video Solution

15. How does O_3 react with HCl

> ▶ Watch Video Solution

16. How does O_3 react with SO_2

> ▶ Watch Video Solution

17. How does O_3 react with HCl

▶ **Watch Video Solution**

18. SO_2 has acidic character. Explain.

▶ **Watch Video Solution**

19. State whether the statement given is true or false- Dissolving sugar in water is a chemical change

20. Balance the following equation : Na + O2 → Na2O

21. Show that relative lowering in vapour pressure is a colligative property

Section C Long Answer Questions

1. How will you convert cumene into phenol.

▶ **Watch Video Solution**

2. How will you convert

phenol into aspirin

▶ **Watch Video Solution**

3. How will you convert:

Chlorobenzene to DDT

4. The process of rearing of silkworms for obtaining silk is called_____.

5. Write esterification reaction.

6. Write cross aldol condensation.

7. The half life period for radioactive decay of ^{14}C is 5670 years. An archaeological artifact contained wood had only 80 % the ^{14}C found in a living tree. Estimate the age of the sample.
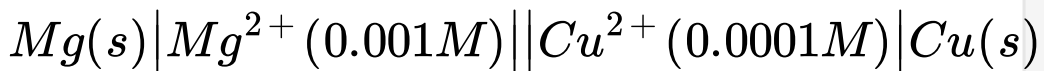
8. The leaves on which a silkworm feeds on are called_____.

9. Write Nernst equation and calculate e.m.f. of the cell at 298 k.

$$Mg(s)|Mg^{2+}(0.001M)||Cu^{2+}(0.0001M)|Cu(s)$$

10. Why fluorine shows-1 oxidation state only whereas other halogens show variable oxidation states ?

> ▶ **Watch Video Solution**

1. Why Chlorobenzene is less reactive than CH_3CI towards SN reactions?

> ▶ **Watch Video Solution**

2. Write distinguish test between- 3- bromo-1-propene and 1- bromopropane.

3. Difference between S_N1 and S_N2 reaction ?

4. How will you convert :

$$C_2H_5Br + KOH(aq) \rightarrow$$

5. How will you convert :

$$C_2H_5Br + KOH(alc) \rightarrow$$

6. How will you convert :

$$C_2H_5Br + KNO_2(aq) \rightarrow$$

▶ **Watch Video Solution**

7. How will you convert :

$$C_2H_5Cl + KCN \rightarrow$$
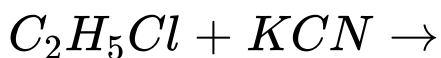
▶ **Watch Video Solution**

8. How will you convert :

$$C_2H_5Br + AgNO_2 \rightarrow$$
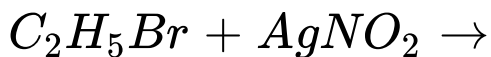
▶ **Watch Video Solution**

9. Transition metals formlarge number of

complex compounds.Explain.

▶ **Watch Video Solution**

10. Most of the compounds of transition elements are paramagnetic in nature. Explain.

▶ **Watch Video Solution**

11. Write the general electronic configuration of lanthanoids.

▶ **Watch Video Solution**

12. What are the main consequences of lanthanoid contraction ?

13. Co(II) is stable in aqueous solution, but in presence of complexing reagent it is easily oxidised. Explain.