CHEMISTRY

BOOKS - KUMAR PRAKASHAN KENDRA CHEMISTRY (GUJRATI ENGLISH)

SOME BASIC CONCEPTS OF CHEMISTRY

Section A Questions 1 1 Importance Of Chemistry

1. Give the importance of chemistry.

A.

B.

C.

D.

Answer:

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Section A Questions 1 2 Nature Of Matter

1. Define about nature of matter.

A.

B.

C.

D.

Answer:

2. Classify matter according to physical state.

A.

B.

C.

D.

Answer:

3. Describe the characteristics due to different physical state of mater.

A.

B.

C.

D.

Answer:

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4. Explain classification of matter based on chornical properties. (Macrosopic)

A.

B.

C.

D.

Answer:

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5. Define mixture and its types.

A.

B.

C.

D.

Answer:

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6. Write about element.

A.

B.

C.

D.

Answer:

7. Write about compound.

A.

B.

C.

D.

Answer:

1. Write down properties of matter.

A.

B.

C.

D.

Answer:

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2. Write note about The International system of units (SI).

A.

B.

C.

D.

Answer:

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3. What is the SI unit of mass ? How is it defined ?

A.

B.

C.

D.

Answer:

4. Match the following prefixes with their multiples :

Prefixes   Multiples

(i) micro 10^6

(ii) deca 10^9

(iii) mega 10^{-6}

(iv) giga 10^{-15}

(v) femto 10

A.

B.

C.

D.

Answer:

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5. Define Mass and Weight.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

6. Write about Density.

A.

B.

C.

D.

Answer:

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7. Write about matter Properties of Temperature.

A.

B.

C.

D.

Answer:

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1. Explain Scientific Notation method of measurement.

A.

B.

C.

D.

Answer:

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2. Express the following in the scientific notation :

(i) 0.0048

(ii) 234,000

(iii) 8008

(iv) 500.0

(v) 6.0012

A.

B.

C.

D.

Answer:

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3. Write down significant figures.

A.

B.

C.

D.

Answer:

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4. Write about significant figures.

A.

B.

C.

D.

Answer:

> ▶ View Text Solution

5. What do you mean by significant figures ?

A.

B.

C.

D.

Answer:

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6. How many significant figures are present in the following ?

(i) 0.0025 (ii) 208 (iii) 5005

(iv) 126.000 (v) 500.0 (vi) 2.0034

A.

B.

C.

D.

Answer:

7. Round up the following upto three significant figures :

(i) 34.216 (ii) 10.4107

(iii) 0.04597 (iv) 2808

A.

B.

C.

D.

Answer:

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8. How many significant figures should be present in the

answer of the following calculations ?

(i) $\dfrac{0.02856 \times 298.15 \times 0.112}{0.5785}$

(ii) 5×5.364

(iii) $0.0125 + 0.7864 + 0.0215$

A.

B.

C.

D.

Answer:

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9. Define Dimensional Analysis.

A.

B.

C.

D.

Answer:

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Section A Questions 1 5 Law Of Chemical Combinations

1. Define Law of Conservation of Mass.

A.

B.

C.

D.

Answer:

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2. Explain Law of Definite proportions by examples.

A.

B.

C.

D.

Answer:

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3. Explain Law of Multiple Proportions :

A.

B.

C.

D.

Answer:

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4. Gay Lussac's Law of Gaseous Volumes.

A.

B.

C.

D.

Answer:

5. It ten volumes of dihydrogen gas reacts with five volumes of dioxygen gas, how many volumes of water vapour would be produced ?

A.

B.

C.

D.

Answer:

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6. Explain Avogadro Law with figure.

A.

B.

C.

D.

Answer:

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Section A Questions 1 6 Dalton S Atomic Theory

1. Write about Dalton's Atomic Theory.

A.

B.

C.

D.

Answer:

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1. Write about Atomic mass.

A.

B.

C.

D.

Answer:

▶ View Text Solution

2. Write about Average Atomic Mass.

A.

B.

C.

D.

Answer:

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3. Write about Molecular Mass.

A.

B.

C.

D.

Answer:

▶ View Text Solution

4. Write about Formula Mass.

A.

B.

C.

D.

Answer:

▶ View Text Solution

1. Write about Mole Concept.

A.

B.

C.

D.

Answer:

▶ View Text Solution

2. Write about 'Molar Mass'.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

Section A Questions 1 9 Percentage Composition

1. Define Percentage Composition in Compound.

A.

B.

C.

D.

Answer:

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2. Empirical Formula for Molecular Formula.

A.

B.

C.

D.

Answer:

Section A Questions 1 10 Stoichiometry And Stoichiometric Calculations

1. Define stoichiometry and stoichiometric calculation.

A.

B.

C.

D.

Answer:

2. Write about Limiting Reagent.

A.

B.

C.

D.

Answer:

3. Write about Reactions in solutions and mass percentage.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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4. Write about Mole Fraction.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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5. Write about Molarity and Molality.

A.

B.

C.

D.

Answer:

Section A Problems

1. If the speed of light is $3.0 \times 10^8 ms^{-1}$, calculate the distance covered by light in 2.00 ns.

A.

B.

C.

D.

Answer:

2. Pressure is determined as force per unit area of the surface. The SI unit of pressure, pascal is as shown below :

$$1Pa = 1Nm^{-2}$$

If mass of air at sea level is $1034 gcm^{-2}$, calculate the pressure in pascal.

A.

B.

C.

D.

Answer:

3. The following data are obtained when dinitrogen and dioxygen react together to form different compounds :

	Mass of dinitrogen	Mass of dioxygen
(i)	14 g	16 g
(ii)	14 g	32g
(iii)	28 g	32 g
(iv)	28 g	80 g

(a) Which law of chemical combination is obeyed by the above experimental data ? Give its statement.

(b) Fill in the blanks in the following conversions :

(i) $1 km = $ ....$mm = $ .... pm

(ii) $1 mg =$ .... $kg =$ .... ng

(iii) $1 mL =$ ....$L =$ .... dm^3

A.

B.

C.

D.

Answer:

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4. Convert the following into basic units :

(i) 28.7 pm (ii) 15.15 pm (iii) 25365 mg

A.

B.

C.

D.

Answer:

5. Calculate molecular mass of glucose $(C_6H_{12}O_6)$ molecule.

A.

B.

C.

D.

Answer:

6. Calculate the atomic mass (average) of chlorine using the following data :

A.

B.

C.

D.

Answer:

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7. Use the data given in the following table to calculate the molar mass of naturally occuring argon isotopes :

A.

B.

C.

D.

Answer:

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8. Calculate the molar mass of the following :
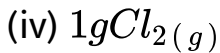
(i) H_2O

(ii) CO_2

(iii) CH_4

A.
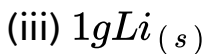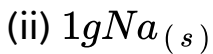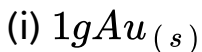
B.

C.

D.

Answer:

9. Which one of the following will have largest number of atoms ?

(i) $1gAu_{(s)}$

(ii) $1gNa_{(s)}$

(iii) $1gLi_{(s)}$

(iv) $1gCl_{2(g)}$

A.

B.

C.

D.

Answer:

10. What will be the mass of one ^{12}C atom in g ?

A.

B.

C.

D.

Answer:

11. Calculate the number of atoms in each of the following : (i) 52 moles of Ar (ii) 52 u of He (iii) 52 g of He

A.

B.

C.

D.

Answer:

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12. A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is 98.96g. What are its empirical and molecular formulas ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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13. Determine the empirical formula of an oxide of iron which has 69.9% iron and 30.1% dioxygen by mass.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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14. Determine the molecular formula of an oxide of iron in which the mass per cent of iron and oxygen are 69.9 and 30.1 respectively.

A.

B.

C.

D.

Answer:

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15. How are 0.50 mol Na_2CO_3 and 0.50 M Na_2CO_3 different ?

A.

B.

C.

D.

Answer:

16. Calculate the molarity of a solution of ethanol in water in which the mole fraction of ethanol is 0.040. (assume the density of water to be one).

A.

B.

C.

D.

Answer:

17. Calculate the amount of water (g) produced by the combustion of 16 g of methane.

A.

B.

C.

D.

Answer:

▶ View Text Solution

18. How many moles of methane are required to produce $22gCO_2(g)$ after combustion ?

A.

B.

C.

D.

Answer:

▶ View Text Solution

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19. 50.0 kg of $N_{2(g)}$ and 10.0 kg of $H_{2(g)}$ are mixed to produce $NH_{3(g)}$. Calculate the $NH_{3(g)}$ formed. Identify the limiting reagent in the production of NH_3 in this situation.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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20. A solution is prepared by adding 2 g of a substance A to 18 g of water. Calculate the mass percent of the solute.

A.

B.

C.

D.

Answer:

21. Calculate the molarity of NaOH in the solution prepared by dissolving its 4 g in enough water to form 250 mL of the solution.

A.

B.

C.

D.

Answer:

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22. The density of 3 M solution of NaCl is 1.25 g mL^{-1}.

Calculate molality of the solution.

A.

B.

C.

D.

Answer:

23. Calculate the mass per cent of different elements present in sodium sulphate (Na_2SO_4).

A.

B.

C.

D.

Answer:

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24. Calculate the amount of carbon dioxide that could be produced when,

(i) 1 mole of carbon is burnt in air.

(ii) 1 mole of carbon is burnt in 16g of dioxygen.

(iii) 2 moles of carbon are burnt in 16 g of dioxygen.

A.

B.

C.

D.

Answer:

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25. Calculate the mass of sodium acetate (CH_3COONa)

required to make 500 mL of 0.375 molar aqueous solution.

Molar mass of sodium acetate is $82.0245 \, g mol^{-1}$.

A.

B.

C.

D.

Answer:

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26. Calculate the concentration of nitric acid in moles per litre in a sample which has a density , $1.41 \, g m L^{-1}$ and the mass per cent of nitric acid in it being 69%.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

27. How much copper can be obtained from 100 g of copper sulphate $(CuSO_4)$?

A.

B.

C.

D.

Answer:

28. In three moles of ethane (C_2H_6) calculate the following :

(i) Number of moles of carbon atoms.

(ii) Number of moles of hydrogen atoms.

(iii) Number of molecules of ethane.

A.

B.

C.

D.

Answer:

29. What is the concentration of sugar $(C_{12}H_{22}O_{11})$

in mol L^{-1} if its 20g are dissolved in enough water to

make a final volume up to 2L ?

A.

B.

C.

D.

Answer:

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30. If the density of methanol is $0.793 kg L^{-1}$, what is its volume needed for making 2.5 L of its 0.25 M solution ?

A.

B.

C.

D.

Answer:

31. A sample of drinking water was found to be severely contaminated with chloroform, $CHCl_3$ supposed to be carcinogenic in nature. The level of contamination was 15 ppm (by mass).

(i) Express this in precent by mass.

(ii) Determine the molality of chloroform in the water sample.

A.

B.

C.

D.

Answer:

32. In a reaction $A + B_2 \rightarrow AB_2$ identify the limiting reagent, if any, in the following reaction mixture.

(i) 300 atoms of A + 200 molecules of B

(ii) 2 mol A + 3 mol B

(iii) 100 atoms of A + 100 molecules of B

(iv) 5 mol A + 2.5 mol A
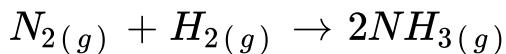
(v) 2.5 mol A + 5 mol B

A.

B.

C.

D.

Answer:

33. Dinitrogen and dihydrogen react with each other to produce ammonia according to the following chemical equation :

$$N_{2(g)} + H_{2(g)} \rightarrow 2NH_{3(g)}$$

(i) Calculate the mass of ammonia produced if $2.00 \times 10^3 g$ dinitrogen reacts with 1.00×10^3 g of dihydrogen.

(ii) Will any of the two reactants remain unreacted ?

(iii) If yes, which one and what would be its mass ?

A.

B.

C.

D.

Answer:

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34. A welding fuel gas contains carbon and hydrogen only.

