



# CHEMISTRY

## BOOKS - TARGET CHEMISTRY (HINGLISH)

### SOME BASIC CONCEPTS OF CHEMISTRY

#### Classical Thinking

1. \_\_\_\_\_ chemistry deals with the chemistry of elements other than carbon and of their compounds.

A. Organic

B. Physical

C. Inorganic

D. Bio

**Answer: C**



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2. The branch of chemistry, which deals with the separation, identification and quantitative determination of the composition of different substances, is called \_\_\_\_\_ chemistry.

A. organic

B. inorganic

C. analytical

D. blo

**Answer: C**



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3. Solar energy can be converted into electricity with the help of..... (Photovoltaic cell/Lithium cells).

A. Daniel

B. lithium ion

C. photovoltaic

D. nickel cadmium

**Answer: C**



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4. In computers \_\_\_\_\_ chips are used as microprocessors

A. carbon

B. phosphorus

C. titanium

D. silicon

**Answer: D**



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5. Which of the following is NOT a mixture?

A. Iodized table salt

B. Gasoline

C. Liquefied Petroleum Gas (L.P.G)

D. Distilled water

**Answer: D**



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6. Which of the following is NOT a homogeneous mixture?

A. Ethanol + water

B. Oxygen gas + nitrogen gas

C. Phenol + water

D. Acetic acid + water

**Answer: C**



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7. The phlogiston theory was suggested for

A. neutralisation

B. oxidation

C. reduction

D. combustion

**Answer: D**



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8. Substances, which CANNOT be decomposed into two or more different substances by chemical

process, are called \_\_\_\_\_

A. alloys

B. molecules

C. elements

D. compounds

**Answer: C**



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9. The arbitrarily decided and universally accepted standards are called \_\_\_\_\_



A. fundamentals

B. units

C. measures

D. symbols

**Answer: B**



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**10.** There are \_\_\_\_\_ fundamental SI units.

A. 3

B. 5

C. 6

D. 7

**Answer: D**



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**11. SI unit of velocity is**

(i) m/s

(ii)  $m / s^2$

(iii) m

(iv) s

A.  $kms^{-1}$

B.  $kmhr^{-1}$

C.  $ms^{-2}$

D.  $ms^{-1}$

**Answer: D**



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**12.** The unit of electrochemical equivalent is

A.  $kgms^{-1}$

B.  $kgm^2s^{-1}$

C.  $kgC^{-1}$

D.  $kgm^{-1}s^{-2}$

**Answer: C**



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**13.** The prefix pico stands for \_\_\_\_\_

A.  $10^{-12}$

B.  $10^{-15}$

C.  $10^{12}$

D.  $10^{-9}$

**Answer: A**



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14. After a chemical reaction the total mass of reactant and products

- A. always increases
- B. always decreases
- C. does not change
- D. either increases or decreases

**Answer: C**



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15. The sum of the masses of reactants and products is equal in any physical or chemical reaction. This is in accordance with law of \_\_\_\_\_

- A. multiple proportion
- B. definite composition
- C. conservation of mass
- D. reciprocal proportion

**Answer: C**



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16. If law of conservation of mass was to hold true, then  $20.8\text{g}$  of  $\text{BaCl}_2$  on reaction with  $9.8\text{g}$  of  $\text{H}_2\text{SO}_4$  will produce  $7.3\text{g}$  of  $\text{HCl}$  and  $\text{BaSO}_4$  equal to

A.  $11.65\text{g}$

B.  $23.3\text{g}$

C.  $25.5$

D.  $30.6\text{g}$

**Answer: B**



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17. Pure water can be obtained from various sources, but it always contains hydrogen and oxygen, combined in a ratio of 1:8 by weight. This is an example of \_\_\_\_\_

A. law of conservation of mass

B. Avogadro's law

C. law of definite composition

D. Gay lussac's law

**Answer: C**



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18. Two containers of the same size are filled separately with  $H_2$  gas and  $CO_2$  gas. Both the containers under the T and P will contain the same\_\_\_\_\_

A. number of atoms

B. weight of gas

C. number of molecules

D. number of electrons

**Answer: C**



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19. In  $SO_2$  and  $SO_3$ , the ratio of the masses of oxygen that combine with a fixed mass of sulphur is 2:3. This is an example of the law of \_\_\_\_\_.

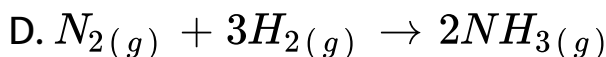
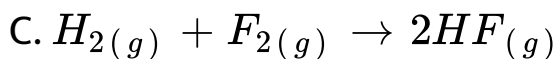
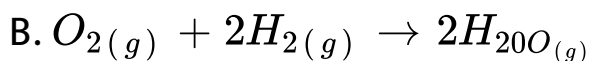
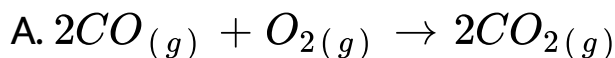
- A. constant proportion
- B. multiple proportion
- C. reciprocal proportion
- D. conservation of mass

**Answer: B**



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20. Which of the following reactions has the ratio of volumes of reacting gases and the product as 1:2:2?



**Answer: B**



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21. The volume of oxygen required for complete combustion of  $0.25