Burning a small sample of it in oxygen gives 3.38 g carbon

dioxide,0.690 g of water and no other products. A volume

of 10.0 L (measured at STP) of this welding gas is found to

weight 11.6g. Calculate : (i) empirical formula, (ii) molar mass of the gas, and (iii) molecular formula.
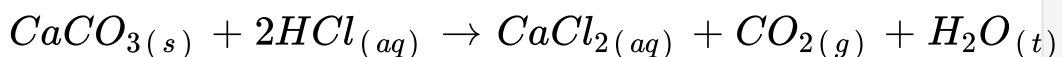
A.

B.

C.

D.

Answer:

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35. Calcium carbonate reacts with aqueous HCl to give $CaCl_2$ and CO_2 according to the reaction,

$$CaCO_{3(s)} + 2HCl_{(aq)} \rightarrow CaCl_{2(aq)} + CO_{2(g)} + H_2O_{(t)}$$

What mass of $CaCO_3$ is required to react completely with 25 mL of 0.75 M HCl ?
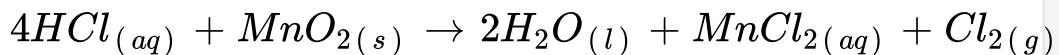
A.

B.

C.

D.

Answer:

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36. Chlorine is prepared in the laboratory by treating manganese dioxide (MnO_2) with aqueous hydrochloric acid according to the reaction :

$$4HCl_{(aq)} + MnO_{2(s)} \rightarrow 2H_2O_{(l)} + MnCl_{2(aq)} + Cl_{2(g)}$$

How many grams of HCl react with 5.0 g of manganese dioxide ?

A.

B.

C.

D.

Answer:

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Section A Try Your Self

1. Write following conversions.

$1km =$ .... $nm =$ .... dm

$1ml =$ .... $L =$ .... dm^3

A.

B.

C.

D.

Answer: $1km = 10^{12}nm = 10^4 dm$

$1ml = 0.001L = 0.001dm^3$

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2. Convert the following into basic units :

(1) 37.6 pm (2) 25.50 pm (3) 75325 mg

A.

B.

C.

D.

Answer: (1)

$3.76 \times 10^{-11}m$, $(2)2.550 \times 10^{-5}s$, $(3)7.5325 \times 10^{-2}kg$

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3. How many volume of Hydrogen chlorid form by combine with one volume of hydrogen and one volume of chloride

A.

B.

C.

D.

Answer: 2 volume

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4. How many volume of ammonia produece by combine of one volume Nitrogen and three volume of Hydrogen ?

A.

B.

C.

D.

Answer: 2 volume

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5. Find molecular mass of the following compounds.

(i) $CaCO_3$ (ii) NH_3 (iii) $NaHCO_3$

A.

B.

C.

D.

Answer: (i) 100 g/mol (ii) 17 g/mol (iii) 84 g/mol

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6. Find molceular mass of the following compounds.

(i) C_2H_5OH (ii) $C_{12}H_{22}O_{11}$ (iii) $C_6H_{12}O_6$

A.

B.

C.

D.

Answer: (i) 46 g/mol (ii) 342 g/mol (iii) 180 g/mol

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7. Find numbers of atom in the following. (i) 17 mole of As

(ii) 17 mole of Cl (iii) 17 mole of Li

A.

B.

C.

D.

Answer: The no. of atom are same in three examples.

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8. Find weight of one atom of oxygen.

A.

B.

C.

D.

Answer: 2.656×10^{-23} **gm**

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9. How many number of carbon atoms present in 250 gm

$CaCO_3$?

A.

B.

C.

D.

Answer: 15.055×10^{23} **carbon atom**

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10. Calculate mass percent of different elements present in Fe_2O_3 (Foric Oxide)

A.

B.

C.

D.

Answer: $Fe = 0.7\%$, $O = 0.3\%$

▶ View Text Solution

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11. One compoud contain 4.07%, Hydrogen 24.47% carbon and 71.65% chlorine. Its molar mass is 98.96 g. Find empirical formula and molecular formula.

A.

B.

C.

D.

Answer: Empirical formula : CH_2Cl_2,

Molecular formula $C_2H_4Cl_2$

12. In one organic compound the weight proportion of C, H and N is $9:1:3.5$ respectivily. Its molecular mass is 108 mg/mole. Find the molecular formula.

A.

B.

C.

D.

Answer: $C_6H_8N_2$

13. In one organic compound percentage of C& H are 54.55

and 9.06. What will be its epirical formula.

A.

B.

C.

D.

Answer: C_2H_4O

14. Calculate percentage of each elements of Nitroproane.

A.

B.

C.

D.

Answer:

$C = 40.45\,\% \, , H = 7.86\,\% \, , O = 35.96\,\% \, , N = 15.73\,\%$

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15. How many moles of methane is required in combustion

reaction of Methene to produce $22gCO_2$?

A.

B.

C.

D.

Answer: $0.5 \ \text{mol} \ CO_2$

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16. 4 gm NaOH dissolve in 250 ml water and solution is prepared. Find molarity of the solution.

A.

B.

C.

D.

Answer: 0.4 M

> ▶ **View Text Solution**

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17. The Density of 3 M NaCl solution is 1.259 ml. Calculate molality of solution.

A.

B.

C.

D.

Answer: 2.79 m

▶ View Text Solution

18. 5 moles of dihydrogen react with 5 moles of dinitrogen calculate the mole of Ammonia product.

A.

B.

C.

D.

Answer: 10 mol

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19. 28 gm KOH is dissolved in 90 g water. Find mole Fraction of KOH and water respectively.

A.

B.

C.

D.

Answer: Mole fraction of $KOH = 0.0909$,
Mole fraction of $H_2O = 0.909$

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20. 8 gm NaOH dissolve in 250 mL solution. This solution is diluted by using 500 ml water. Find the molartiy in' dilute solution. Also find moles of NaOH ?

A.

B.

C.

D.

Answer: 0.4 M and 0.2 mole

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21. Find the volume of O_2 at STP for combustion of 4 gm

Methane ?

A.

B.

C.

D.

Answer: 11.2 litre

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22. How much gm water required to prepare 10% w/w

solution of HCl by dissolving 36.5 gm HCl.

A.

B.

C.

D.

Answer: 328.5 gm

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23. How many gm of NaOH required to prepare 10% w/v 100 mL NaOH solution ?

A.

B.

C.

D.

Answer: 30 gm

24. Calculate molarity of 28% w/w H_2SO_4 solution. Density of H_2SO_4 solution is $1.202 gmL^{-1}$.

A.

B.

C.

D.

Answer: Molarity of $H_2SO_4 = 3.43M$

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Section B Objective Questions

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1. What is one kilogram ?

    A.

    B.

    C.

    D.

Answer:

2. What is molar mass ?

A.

B.

C.

D.

Answer:

3. When the Normality and Molarity is same ?

A.

B.

C.

D.

Answer:

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4. By change of which factors physical state of matter change ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

5. Give SI unit of Luminous intensity.

A.

B.

C.

D.

Answer:

6. What is one amu or u ?

A.

B.

C.

D.

Answer:

7. What is concentration of solution ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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8. State definition of meter.

A.

B.

C.

D.

Answer:

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9. Which substance is used in refrigerator instead of CFC ?

A.

B.

C.

D.

Answer:

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10. What is green chemistry ?

A.

B.

C.

D.

Answer:

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11. Give name of two drugs used in treatment of cancer.

A.

B.

C.

D.

Answer:

▶ View Text Solution

12. State the mass of one atom of hydrogen.

A.

B.

C.

D.

Answer:

> ▶ View Text Solution

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13. Define solute and solvent.

A.

B.

C.

D.

Answer:

> ▶ View Text Solution

14. State the unit of concentration.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

15. How the chemistry is associated with nature ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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16. Alloys are which type of mixture ?

A.

B.

C.

D.

Answer:

> ▶ **View Text Solution**

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17. Which units are used to measure fraction of mass ?

A.

B.

C.

D.

Answer:

> ▶ **View Text Solution**

18. What is mole ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

19. Bywhich instrument atomic mass is measured ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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20. $343K = \text{.......} \,^{\circ}F.$

A.

B.

C.

D.

Answer:

⏵ **View Text Solution**

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21. What is $\% \, W/W$?

A.

B.

C.

D.

Answer:

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22. In aqueous solution of $Al_2(SO_4)_3$ concentration of Al^{+3} is 1.8 M then what is the concentration of SO_4^{-2} ?

A.

B.

C.

D.

Answer:

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23. State the mass of oxygen in 0.1 mole $Na_2CO_3 \cdot 10H_2O$.

A.

B.

C.

D.

Answer:

▶ View Text Solution

24. Balance the equation.

(i) $Cu_2S + O_2 \rightarrow Cu_2O + SO_2$

(ii) $Ca_3(PO_4)_2 + 2H_2SO_4 \rightarrow Ca(H_2PO_4)_2 + CaSO_4$

A.

B.

C.

D.
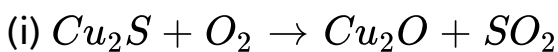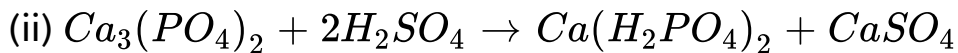
Answer:

▶ View Text Solution

25. Equivalent weight of X is 9. The vapour density of chloride salt is 66.75 state vulency of X.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

---

26. Boiling point of water in Fahrenheit ?

A.

B.

C.

D.

Answer:

---

27. 10^{-6} is the prefix for ....

A.

B.

C.

D.

Answer: Micro

28. Total mole fraction of solution is ....

A.

B.

C.

D.

Answer: One

▶ **View Text Solution**

---

29. What is the mass of one molecule of methane ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

---

30. Molecular mass of phosphoric acid is a 98 gm/mol state Atomic mass of 'P'.

A.

B.

C.

D.

Answer:

---

31. 5M H_2SO_4 1 lit a solution is diluted by adding 10 lit water. State the normality of solution ?

A.

B.

C.

D.

Answer:

32. 52% water is in mixture of alochol and water state mole fraction ethanol.

A.

B.

C.

D.

Answer:

▶ View Text Solution

33. Hydrogen and Oxygen both are gas. Which compound is formed by combination of these two ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

34. state the name of method for measurement ?

A.

B.

C.

D.

Answer:

> ▶ **View Text Solution**

---

35. State the unit of temperature with explanation.

A.

B.

C.

D.

Answer:

> ▶ **View Text Solution**

36. Give the calculation of following :

(i) $\left(6.7 \times 10^4\right) \times \left(8.4 \times 10^7\right)$ (ii) $\dfrac{\left(3.4 \times 10^{-3}\right)}{\left(6.5 \times 10^{-7}\right)}$

A.

B.

C.

D.

Answer:

▶ View Text Solution

37. Calculate :

(i) 8.56×10^6 and 10.64×10^5 addition

(ii) 3.33×10^{-3} and 5.80×10^{-4} substraction

A.

B.

C.

D.

Answer:

▶ View Text Solution

38. State significant figure in 7.964×10^3.

A.

B.

C.

D.

Answer: Four

⊙ **View Text Solution**

39. State seconds for 4 day.

A.

B.

C.

D.

Answer:

40. Give percentage of P in H_3PO_4.

A.

B.

C.

D.

Answer:

41. What is limiting reagent ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

42. Give the measureent of amount in chemistry.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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43. What is stoichiometry ?

A.

B.

C.

D.

Answer:

> ▶ View Text Solution

44. Which laws give information about Dalton's atomic theory ? According to Dalton's atomic theory which other laws give information about atomic principle.

A.

B.

C.

D.

Answer:

---

45. By which method atomic mass is obtained accurately ?

A.

B.

C.

D.

Answer:

46. State fundamental particle of matter ?

A.

B.

C.

D.

Answer:

▶ View Text Solution

47. Which drug is used for treatment of AIDS ?

A.

B.

C.

D.

Answer: AZT

▶ **View Text Solution**

48. What is element ?

A.

B.

C.

D.

Answer:

49. Give method to convert solid into gas.

A.

B.

C.

D.

Answer:

50. Which mixture is separated by physical method ?

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

---

51. Give law of multiple proportion ?

A.

B.

C.

D.

Answer:

Section C Multiple Choice Questions Mcqs Darpan S Exam Oriented Mcqs

1. Which one is not included in branch of chemistry ?

    A. Organic

    B. industrial

    C. Biochemistry

    D. Natural chemistry

Answer: A::C::D

2. .... Is used in tratment of cancer.

A. Paracctamol

B. Taxol

C. Aspirine

D. Peniciline

Answer: A::B

3. Which one used instead of CFC in refrigerator ?

A. 1, 1, 2, 2 Tetrachloroethane

B. Chloroform

C. 1, 1, 1, 2 Tetrachloroethane

D. CCl_4

Answer: A::B::C

▶ **View Text Solution**

4. Which one is not element ?

A. Diamond

B. Graphite

C. Silica

D. Oxygen

Answer: A::C

▶ **View Text Solution**

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5. State unit of velocity ?

A. m^2

B. ms^{-2}

C. m^2s^{-1}

D. ms^{-1}

Answer: A::D

6. $293K = \ldots\ldots\ldots \, °F.$

    A. 273

    B. 68

    C. 293

    D. 77

Answer: B

7. At the same condition of temperature, pressure and volume the ration mass of O_2, O_3 and SO_2 is ....

    A. $2:1.3:1$

    B. $2:3:4$

    C. $4:2:1$

    D. $1:2:2$

Answer: A::B::C

▶ **View Text Solution**

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8. State the molecules of 1 liter slight less water ?

    A. 18

B. 18×1000

C. N_A

D. $55.55 N_A$

Answer: A::D

▶ **View Text Solution**

9. The mass of one atom of C^{12} = ...

A. $1.992648 \times 10^{23} gm$

B. 6.022×10^{23} gm

C. $1.992648 \times 10^{-23} gm$

D. none of these

Answer: A::B::C::D

10. Mass proportion of H and O in H_2O is ....

    A. $1.008:16$

    B. $16:3.008$

    C. $1.008:8$

    D. $8:1.008$

Answer: A::C

11. $H_2C_2O_4 \cdot 2H_2O$ its molecular mass ....

   A. 90 u

   B. 126 u

   C. 124 u

   D. 136 u

Answer: A::B

▶ **View Text Solution**

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12. % of H in H_2O is ....

   A. 11.11

   B. 88.89

C. 2

D. 20

Answer: A

13. How much water required to convert 1 N 100 mL

Glucose to 0.1 N ?

A. 1000

B. 10

C. 1100

D. 900

Answer: D

---

14. The empirical formula of compound is CH. It molecular mass is $78gm/\text{mole}^{-1}$. Its molecular formula ....

A. C_2H_2

B. C_6H_6

C. C_2H_4

D. C_2H_6
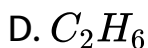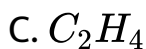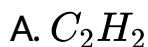
Answer: B::C

15. The molarity of 2 mole HCl in 5 lit aq. solution is ....

A. 10

B. 2.5

C. 0.4

D. 4

Answer: C::D

> ▶ **View Text Solution**

16. 0.01 mole sucrose dissolve in .... Litre water so it becomes 0.01 solution.

A. 1

B. 0.0001

C. 1000

D. 0.01

Answer: A

▶ **View Text Solution**

17. 100 ml 0.1 M urea solution is diluted upto 200 ml than the molarity is ....M.

A. 0.2

B. 0.1

C. 0.05

D. 0.025

18. The formula for calculation of percentage of nitrogen in NH_3 is ....

A. $\dfrac{7 \times 100}{14}$

B. $\dfrac{7 \times 100}{17}$

C. $\dfrac{3 \times 100}{14}$

D. $\dfrac{14 \times 100}{17}$

Answer: D

19. One atomic mass unit is how much in comparison of

C^{12}?

A. $\dfrac{1}{2}$

B. $\dfrac{1}{12}$

C. 12

D. 2

Answer: B

20. 2 mole solute dissolve in 500 g solven molarity of solution is ....

   A. 2.5

   B. 1

   C. 4

   D. 0.1

Answer: C::D

▶ **View Text Solution**

21. 4.9 gm/lit of H_2SO_4 is given .... Is normality

   A. 0.2

B. 20

C. 10

D. 0.1

Answer: A::D

▶ View Text Solution

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22. $3NH_3PO_4$ aqu. solution is given $=$ .... gm/litre.

A. 98

B. 298

C. 33

D. 95

Answer: A

23. In which solution 1 mole acid in 1 litre give 1 N solution ?

A. H_2SO_4

B. H_3PO_3

C. HNO_3

D. H_3PO_4
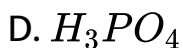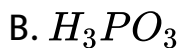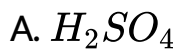
Answer: C

24. At what temperature $^{\circ}C = {}^{\circ}F$

    A. -30°

    B. -40°

    C. -20°

    D. Not possible

Answer: B::D

▶ **View Text Solution**

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25. By reduction of 1.27 gm Cu is obtained so what is the

weight of oxygen.

    A. 16 gm

B. 8 gm

C. 1.6 gm

D. 0.16 gm

Answer: A::D

▶ **View Text Solution**

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26. The boiling point of water $= \ldots\ldots\ldots\ldots^{\circ}F$.

A. 210

B. 212

C. 373

D. -40

Answer: A::B

27. In H_2O and H_2O_2 mass oxygen

    A. $1:2$

    B. $2:1$

    C. $32:16$

    D. $1:8$

Answer: A::B

28. Molarity of 2N aqu. solution of $Ca(OH)_2$ is .... M.

A. 1

B. 2

C. $\dfrac{1}{2}$

D. 4

Answer: A

▶ View Text Solution

29. How many grams of Glucoose in 10% w/v 400 ml solution ?

A. 40

B. 2.5

C. 4

D. 4000

Answer: A::D
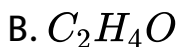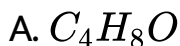
▶ View Text Solution

30. % of H in $CH_3COOH = $ ....

A. 40

B. 6.66

C. 10

D. 15

Answer: B

31. The empirical formula of compound is C_2H_4O if its molecular mass is $88g \ \text{mol}^{-1}$ than its molecular formula is ....

    A. C_4H_8O

    B. C_2H_4O

    C. $C_4H_8O_2$

    D. $C_4H_2O_8$
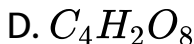
Answer: B::C::D

32. Molality is for ....

    A. 1 litre solution

    B. 1 kg solution

    C. 1 g solvent

    D. 1 kg solute

Answer: A::C

33. The mass of oxygen in N_2O_3 and N_2O_5 is respectively

....

A. 48,48

B. 80,48

C. 48,80

D. 60,48

Answer: C::D

> ▶ **View Text Solution**

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34. No. of unit in SI system $=$ ....

A. 5

B. 7

C. 11

D. 12

Answer: B

> ▶ **View Text Solution**

35. The law of conservation of mass is given by study of which reaction ....

    A. combustion

    B. fusion

    C. endothermic

    D. vaporization

Answer: A::B::C

36. The atomic mass is with respect to mass of ....

    A. C^{12}

    B. C^{13}

    C. C^{14}

    D. C^{16}

Answer: A::C::D

37. At which temperature kelvin and $^\circ C$ are same ?

A. 273

B. -40

C. -273

D. Not possible

Answer: B::D

▶ **View Text Solution**

38. The number of neutron in 540 gm water

A. $240 \times N_A$

B. $30 \times N_A$

C. $540 \times N_A$

D. $18 \times N_A$

Answer: A::B::D

> ▶ View Text Solution

39. The percentage of nitrogen in urea

    A. 0.46

    B. 0.28

    C. 0.85

    D. 0.64

Answer: A::D

> ▶ View Text Solution

40. The number of molecule in 4.4 gmCO_2 ....

    A. 6.022×10^{21}

    B. 6.022×10^{22}

    C. 6.022×10^{23}

    D. 6.022×10^{-17}

Answer: A::B

▶ **View Text Solution**

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41. According to whom chemistry is the science of 100 elements ?

A. Lavoisier

B. Dalton

C. Roald Hoffman

D. Avogadro

Answer: A::C::D

> ▶ **View Text Solution**

42. The purpose of chemistry can be understood and described by............

A. fundamental particles

B. atoms

C. molecules

D. all of the above

Answer: A::B::C::D

▶ **View Text Solution**

43. Which branch is not included in the branches of chemistry ?

A. Organic chemisrty

B. Industrial chemistry

C. Biochemistry

D. Natural chemistry

Answer: A::C::D

---

44. Which is not an element ?

A. Carbon

B. Sodium

C. Oxygen

D. NaCl

Answer: A::C::D

45. Chemistry is a science of .... of the substance.

A. composition

B. structure

C. properties

D. all of the above

Answer: A::B::C::D

▶ **View Text Solution**

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46. Chemistry is not useful in ....

A. digestion of food

B. functioning of brain

C. gravitational force

D. operation of computer

Answer: A::C

> ▶ **View Text Solution**

47. Which compounds are included in chemistry ?

A. Natural

B. Semisynthetic

C. Synthetic

D. All of the above

Answer: A::B::C::D

48. What will be volume of 8 M solution containing 1 mole solute ?

    A. 150 mL

    B. 125 mL

    C. 100 mL

    D. 175 mL

Answer: A::B

49. .... used in refrigerator is hazardous to ozone layer.

A. CFC

B. CMC

C. CNC

D. FCC

Answer: A::C

▶ **View Text Solution**

50. Nowadays in refrigerator .... is used which is less hazardous..

A. CFC

B. HFC

C. CNG

D. CNC

Answer: B::C

▶ **View Text Solution**

51. Which chemistry is involed in production of chemicals without damaging the environment ?

A. Yellow chemistry

B. Ideal chemistry

C. Green chemistry

D. Pure chemistry

Answer: C

⏵ **View Text Solution**

52. What is Matter ?

A. All substances

B. Chemical substances

C. Anything that has mass and occupies space

D. All of the above

Answer: A::C::D

⏵ **View Text Solution**

53. .... is the type of matter based on physical state of matter.

    A. Element

    B. Gas

    C. Compound

    D. Mixture

Answer: A::B

▶ View Text Solution

54. In which state matters have definite volume and definite shape ?

    A. Soild

    B. Liquid

    C. Gaseous

    D. All of the above

Answer: A::D

▶ **View Text Solution**

55. In which state of matter do not have definite volume and definite shape ?

A. Solid

B. Liquid

C. Gaseous

D. All of these

Answer: B::D

▶ **View Text Solution**

56. .... has liquid state at STP.

A. H_2

B. Br_2

C. O_2

D. Fe

Answer: B

▶ **View Text Solution**

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57. In which substance the elements presents in them show new type of properties by losing their own properties ?

A. CO_2

B. H_2O

C. NaCl

D. All of the above

Answer: A::B::C::D

● View Text Solution

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58. .... is made up of same kind of atoms.

A. Element

B. Compound

C. Mixture

D. All of above

Answer: A

● View Text Solution

59. In which substance the constituents retains their own characteristic properties ?

A. Brass

B. Glucose

C. Rusting of iron

D. Water

Answer: A::B

▶ **View Text Solution**

60. In which mixture the different entities of mixture can be separated from borderline surface ?

A. NaCl and H_2O

B. NaCl and Fe

C. Sugar solution

D. None of these

Answer: A::B::C::D

> ▶ **View Text Solution**

61. The component of mixture can be seperated by ....

A. filtration

B. crystalization

C. distillation

D. all of the above

Answer: A::B::C::D

▶ **View Text Solution**

62. From the following which option state mixture and compound respectively ?

A. Sugar solution, Salt solution

B. O_2, H_2O

C. Lemon juice, NH_3

D. H_2, H_2O_2

Answer: C

63. The value of physical quantity is always equal to the multiple of numerical value and the....

A. mass

B. volume

C. unit

D. weight

Answer: C

64. The units which are obtained from basic units are called ....

    A. derived units

    B. mathematical units

    C. significant figures

    D. modern units

Answer: A::D

▶ **View Text Solution**

65. Which is not a system of units for physical quantities ?

    A. PPM

B. FPS

C. SI

D. CGS

Answer: A

▶ **View Text Solution**

66. IUPAC and IUPAP have recommended .... system to use uniformly.

A. SI

B. UI

C. FPS

D. MKS

Answer: A

▶ **View Text Solution**

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67. How is the SI system ? OR

Properties of SI system are ....

     A. uniform

     B. universally acceptable

     C. standard

     D. all of the above

Answer: A::B::C::D

68. What is the SI unit for mass of substance ?

A. Mole

B. Weight

C. Mass

D. kg

Answer: D

69. What is the SI unit for amount of substance ?

A. Mole

B. Weight

C. Mass

D. kg

Answer: A

▶ **View Text Solution**

70. What is the symbol for SI unit for electric current ?

A. s

B. Amp

C. A

D. Cd

Answer: A::C

⏵ **View Text Solution**

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71. Candela is the unit of ....

A. polarisation of light

B. luminous intensity

C. luminous temperature

D. refraction of light

Answer: B

⏵ **View Text Solution**

72. Which cylinder is used to define standard mass in kilogram ?

A. Pt-Pd

B. Pt-I

C. Pt-Pd

D. Pt-Ir

Answer: D

▶ **View Text Solution**

73. Give the unit of volume in SI system.

A. $(\text{meter})^3$

B. $(\text{cm})^3$

C. $(\text{inch})^3$

D. $(\text{dm})^3$

Answer: A::C

> ▶ **View Text Solution**

74. .... Common unit is used for volume.

A. $(\text{meter})^3$

B. litre

C. pascal

D. atmosphere

Answer: B

75. The SI unit of temperature is ....

A. $^{\circ}C$

B. $^{\circ}F$

C. K

D. all of the above

Answer: C

76. What is the use of burette in laboratory ?

A. To measure volume

B. To measure density

C. To measure weight

D. To measure viscosity

Answer: A

▶ **View Text Solution**

77. .... is not a unit of density.

A. kgm^{-3}

B. gcm^{-3}

C. $mgcm^{-3}$

D. $\dfrac{mg}{cm^{-3}}$

Answer: D

▶ **View Text Solution**

78. What is the relation between K and $^\circ C$?

A. $K = {}^\circ C + 273$

B. $^\circ C = K - 273$

C. $\dfrac{K - {}^\circ C}{273} = 1$

D. All of the above

Answer: A::B::C::D

⊙ **View Text Solution**

79. What is the boiling point of water in degree farenheit ?

A. 210

B. 212

C. 373

D. none

Answer: A::B

⊙ **View Text Solution**

80. The meter (unit of length) was redefined in 1983 by
....

A. CGPM

B. GCPM

C. CGMP

D. GCMP

Answer: A::C

▶ **View Text Solution**

81. Why alloy of Pt-Ir was chosen for SI unit (mass & length) ?

    A. It is cheap metal

    B. It is highly resistant to chemical attack

    C. It is radioactive

    D. It gets charged with change in time

Answer: A::B::C

▶ **View Text Solution**

82. Which temperature is used as a stanadard referance on a Pt-Ir bar to define meter ?

A. $0°C$

B. 273 K

C. $32°F$

D. All of above

Answer: A::B::C::D

▶ **View Text Solution**

83. What is used to express derived unit obtained from SI unit for smaller or larger quantities ?

A. Multiple unit

B. Prefix

C. Proper power

D. None of these

Answer: B

▶ **View Text Solution**

84. Matter can neither be created nor destroyed. This statement was given by....

A. Henery

B. Dalton

C. Lavoisier

D. Hoffman

Answer: A::C

85. Give the ration of Cu in Natural & Synthetic sample of cupric carbonate.

   A. $1:1$

   B. $1:1.5$

   C. $1:2$

   D. $2:1$

Answer: A

86. Who studied the proportion of elements in $CuCO_3$?

A. Joseph proust

B. Lavoisier

C. Dalton

D. Graham

Answer: A

▶ View Text Solution

87. Give the proportion of Hydrogen & Oxygen in water ?

A. $1.008 : 8$

B. 8 : 1.008

C. 1.008 : 8

D. 3.008 : 16

Answer: A

▶ **View Text Solution**

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88. Which principle states that "A given compound always contains exacly the same proportion of elements by weight" ?

    A. Law of conservation of mass

    B. Law of constant proportions

C. Law of multiple proportion

D. All of the above

Answer: A::B::C

▶ **View Text Solution**

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89. What is the proportion of oxygen in H_2O and H_2O_2 ?

A. $1:2$

B. $2:1$

C. $32:16$

D. $1:8$

Answer: A::B

90. According to law of combining weights if Na, O and Cl form NaCl and Cl_2O, then which one will be the third compound ?

A. NaO_2

B. Na_2O_2

C. Na_2O
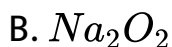
D. All of the above

Answer: A::B::C

91. Who stated that "matter is composed of small indivisible particles" ?

    A. Dalton

    B. Lavoisier

    C. Hoffman

    D. John proust

Answer: A::D

▶ **View Text Solution**

92. There is no importance of Dalton's law with reference to ....

A. isotopes

B. atoms

C. molecules

D. all of the above

Answer: A

▶ **View Text Solution**

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93. 6.048 g H_2 and $28gN_2$ react with each other and produce $34.048gNH_3$. This reaction is explained by which law ?

A. Constant proportion

B. Multiple proportion

C. Combining weights

D. Charles law

Answer: A::C

▶ **View Text Solution**

94. What is the combining weight of oxygen in N_2O_3 and N_2O_5 respectively ?

A. 48, 48

B. 80, 48

C. 48, 80

D. 60, 48

95. With the help of a .... The difinite value of atomic weight of an atom can be measured.

A. mass spectrometer

B. potentiometer

C. ammetes

D. none of these

Answer: A::C

96. What is the atomic mass of oxygen ?

A. 16.5 u

B. 15.995 u

C. 17 u

D. 18 u

Answer: A::B

97. The atomic mass of one atom of C^{12} = ... g.

A. 1.992648×10^{-23}

B. 6.022×10^{23}

C. 1.992648×10^{23}

D. 1.996248×10^{-23}

Answer: A::B::C::D

▶ **View Text Solution**

98. 1 amu is .... part of atomic mass of one C atom.

A. $\dfrac{1}{2}$

B. $\dfrac{1}{12}$

C. 12

D. 2

Answer: B

> ▶ View Text Solution

99. Mass % of H in H_2O is ....

    A. 11.11

    B. 88.89

    C. 2

    D. 20

Answer: A

> ▶ View Text Solution

100. What is the formula to find percentage mass of N in NH_3 ?

A. $\dfrac{7 \times 100}{14}$

B. $\dfrac{7 \times 100}{17}$

C. $\dfrac{3 \times 100}{14}$

D. $\dfrac{14 \times 100}{17}$

Answer: D

▶ View Text Solution

101. The formula which represents the composition of molecule is called ....

    A. molecular formula

    B. empirical formula

    C. mathematical formula

    D. all of the above

Answer: A::B::C

▶ View Text Solution

102. Multiple number $(n) = $ .... $+$ formula mass of empirical formula.

A. molecular mass

B. formula mass

C. atomic mass

D. mole

Answer: A::C

⊙ **View Text Solution**

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103. One metal oxide consist 60% metal what is the proportion of oxygen ?

A. 0.6

B. 0.4

C. 0.5

D. 0.3

Answer: B::D

▶ **View Text Solution**

104. One organic compound has empirical formula C_2H_4O. If its molecular mass is $88g \ mole^{-1}$ then what will be molecular formula ?

A. C_4H_8O

B. C_2H_4O

C. $C_4H_8O_2$

D. $C_4H_2O_8$
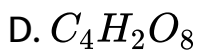
Answer: B::C::D

▶ View Text Solution

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105. What is the percentage of H in CH_3COOH ?

A. 40

B. 6.66

C. 10

D. 15

Answer: B

▶ View Text Solution

106. In one organic compound the proportion of C, H & Cl is 10%, 0.84% and 89.2 % respectively.Its empirical formula is.....

A. CCl_4

B. $CHCl_3$

C. CH_3Cl

D. CH_2Cl_2

Answer: B::C

▶ View Text Solution

107. If 1.27 g Cu is obtained by reduction of one sample of Cu_2O then the amount of oxygen in sample is .... g.

A. 16

B. 8

C. 1.6

D. 0.16

Answer: A::D

▶ View Text Solution

108.

$$Fe_2(SO_4)_3 + NH_3 + H_2O \rightarrow Fe(OH)_3 + (NH_4)_2SO_4.$$
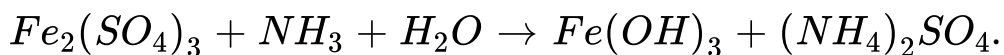
Give stoichiometric co-effcient of $Fe(OH)_3$ and $(NH_4)_2SO_4$ respectively.

A. 3, 2

B. 3, 4

C. 2, 3

D. 4, 3

Answer: B::C

▶ View Text Solution

109. $MnO_2 + KOH + O_2 \rightarrow K_2MnO_4 + H_2O$. Give the stoichiometric coefficient of reactants and products respectively.

A. 2, 4, 1, 2, 1

B. 2, 4, 1, 2, 2

C. 2, 4, 2, 1, 2

D. 2, 4, 2, 2, 2

Answer: A::B::D

▶ **View Text Solution**

110. .... is true relation for concentration. [A : Acidity]

A. $M = N \times A$

B. $N = M \times A$

C. $\dfrac{M}{N} = A$

D. $N - M = A$

Answer: A::B

▶ **View Text Solution**

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111. If molecular mass of solute base (M) & equivalent weight (E) are given the relation between Molarity (X) and Normality (Y).

A. $Y = \dfrac{X \times M}{E}$

B. $X = \dfrac{Y \times M}{E}$

C. $Y = \dfrac{X \times E}{M}$

D. $X = Y \times E \times M$

Answer: A

112. What will be the mole fraction of solution if solution cantain 0.1 mole of each A, B & C ?

A. 1.0

B. 0.3

C. 0.1

D. $\dfrac{1}{3}$

Answer: A

113. What is the normality of 4.9 g/ L solution of H_2SO_4 at $25°C$?

    A. 0.2

    B. 20

    C. 10

    D. 0.1

Answer: A::D

▶ View Text Solution

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114. Find the weight of H_3PO_4 in its 3N aqueos solution at $25°C$.

Molecular mass of H_3PO_4 = 98 g/mole.

A. 98

B. 294

C. 33

D. 95

Answer: A

▶ **View Text Solution**

115. How many grams of Glucose dissolve in 10% w/v 400

mL as solution of Glucose ?

A. 40

B. 2.5

C. 4

D. 4000

Answer: A::D

▶ **View Text Solution**

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116. 20 gm solute is dissolved in 200 g water. Find %w/w

A. 10

B. 40

C. 9.091

D. 90.91

Answer: A::C

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117. 4 g / L solutionof NaOH is given. The molarity of the solution is .... M. (Molecular mass of NaOH $=$ 40 g / mol)

    A. 160

    B. 10

    C. 0.1

    D. 4

Answer: A::C

118. How many moles of methanol are dissolved in 500 mL, 3 M aqueous solution of methanol ?

    A. 1.66

    B. 1.5

    C. 15

    D. 315

Answer: A::B

> ▶ View Text Solution

119. The g/L of 5 M aqueous solution of NaOH is ......

(Molecular mass of $NaOH : 40g$ $mole^{-1}$)

A. 200

B. 8

C. 12.5

D. 1.25

Answer: A::B

 View Text Solution

120. How many moles of solute are required in 300 g solvent to prepare 3 molal solution ?

A. 0.01

B. 1

C. 0.09

D. 0.9

Answer: D

⏵ **View Text Solution**

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121. If 2 moles of solute is dissolved in 500 g solvent then the molality of solution is ....

A. 2.5

B. 1

C. 4

D. 0.4

Answer: C::D

> ▶ **View Text Solution**

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122. Give the amount of water required to prepare 0.01 M aq. solution of 0.01 mole of sucrose.

A. 1 kg

B. 0.1 kg

C. 10000 g

D. 0.05 kg

Answer: A

123. One mole of acid is dissolved in one L, solution then from the following which acid will give 1N solution ?
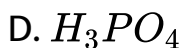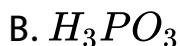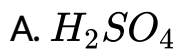
A. H_2SO_4

B. H_3PO_3

C. HNO_3

D. H_3PO_4

Answer: C

1. From the following which one is constant ?

    A. valency

    B. equivalent weight

    C. molecular mass

    D. none of these

Answer: A::C

▶ **View Text Solution**

2. What is the normality of 1 M aq solution of H_3PO_4 ?

A. 1 N

B. 4 N

C. 3 N

D. 2 N

Answer: C

▶ **View Text Solution**

3. Give the order of number of molecules in 100 mL O_2, NH_3 and CO_2 respectively at STP.

A. $O_2 < NH_3 < CO_2$

B. $NH_3 > CO_2 > O_2$

C. $O_2 < NH_3 = CO_2$

D. Equal in all three

Answer: A::B::C::D

▶ **View Text Solution**

4. 1.520 g of the hydroxide of a metal on ignition gave 0.995 g of oxide. The equivalent weight of metal is

A. 1.520

B. 0.995

C. 19.00

D. 9.00

Answer: D

5. According to which law different proportion of oxygen exist in oxides of Nitrogen ?

    A. Law of constant composition

    B. Law of combining weight

    C. Law of multiple proportion

    D. None of these

Answer: A::C

6. What is the weight of one molecule of CO_2 ? (M.wt of $CO_2 = 44g/mole$)

    A. $3.37 \times 10^{-23}g$

    B. $7.31 \times 10^{-23}g$

    C. $2.1 \times 10^{-23}g$

    D. $3.41 \times 10^{-23}g$

Answer: A::B::C

▶ View Text Solution

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7. How many atoms of gold are present in 19.7 kg of gold ?

(At wt of $Au = 197$)

A. 6.022×10^{24}

B. 6.022×10^{23}

C. 6.022×10^{25}

D. 6.022×10^{21}

Answer: A::B::C

▶ **View Text Solution**

8. Sulphur forms the chlorides S_2Cl_2 and SCl_2.The equivalent mass of sulphur in SCl_2 is

A. 8 g/mol

B. 16 g/mol

C. 64.8 g/mol

D. 32 g/mol

Answer: A::B

▶ **View Text Solution**

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9. 25 mL 3M HNO_3 and 75 mL 4 M HNO_3 solutions are mixed. Then the molarity of the resulting solution is .... M.

A. 3.5 M

B. 3.75 M

C. 3 M

D. 4.5M

Answer: B::C

▶ **View Text Solution**

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10. 74.5 g metal chloride contain 35.5 g chlorine. Then the equlvalent weight of metal is.....

A. 39

B. 74.5

C. 78

D. 19.5

Answer: A::C

11. The molecular mass of hydrogen peroxide is 34. What is the unit of molecular mass ?

    A. mole

    B. g

    C. kg /mole

    D. g /mole

Answer: D

12. 1 mole CH_4 contain....

    A. 6.022×10^{23} hydrogen gas

    B. 6.022×10^{23} atoms of hydrogen

    C. 8g molecules of hydrogen

    D. 4 g atoms of hydrogen

Answer: A::D

▶ **View Text Solution**

13. 5.85 g NaCl dissolved in 1 L solution. Find the concentration of solution.

(molecular mass of $NaCl : 58.5g/\text{mol}^{-1}$)

A. 0.1 M

B. 2 M

C. 1 M

D. 0.5 M

Answer: A

▶ **View Text Solution**

14. From the following which one has least number of molecules ?

A. $22.4 LCO_2$ at STP

B. 0.1 mole CO_2 gas

C. 22 g CO_2 gas

D. 11200 mL CO_2 at STP

Answer: A::B::C

> ▶ **View Text Solution**

15. If two compounds have same empirical formula but different molecular formula then......

A. percentage proportion of elements is diff.

B. molecular mass is different.

C. density is same

D. vapour density is same.

Answer: A::B::C::D

> ▶ View Text Solution

16. Which unit of concentration does not depends on temperature ?

    A. formality

    B. % w/v

    C. normality

    D. molality

Answer: A::D

> ▶ View Text Solution

17. From the following which one has least number of molecules ?

    A. $16gH_2O$

    B. $28gCO$

    C. $46gC_2H_5OH$

    D. $54gN_2O_5$
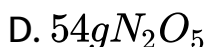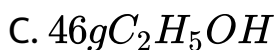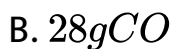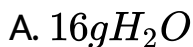
Answer: B::D

> ▶ **View Text Solution**

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18. $4.4gCO_2$ contain .... oxygen atoms.

    A. 1.2044×10^{23}

B. 1.2044×10^{22}

C. 1.68×10^{23}

D. 1.68×10^{22}

Answer: A::B::C::D

> ▶ View Text Solution

19. The normality of aqueous solution of $1MH_3PO_4$ is

....

A. 1.5 N

B. 3 N

C. 0.5 N

D. 2 N

Answer: B::C

> ▶ View Text Solution

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20. What is the volume of 1 g hydrogen gas at STP ?

A. 11.2 L

B. 22.4 L

C. 1.12 L

D. 2.24 L

Answer: A::B

> ▶ View Text Solution

21. The total number of protons in $10 g CaCO_3$ are......

    A. 3.011×10^{23}

    B. 3.011×10^{24}

    C. 3.011×10^{22}

    D. 3.011×10^{25}

Answer: A::B::C::D

▶ **View Text Solution**

22. One metal hydrogen phosphate has molecular formula $MHPO_4$ then what is formula for metal chloride ?

A. MCl

B. M_2Cl_3

C. MCl_2

D. MCl_3

Answer: B::C

▶ **View Text Solution**

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23. One amu is equal to.....

A. $\dfrac{1}{12}C^{12}$

B. $\dfrac{1}{6}C^{12}$

C. $1.001gH_2$

D. $\dfrac{1}{32} S^{32}$

Answer: A

▶ **View Text Solution**

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24. Number of g of oxygen in 32.2 g $Na_2SO_4 \cdot 10H_2O$

(Mol. $wt = 322$) is ....

    A. 16.0

    B. 2.24

    C. 18

    D. 22.4

Answer: B::D

25. The weight of 1 molecule of the compound $C_{60}H_{122}$ is...

$(N_A = 6.0 \times 10^{23})$

A. $1.4 \times 10^{-21}g$

B. $1.09 \times 10^{-21}g$

C. $5.025 \times 10^{23}g$

D. $16.023 \times 10^{23}g$

Answer: A::B::C

26. The percentage of nitrogen in urea is about......

A. 23.23

B. 46.67

C. 75

D. 37.5

Answer: B::D

▶ View Text Solution

27. The ratio of atomic mass of H and carbon is $1:3$ in one

hydrogen then its empirical formula is.....

A. CH_4

B. CH_2

C. C_2H_2

D. CH_3

Answer: A::C::D

▶ **View Text Solution**

28. The number of significant figures in 6.0023 are

A. 5

B. 4

C. 3

D. 1

Answer: A

---

29. A mixture of methyl alochol and acetone can be separated by

    A. Distillation

    B. Fractional distillation

    C. Stream distillation

    D. Distillation under reduced pressure

Answer: A::B::C::D

30. 2.5 L of 1 M NaOH solution is mixed with another 3 L solution of 0.5 M NaOH solution Then the molarity of the resulting solution is....

A. 0.560 M

B. 1.0 M

C. 0.73 M

D. 0.50 M

Answer: C

▶ View Text Solution

31. How many grams of $KMnO_4$ required for the redox reaction of 1 L of $1NMnO_4$ in acidic medium ?

    A. 31.6

    B. 78

    C. 63.2

    D. 158

Answer: A::C

▶ View Text Solution

32. $3.01 \times 10^{23} Ca^{+2}$ and CO_3^{-2} ions are present in $CaCO_3$. The mass of sample is.....

A. 40 g

B. 50 g

C. 60 g

D. 70 g

Answer: B

⊙ **View Text Solution**

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33. The atoms of 0.004 g magnesium are.....

A. 2×2^{20}

B. 6.02×10^{23}

C. 24

D. 10^{20}

Answer: A::B::D

34. 1 mole SO_2 = ...

A. $6.4 g SO_2$

B. $6.02 \times 10^{23} SO_2$ molecule

C. $22.4 L SO_2$ (NTP)

D. All of the above

Answer: A::B::C

35. 1 gram hydrogen is present in 0.0833 mole carbohydrate. The empirical formula of carbohydrate is CH_2O. What will be the molecular formula ?

A. $C_5H_{10}O_5$

B. $C_3H_4O_3$

C. $C_{12}H_{22}O_{11}$

D. $C_6H_{12}O_6$
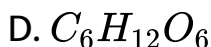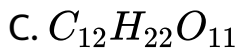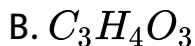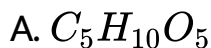
Answer: A::B::C::D

▶ View Text Solution

36. Mixture $x = 0.02$ mol of $[Co(NH_3)_5SO_4]Br$ and 0.02 mole of $[Co(NH_3)_5Br]SO_4$ was prepared in 2 L of solution.

1 litre of mixture $x +$ excess of $AgNO_3 \rightarrow y$

1 litre of mixture $x +$ excess of $BaCl_2 \rightarrow z$

Number of moles of y and z are ...

A. 0.01, 0.01

B. 0.02, 0.01

C. 0.01, 0.02

D. 0.02, 0.02

Answer: A

▶ View Text Solution

37. How much water required to convert 10 mL 10 N HNO_3 in 0.1 N HNO_3

    A. 1000 mL

    B. 990 mL

    C. 1010 mL

    D. 10 mL

Answer: B

▶ **View Text Solution**

38. Give number of H atoms in 0.046 g ethanol.

A. 6×10^{20}

B. 1.2×10^{21}

C. 3×10^{21}

D. 3.6×10^{21}

Answer: A::B::C::D

▶ **View Text Solution**

39. A bivalent metal has an equivalent mass of 32. The molecular mass of the metal nitrate is

A. 168

B. 192

C. 188

D. 182

Answer: A::C

> ▶ **View Text Solution**

40. If one organic compound has C & H respectively 92.3% and 7.7% then its empirical formula is.....

A. CH

B. CH_3

C. CH_2

D. CH_4

Answer: A::C

41. In one compound 54.55 % C, 9.09 % H and 36.36 % O are present. Its empirical formula is.....

A. C_3H_5O

B. $C_4H_8O_2$

C. $C_2H_4O_2$

D. C_2H_4O
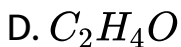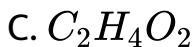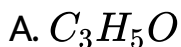
Answer: B::C::D

42. If excess CO_2 gas is passed in 0.205 mole $Ba(OH)_2$ then give the amount of $BaCO_3$ produced.

    A. 81 g

    B. 40.5 g

    C. 20.25 g

    D. 162 g

Answer: B::D

▶ **View Text Solution**

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43. 30 mL H_2 and 20 L O_2 reacts to form water then what will left at the end of reaction ?

A. 5 mL H_2

B. 5 mL O_2

C. 10 mL H_2

D. 10 mL O_2

Answer: B

▶ **View Text Solution**

44. Molar solution is equal to 1 mole solute in.....

A. 1000 g solvent

B. 1 L solvent

C. 1 L solution

D. 1000 g solution

Answer: A::C

▶ **View Text Solution**

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45. How many molecules of CO_2 is in 44 g CO_2 ?

A. 6×10^{23}

B. 3×10^{23}

C. 12×10^{23}

D. 3×10^{2}

Answer: A::B::C

▶ **View Text Solution**

46. Give moles of $50 g Al_2(SO_4)_3$ ....

A. 0.083

B. 0.952

C. 0.481

D. 0.146

Answer: A::D

▶ View Text Solution

47. How many grams of NaOH is dissolved in 2 L 0.5 NaOH aqueous solution ?

Molecular weight of NaOH : 40 g /mol.

A. 0.4 g

B. 40 g

C. 0.4 g

D. 8.0 g

Answer: B::D

▶ **View Text Solution**

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48. Normality of 0.04 M H_2SO_4 is ....

A. 0.04 N

B. 0.08 N

C. 0.02 N

D. 0.01 N

Answer: B

> ▶ **View Text Solution**

49. 4 g Cu is dissolved in concentrated HNO_3. On heating this solution 5 g oxide will be obtained Then the equivalent weight of Cu is.....

A. 23

B. 32

C. 12

D. 20

Answer: B::C

> ▶ **View Text Solution**

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50. One mole $CO_2 = $ ....

A. $3g CO_2$ molecule

B. $18.1 \times 10^{23} O_2$ molecule

C. $6.02 \times 10^{23} O$ atoms

D. $6.02 \times 10^{23} C$ atoms

Answer: A::B::C::D

> ▶ **View Text Solution**

51. Equal moles of water and urea taken in one flask. Give percentage weight of urea.

    A. $23.077\,\%$

    B. 0.77

    C. 0.7692

    D. $7.7\,\%$

Answer: B::C

▶ View Text Solution

52. 1.2046×10^{24} molecular of HCl dissolve in $1dm^3$ solution. The concentration of solution is.....

A. 6 N

B. 2 N

C. 4 N

D. 8 N

Answer: B

▶ View Text Solution

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53. 13.8 g ethyl alcohol is dissolved in 7.1 g water give the ratio of mole of ethyl alcohol and water.

A. $3:4$

B. $1:2$

C. $1:4$

D. 1:1`

Answer: A::C::D

▶ **View Text Solution**

54. The percentage of an element M is 53 in its oxide of molecular formula M_2O_3. Its atomic mass is about

A. 45

B. 9

C. 18

D. 27

Answer: D

▶ **View Text Solution**

55. A metal M of equivalent mass E froms an oxide of molecular formula M_xO_y. The atomic mass of the metal is given by the correct equation

A. $2E(y/x)$

B. xyE

C. E/y

D. y/E

Answer: A::B

▶ **View Text Solution**

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56. The number of hydrogen atoms present in 25.6 g of sucrose $(C_{12}H_{22}O_{11})$ which has a molar mass of 342.3 g is $(N_A = 6.023 \times 10^{23})$

    A. 22×10^{23}

    B. 9.91×10^{23}

    C. 11×10^{23}

    D. 44×10^{23} H atoms

Answer: A::B::C

57. How many grams of NaOH will be required to prepare

500 g solution containing 10% w/w prepare solution ?

    A. 100 gm

    B. 50 gm

    C. 0.5 gm

    D. 5.0 gm

Answer: B

58. 1.5 g of $CdCl_2$ was found to contain 0.9 g of Cd.Calculate the atomic weight of Cd.

A. 118

B. 112

C. 106.5

D. 53.25

Answer: A::C

▶ View Text Solution

59. What is the normality of 250 mL aqueous solution of H_2SO_4 having $pH = 0.00$.

A. 0.50 M

B. 0.25 N

C. 2 N

D. 1 N

Answer: A::D

▶ **View Text Solution**

60. 0.32g of metal gave on treatment with an acid 112 mL of hydrogen at STP. Calculate the equivalent weight of the metal

A. 58

B. 32

C. 11.2

D. 24

Answer: B::C

▶ View Text Solution

61. Which one of the following sets of compounds correctly illustrate the law of of reciprocal proportions.

A. P_2O_3, PH_3, H_2O

B. P_2O_5, PH_3, H_2O

C. N_2O_5, NH_3, H_2O

D. N_2O, NH_3, H_2O

Answer: A::B::C

▶ **View Text Solution**

62. If the molecular weight of H_3PO_3 is M, its equivalent weight will be

A. M

B. $M/2$

C. M/3

D. 2M

Answer: B

Section C Multiple Choice Questions Mcqs Mcqs Asked In Jee Neet Aieee

1. One organic compound has $C = 40\%$, $O = 53.34\%$ and $H = 6.60\%$ then its empirical formula is....

A. CH_2O

B. CHO

C. CH_4O_2

D. C_2H_2O
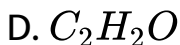
Answer: A::B::C

2. One mole of calcium phosphide on reaction with excess of water gives.

A. One mole of phosphine

B. Two moles of phosphoric acid

C. Two molesof phosphine

D. One moles of phosphine

Answer: C

3. What is the molarity of HCl solution that has a density of 1.17 g/mL at $25^\circ C$?

    A. 36.5 M

    B. 18.25 M

    C. 42.0 M

    D. 32.05 M

Answer: B::C::D

> ▶ **View Text Solution**

4. How many moles of $Mg_3(PO_4)_2$ consists 0.25 mole oxygen atoms ?

A. 2.55×10^{-2}

B. 0.0225

C. 3.125×10^{-2}

D. 1.5×10^{-2}

Answer: A::B::C

▶ **View Text Solution**

5. From the following which one has least molecules ?

A. 0.1 mole CO_2

B. $11.2 L CO_2$ at STP

C. $22 g CO_2$

D. 22.4×10^3 mL CO_2 (STP)

Answer: A::B::C

▶ **View Text Solution**

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6. 13.8 g element consist 4.6×10^{22} atoms which the atomic mass of element ?

A. 290

B. 180

C. 34.4

D. 10.4

Answer: A::B

7. In the reaction :

$$2Al_{(s)} + 6HCl_{(aq)} \rightarrow 2Al^{3+}_{(aq)} + 6\bar{Cl}_{(aq)} + 3H_{2(g)}$$
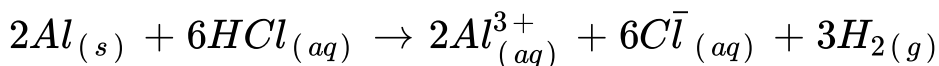
A. $6LHCL_{(aq)}$ is consumed for every 3L H_2 produced.

B. 33.6 mL $H_{2(g)}$ is produced regardless of temperature and pressure for every mole Al that reacts.

C. 67.2 $H_{2(g)}$ at STP is produced for evey mole Al that reacts.

D. 11.2 L $H_{2(g)}$ at STP is produced for every mole $HCl_{(aq)}$ consumed.

Answer: A::B::C::D

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8. The density (in g mL^{-1}) of 3.60 sulphuric acid solution that is 29 % H_2SO_4 (Molar mass $= 98gmol^{-1}$) by ,mass will be

    A. 1.64

    B. 1.88

    C. 1.22

    D. 1.45

Answer: A::B::C

9. In the reaction of sodium thiosulphate with I_2 in aqueous medium the equivalent weight of sodium thiosulphate is equal to

    A. Molar mass of sodium thiosulphate

    B. The average of molar masses of $Na_2S_2O_3$ and I_2

    C. Half the molar mass of sodium thiosulphate

    D. Molar mass of sodiu thiosulphate $\times 2$

Answer: A::D

10. What is mole fraction of methyl alochol in a 5.2 molal aqueous solution of methyl alcohol, CH_3OH.

    A. 0.1

    B. 0.19

    C. 0.086

    D. 0.05

Answer: C

▶ View Text Solution

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11. The density of a solution prepared by dissolving 120g of urea (mol .mass $= 60$ u) in 1000g of water is 1.15 g/mL

the molality of the solution is :

A. 0.50 M

B. 1.78 M

C. 1.02 M

D. 2.05 M

Answer: B::D

▶ **View Text Solution**

12. What is molarity of a solution obtained after mixing of

750 mL 0.5 M HCl and mL 2 M HCl ?

A. 0.875M

B. 1.00 M

C. 1.75 M

D. 0.975 M

Answer: A

▶ **View Text Solution**

13. Combustion of a gaseous hydrocarbon give 0.25 g water. What will be empricial formula of the hydrocarbon ?

A. C_2H_4

B. C_2H_6

C. C_3H_4

D. C_7H_8
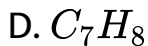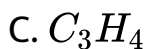
Answer: C::D

> ▶ **View Text Solution**

14. A gaseous mixture has oxygen and nitrogen in ratio of 1 : 4 by weight. What is ratio of number of molecules of them ?

A. $1 : 8$

B. $3 : 16$

C. $1 : 4$

D. $7:32$

Answer: B::C::D

> ▶ View Text Solution

15. Equal masses of H_2, O_2 and methane have been taken in a container of volume V at temperature $27°C$ in identical conditions. The ratio of the volumes of gases $H_2 : O_2 :$ methane would be

A. $8:16:1$

B. $16:8:1$

C. $16:1:2$

D. $8:1:2$

Answer: A::B::C

16. When 22.4 litres of $H_{2(g)}$ is mixed with 11.2 litres of $Cl_{2(g)}$, each at STP, the moles of $HCl_{(g)}$ formed is equal to -

    A. 1 mole of $HCl_{(g)}$

    B. 2 mole of $HCl_{(g)}$

    C. 0.5 mole of $HCl_{(g)}$

    D. 1.5 mole of $HCl_{(g)}$

Answer: A::C

17. 1.0 g of magnesium is burnt with 0.56 g O_2 in a closed vessel. Which reaction is left in excess and how much ? (At. wt. Mg $= 24, O = 16$)

    A. $Mg, 0.16g$

    B. $O_2, 0.16g$

    C. $Mg, 0.16g$

    D. $O_2, 0.28g$

Answer: A

▶ View Text Solution

18. In Carius method of estimation of halogens, 250 g of an organic compound gave 141 mg of AgBr. The percentage of bromine in the compound is : (at. Mass $Ag = 108, Br = 80$)

A. 24

B. 36

C. 48

D. 60

Answer: A::B::D

19. A hydrocarbon contains 85.7 % C. If 42 mg of the compound contains 3.01×10^{20} molecules, the molecular formula of the compound will be ......

A. $C_3 H_6$

B. $C_6 H_{12}$

C. $C_{12} H_{24}$

D. $C_2 H_4$
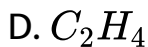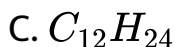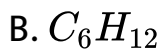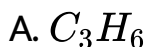
Answer: A::B::C

▶ **View Text Solution**

20. The most abundant elements by mass in the body of a healthy human adult are : Oxygen (61.4 %): Carbon (22.9 %): Hydrogen (10.0 %) and Nitrogen (2.6 %). The weight which a 75 g person would gain if all ^1H atoms are replaced by ^2H atoms is .....

A. 15 kg

B. 37.5 kg

C. 7.5 kg

D. 10 kg

Answer: C

▶ View Text Solution

21. 1 grams of a carbonate (M_2CO_3) on tratment with excess HCl produces 0.01186 mole of CO_2. The molar mass of M_2CO_3 in g mol^{-1} is .....

A. 1186

B. 84.3

C. 118.6

D. 11.86

Answer: B::C::D

▶ View Text Solution

1. Select the correct choice for given reaction after balancing.

$$4HgS + 4CaO \rightarrow 4Hg + x + CaS$$

    A. $x = HgSO_4$

    B. $x = CaSO_4$

    C. $x = HgSO_3$

    D. $CaSO_3$
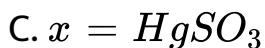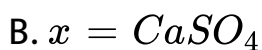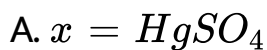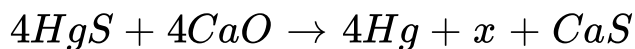
Answer: A::B::C::D

▶ View Text Solution

2. How many molecules of CO_2 will needed to obtain 1.8 g of glucose according to given reaction.

Reaction : $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$
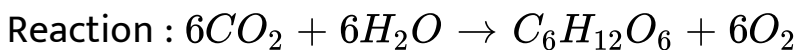
$\left[M.\, wt\, C_6H_{12}O_6 = 180 gmol^{-1} \right]$

$(C = 12, H = 1, O = 16)$

A. $0.6 \times 6.022 \times 10^{23}$

B. $6 \times 6.022 \times 10^{23}$

C. $0.06 \times 6.022 \times 10^{23}$

D. $60 \times 6.022 \times 10^{23}$

Answer: A::B::C

▶ View Text Solution

3. The concentration of Al^{3+} ion in aqueous solution of

$Al_2(SO_4)_3$ is 0.28 M

Then the concentration of SO_4^{2-}

ion in this solution will be:

    A. 0.28 M

    B. 0.042 M

    C. 0.42 M

    D. 0.84 M

Answer: B::C::D

▶ **View Text Solution**

4. On boiling 1 litre $\dfrac{N}{5}$ HCl the volume of the aqueous solution decreases to 250 mL During this reaction 3.65 g of HCl is removed from solution, then the concerntration of resulting solution becomes : $\left[HCl = 36.5 gmol^{-1}\right]$

A. $\dfrac{N}{20}$

B. $\dfrac{N}{10}$

C. $\dfrac{N}{2.5}$

D. $\dfrac{N}{5}$

Answer: C

▶ **View Text Solution**

5. The percentage of C in methanoic anhydride is ....

    A. 64.86

    B. 32.43

    C. 3.243

    D. 31.43

Answer: B::C::D

> ▶ **View Text Solution**

6. Some statements are below based on the figure. Identify true false statements.

(i) The sno. of moles of solution P and in solution - Q are equal.

(ii) The no. of gm-equivalents of solute in solution- P and solution Q-are equal.

(iii) The mole fractions of solvent in solution P and solution - Q are equal.

(iv) The concentration of $H^+_{(aq)}$ ions solution-P and solution Q are equal.

    A. FTFT

    B. FFFT

    C. FTTF

    D. FTTT

Answer: A

7. How many sulphur atoms present in 2N 500 mL of sulphuric acid ?

(At. Mass of $H = 1, S = 32, O = 16$gms/mole)

A. 1.515×10^{23}

B. 6.022×10^{23}

C. 1.5057×10^{22}

D. 3.0115×10^{23}

Answer: A::B::C::D

8. Sulphurtrioxide is prepared by following two reaction :

(i) $Cu_2S + O_2 \rightarrow Cu_2O + SO_2$

(ii) $2SO_2 + O_2 \rightarrow 2SO_3$
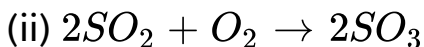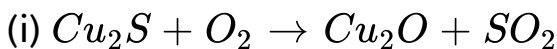
How many gram SO_3 of are produced from 159 g of Cu_2S

(Atomic mass of $Cu = 63.5, S = 32, O = 16$ g/mole)

   A. 64 g

   B. 160 g

   C. 128 g

   D. 80 g

Answer: D

▶ View Text Solution

9. How many number of molecule are there in 4.4 g of CO_2 gas ? ($C = 12, O = 16$ g/mole)

    A. 6.022×10^{21}

    B. 6.022×10^{22}

    C. 6.022×10^{24}

    D. 6.022×10^{23}

Answer: A::B

▶ **View Text Solution**

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10. Which of the following unit is derived unit ?

    A. Temperature

B. Time

C. Mass

D. Density

Answer: D

▶ **View Text Solution**

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11. Which of the following do not change with temperature ?

A. % w/v

B. Molality

C. Density

D. Molarity

Answer: A::B

▶ **View Text Solution**

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12. What degree Fahrenheit will be equivalent to 293 K ?

A. $273^\circ F$

B. $68^\circ F$

C. $293^\circ F$

D. $77^\circ F$

Answer: B

▶ **View Text Solution**

13. 25 mL 0.1 N H_2SO_4 neutralized with 20 mL $xNNa_2CO_3$. What will be the g/liter of Na_2CO_3 ?

A. 8.48 g

B. 4.24 g

C. 6.625 g

D. 13.25 g

Answer: B::C

▶ View Text Solution

14. A 0.50 g H_2SO_4 is dissolve in 0.25 L solution, so find out the normality and molarity respectively of the solution.

$(H = 1, S = 32, O = 16)$

    A. 0.040, 0.020

    B. 0.4, 0.2

    C. 0.020, 0.040

    D. 0.2, 0.4

Answer: A::B::D

▶ View Text Solution

15. The percentage of C, H and Cl in an organic compounds is 10%, 0.84%, 89.2% respectively. Find out its empirical formula.

    A. CCl_4

    B. $CHCl_3$

    C. CH_2Cl_2

    D. CH_3Cl
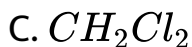
Answer: B::C

▶ **View Text Solution**

16. In following chemical reaction by taking 159 g of Cu_2S, how much gram of SO_3 produced ? (At. mass of $Cu = 63.5, S = 32, O = 16$ g/mole)

(i) $Cu_2S + O_2 \rightarrow Cu_2O + SO_2$

(ii) $2SO_2 + O_2 \rightarrow 2SO_3$
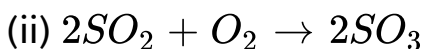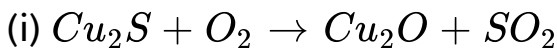
    A. 80 g

    B. 64 g

    C. 120 g

    D. 160 g

Answer: A

▶ **View Text Solution**

17. In 2M H_2SO_4 solution, what is % w/w and mole fraction of H_2SO_4 respectively ?

    A. 16.39, 0.035

    B. 19.60, 0.036

    C. 9.80, 0.96

    D. 8.20, 0.036

Answer: A::C

▶ **View Text Solution**

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18. Which of these changes with temperature ?

    A. Molality

B. Molarity

C. Mol fraction

D. % w/w

Answer: A::B

▶ **View Text Solution**

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19. What will be value of $40° C$ in Fahrenheit scale ?

A. $183° F$

B. $104° F$

C. $300° F$

D. $113° F$

Answer: A::B::D

20. For the given reaction

$$CH_{4(g)} + 2O_{2(g)} \rightarrow CO_{2(g)} + 2H_2O_{(l)}$$
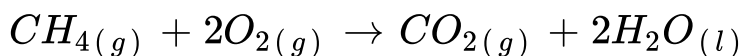
If 64 g of O_2 is used, then 44 g of CO_2 is formed.

8 g of CH_4 reacts to form 36 g of product.

22 g of CO_2 is formed from 3.011×10^{23} molecules of CH_4.

At STP, if 22.4 litres of $O_{2(g)}$ is used, then 11.2 litres of CO_2 is formed.

Which of the above statements are correct ?

A. 2, 3, 4

B. 1, 2, 3

C. 1, 3, 4

D. 1, 3

Answer: A::C::D

▶ **View Text Solution**

21. Normality of 0.2M sulphuric acid solution is ....

A. 0.4 N

B. 0.6 N

C. 0.2 N

D. 0.1 N

Answer: A::D

22. Which of the following pairs will have the same number of atoms ?

[atme wt. $H = 1, O = 16, C = 12, Cl = 35.5 gmol^{-1}$]

    A. 28 g CO and 36.5 g HCl

    B. 44 g CO_2 and 44 g CO

    C. 14 g N_2 and $28 g CO_2$

    D. $28 g N_2$ and 36.5 g HCl

Answer: A::B::C::D

23. The percentage of Carbon, Hydrogeon and Oxygen in an organic substance are 40, 6.666 and 53.34 respectively. Molecular mass of the compound is 180 g mol^{-1}. Find the value of integal number.

A. 6

B. 2

C. 1

D. 4

Answer: A

24. The percentage proportion of C, H and N in an organic compound are 62.07, 10.34 and 14.0 respectively. Find its empirical formula.

A. $C_2H_5NO_2$

B. $C_5H_{10}NO_2$

C. $C_2H_5NO_2$

D. $C_5H_{10}NO$
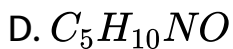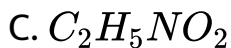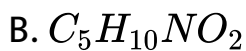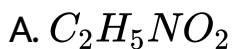
Answer: A::C::D

▶ **View Text Solution**

25. How many moles CO_2 will be produced on theremal decomposition of 25 gram ?

$CaCO_3$? $[C = 12, O = 16, Ca = 40]$

   A. 1

   B. 2

   C. 1.5

   D. 0.25

Answer: B::D

▶ View Text Solution

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26. How many protons are present in 4 g NaOH ?

A. 6.022×10^{23}

B. 12.044×10^{23}

C. 12.044×10^{24}

D. 6.022×10^{22}

Answer: A::B::C::D

▶ **View Text Solution**

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27. What will be normality of the solution of the mixture of 40 mL, 0.2 M $H_2SO_{4(aq)}$ and 60 mL $0.3MH_2SO_{4(aq)}$?

A. 0.26 N

B. 0.25 N

C. 0.5 N

D. 0.52 N

Answer: B::D

▶ **View Text Solution**

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28. How many total atoms are in 1 mole of $(NH_4)_2Cr_2O_7$?

A. 6.22×10^{23}

B. 114.47×10^{23}

C. 84×10^{23}

D. 19

Answer: A::B::C::D

29. Which prefix used in SI sysytem has coefficient 10^6 ?

A. Micro

B. Tera

C. Mega

D. Femto

Answer: A::C

30. In which of the following compounds the percentage of carbon atom is highest ?

A. $CH_3 - CH_2 - CH_3$

B. $CH_3 - CH - CH_3$
$\quad\quad\quad\quad |$
$\quad\quad\quad\quad OH$

C. $C_{12}H_{22}O_{11}$

D. CH_3COOH
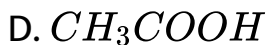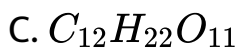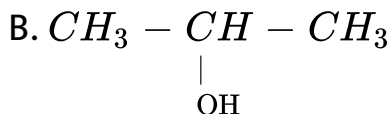
Answer: A::B::C

▶ **View Text Solution**

Section D Solutions Of Ncert Exemplar Problems Multiple Choice Questions Mcqs

1. Two students performed the same experiment separtely and each one of the recorded two readings of mass which are given below Correct reading of mass is 3.0g. On the basis of given data, mark the correct option out of the following statements

    A. Results of both the students are neither accurate nor precise.

    B. Results of student A are both precies and accurate.

    C. Results of student B are neither precise nor accurate

    D. Results of student B are both precise and accurate.

Answer: A::B::C::D

2. A measured temperature on Fahrenheit scale is $200°F$.

What will this reading be on celsius scale ?

A. $40°C$

B. $94°C$

C. $93.3°C$

D. $30°C$

Answer: C

3. What will be the molarity of a solution, which contains 5.85g of $NaCl_{(s)}$ per 500 mL ?

    A. 4 mol L^{-1}

    B. 20 mol L^{-1}

    C. 0.2 mol L^{-1}

    D. 2 mol L^{-1}

Answer: A::B::C

> ▶ **View Text Solution**

4. If 500 mL of a 5M solution is diluted to 1500 mL, what will be the molarity of the solution obtained ?

A. 1.5M

B. 1.66M

C. 0.017M

D. 1.59M

Answer: A::B

▶ **View Text Solution**

5. The number of atoms present in one mole of an element is equal to Avogadro number. Which of the following element contains the greatest number of atoms ?

A. 4g He

B. 49g Na

C. 0.40g Ca

D. 12g He

Answer: A::B::D

6. If the concentration of glucose $(C_6H_{12}O_6)$ in blood is $0.9gL^{-1}$ what will be the molarity of glucose in blood ?

A. 5 M

B. 50 M

C. 0.005 M

D. 0.5 M

Answer: C

> ▶ **View Text Solution**

7. What will be the molarity of the solution containing 18.25 g of HCl gas in 500 g of water ?

A. 0.1 m

B. 1 M

C. 0.5 m

D. 1 m

Answer: A::D

8. One mole of any substance contains 6.022×10^{23} atoms/molecules. Number of molecules of H_2SO_4 present in 100 mL of 0.02M H_2SO_4 solution is ....

A. 12.044×10^{20} molecules

B. 6.022×10^{23} molecules

C. 1×10^{23} molecules

D. 12.044×10^{23} molecules

Answer: A::B::C::D

9. What is the mass per cent of carbon in carbon dioxide ?
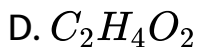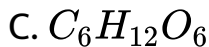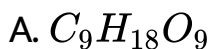
A. 0.034 %

B. 27.27 %

C. 3.4 %

D. 28.7 %

Answer: B

▶ **View Text Solution**

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10. The empirical formula and molecular mass of a compound are CH_2O and 180 g respectively. What wil be the molecular formula of the compound ?

A. $C_9H_{18}O_9$

B. CH_2O

C. $C_6H_{12}O_6$

D. $C_2H_4O_2$

Answer: A::B::C

▶ **View Text Solution**

11. If the density of a solution is $3.12 gmL^{-1}$, the mass of 1.5 mL solution in significant figures is ....

A. 4.7 g

B. 4680×10^{-3} g

C. 4.680 g

D. 46.80 g

Answer: C::D

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12. Which of the following statements about a compound is incorrect ?

A. A molecule of a compound has atoms of different elements.

B. A compound cannot be separated into its constituent elements by physical methods of

separation.

C. A compound retains the physical properties of its
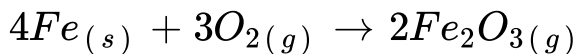
constituent elements.

D. The ratio of atoms of different elements in a

compound is fixed.

Answer: A::C::D

▶ View Text Solution

13. Which of the following statements is correct about the

reaction given below ?

$$4Fe_{(s)} + 3O_{2(g)} \rightarrow 2Fe_2O_{3(g)}$$

A. Total mass of iron and oxygen in reactants $=$ total mass of iron and oxygen in product therefore it follows law of conservation of mass.

B. Total mass of reactants $=$ total mass of product, therefore, law of multiple proportions is followed.

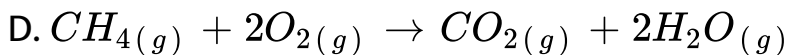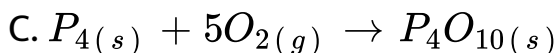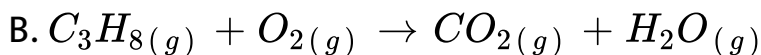C. Amount of Fe_2O_3 can be increased by taking any one of the reactants (iron or oxygen) in excess.
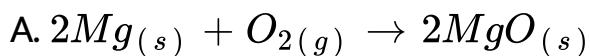
D. Amount of Fe_2O_3 will decrease if the amount of any one of the reactants (iron or oxygen) is taken in excess.

Answer: A

▶ **View Text Solution**

14. Which of the following reactions is not correct according to the law of conservation of mass ?

A. $2Mg_{(s)} + O_{2(g)} \rightarrow 2MgO_{(s)}$

B. $C_3H_{8(g)} + O_{2(g)} \rightarrow CO_{2(g)} + H_2O_{(g)}$

C. $P_{4(s)} + 5O_{2(g)} \rightarrow P_4O_{10(s)}$

D. $CH_{4(g)} + 2O_{2(g)} \rightarrow CO_{2(g)} + 2H_2O_{(g)}$

Answer: A::B::C

▶ **View Text Solution**

15. Which of the following statements indicates that law of multiple proportions is being followed .

A. Sample of carbon dioxide taken from any source will always have carbon and oxygen in the ratio $1:2.$

B. Carbon forms two oxides namely CO_2 and CO, where masses of oxygen which combine with fixed mass of carbon are in the simple ratio $2:1.$

C. When magnesium burns in oxygen , the amount of magnesium taken for the reaction is equal to the amount of magnesium in magnesium oxide formed.

D. At constant temperature and pressure 200 mL of hydrogen will combine with 100 mL oxygen to

produce 200 mL of water vapour.

Answer: D

▶ **View Text Solution**

1. One mole of oxygen gas at STP is equal to ......

A. 6.022×10^{23} molecules of oxygen

B. 6.022×10^{23} atoms of oxygen
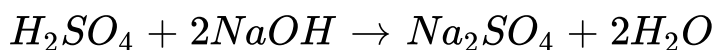
C. 16 g of oxygen

D. 32 g of oxygen

Answer: A::D

> ▶ View Text Solution

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2. Sulphuric acid reacts with sodium hydroxide as follows :

$$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$$

When 1 L of 0.1M sulphuric acid solution is allowed to react with 1L of 0.1 M sodium hydroxide solution, the amount of sodium sulphate formed and its molarity in the solution obtained is

A. 0.1 mol L^{-1}

B. 7.10 g

C. 0.025 mol L^{-1}

D. 3.055 g

Answer: B::C

▶ **View Text Solution**

3. Which of the following pairs have the same number of atoms ?

A. 16 g of $O_{2(g)}$ and 4 g of $H_{2(g)}$

B. 16 g of O_2 and 44 g of CO

C. 28 g of N_2 and 32 g of O_2

D. 12 g of $C_{(s)}$ and 23 g of $Na_{(s)}$

Answer: C::D

4. Which of the following solutions have the same concentration ?

    A. 20 g of NaOH in 200 mL of solution

    B. 0.5 mol of KCl in 200 mL of solution

    C. 40 g of NaOH in 100 mL of solution

    D. 20 g of KOH in 200 mL of solution

Answer: A::B

5. 16 g of oxygen has same number of molecules as in

    A. 16 g of CO

    B. 28 g of N_2

    C. 14 g of N_2

    D. 1.0 g of H_2

Answer: C::D

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6. Which of the following terms are unitless ?

    A. Molality

B. Molarity

C. Mole fraction

D. Mass percent

Answer: C::D

7. One of the statements of Dalton's atomic theory is given below : " Compounds are formed when atoms of different elements combine in a fixed ratio "

Which of the following laws is not related to this statement ?

A. Law of conservation of mass

B. Law of definite proportions

C. Law of multiple proportions

D. Avogadro law

Answer: A::D

> ▶ **View Text Solution**

Section D Solutions Of Ncert Exemplar Problems Short Answer Type Questions

1. What will be the mass of one atom of C-12 in grams ?

A.

B.

C.

D.

Answer:

---

2. How many significant figures should be present in the

answer of the following calculations ?

$$\frac{2.5 \times 1.25 \times 3.5}{2.01}$$

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

3. What is the symbol for SI unit of mole ? How is the mole defined ?

A.

B.

C.

D.

Answer:

4. What is the difference between molality and molarity ?

A.

B.

C.

D.

Answer:

5. Calculate the mass percent of calcium, phosphorus and oxygen in calcium phosphate $Ca_3(PO_4)_2$.
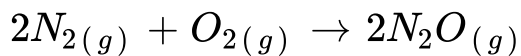
A.

B.

C.

D.

Answer:

▶ View Text Solution

6. 45.6 L of dinitrogen reacted with 22.7 L of dioxygen and 45.4 L of nitrous oxide was formed. The reaction is given

below :

$$2N_{2(g)} + O_{2(g)} \rightarrow 2N_2O_{(g)}$$

Which law is being obeyed in this experiment ? Write the

statement of the law ?

A.

B.

C.

D.

Answer:

▶ View Text Solution

7. If two elements can combine to form more than one compound, the masses of one element that combine with a fixed mass of the other element, are in whole number ratio.

(a) Is this statement true ?

(b) If yes, according to which law ?

(C) Give one example related to this law.

A.

B.

C.

D.

Answer:

8. Calculate the average atomic mass of hydrogen using the following data :
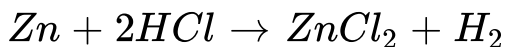

A.

B.

C.

D.

Answer:

9. Hydrogen gas is perpared in the laboratory by reacting dilute HCl with granulated zinc. Following reaction takes place.

$$Zn + 2HCl \rightarrow ZnCl_2 + H_2$$

Calculate the volume of hydrogen gas liberated at STP when 32.65 g of zinc reacts with HCl. 1 mol of a gas occupies 22.7 L volume at STP, atomic mass of $Zn = 65.3u$

.

A.

B.

C.

D.

Answer:

10. The density of 3 molal solution of NaOH is 1.110 g mL^{-1} . Calculate the molarity of the solution.

A.

B.

C.

D.

Answer:

11. Volume of a solution changes with change in temperature, then, what will the molality of the solution be affected by temperature ? Give reason for your answer.

A.

B.

C.

D.

Answer:

▶ View Text Solution

12. If 4 g of NaOH dissolves in 36 g of H_2O, calculate the mole fraction of each component in the solution. Also, determine the molarity of solution (specific gravity of solution is $1gmL^{-1}$).
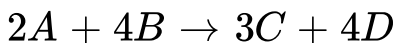
A.

B.

C.

D.

Answer:

▶ View Text Solution

13. The reactant which is entirely consumed in reaction is known as limiting reagent, in the reaction $2A + 4B \rightarrow 3C + 4D$, when 5 moles of A react with 6 moles of B, then

(i) which is the limiting reagent ?

(ii) calculate the amount of C formed ?

$2A + 4B \rightarrow 3C + 4D$

A.

B.

C.

D.

Answer:

Section D Solutions Of Ncert Exemplar Problems Matching The Columns

1. Match the following :

A.

B.

C.

D.

Answer: (A-2), (B-3), (C-1), (D-5), (E-4)

2. Match the following physical quantities with units.

A.

B.

C.

D.

Answer: (A-5), (B-4), (C-2), (D-7), (E-3), (F-6), (G-1), (H-9)

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Section D Solutions Of Ncert Exemplar Problems Assertion And Reason

1. Assertion (A) : The empirical mass of ethane is half of its molecular mass.

Reason (R) : The empirical formula represents the simplest whole number ratio of various atoms present in a compound.

    A. Both A and R are true and R is the correct

        explanation of A.

    B. A is true but R is false.

    C. A is false but R is true.

    D. Both A and R are false.

Answer: A::B::C::D

▶ **View Text Solution**

2. Assertion (A) : One atomic mass unit is defined as one twelfth of the mass of one carbon-12 atom.

Reason (R) : Carbon - 12 isotope is the most abundant isotope of carbon and has been chosen as standard.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R true but R is not the correct explanation of A.

C. A is true but R is false.

D. Both A and R are false.

Answer: A::B::C::D

3. Assertion (A) : Significant figures for 0.200 is 3 where as for 200 it is 1.

Reason (R) : Zero at the end or right of a number are significant provided they are not on the right side of the decimal point .

    A. Both A and R are true and R is the correct explanation of A.

    B. Both A and R are true but R is not the correct explanation of A.

    C. A is true but R is false.

    D. Both A and R are false.

Answer: A::B::C

4. Assertion (A) : Combustion of 16 g of methane gives 18 g of water.

Reason (R) : In the combustion of methane, water is one of the products.

A. Both A and R are true but R is not the correct explanation of A.

B. A is true but R is false.

C. A is false but R is true.

D. Both A and R are false.

Answer: A::B::C

Section D Solutions Of Ncert Exemplar Problems Long Answer Type Questions

1. A vessel contains 1.6 g of dioxygen at STP (273.15 K, 1 atm pressure). The gas is now transferred to another vessel at constant temperature, where pressure becomes half of the original pressure. Calculate

(A) volume of the new vessel.

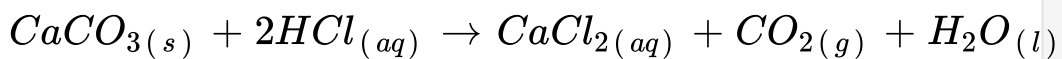(B) number of molecules of dioxygen.

A.

B.

C.

D.

Answer:

▶ View Text Solution

2. Calcium carbonate reacts with aqueous HCl to give

$CaCl_2$ and CO_2 according to the reaction given below :

$$CaCO_{3(s)} + 2HCl_{(aq)} \rightarrow CaCl_{2(aq)} + CO_{2(g)} + H_2O_{(l)}$$

What mass of $CaCl_2$ will be formed when 250 mL of 0.76

M HCl reacts with 1000 g of $CaCO_3$? Name the limiting

reagent. Calculate the number of moles of $CaCl_2$ formed

in the reaction.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**

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3. Define the law of multiple proportions. Explain it with two examples. How does this law point to the existance of atoms ?

A.

B.

C.

D.

Answer:

4. A box contains some identical red coloured balls, labelled as A, each weighing 2g. Another box contains identical blue coloured balls, labelled as B, each weighing 5 g. Consider the combinations AB, AB_2, A_2B and A_2B_3 and show that law of multiple proportions is applicable.

A.

B.

C.

D.

Answer:

▶ **View Text Solution**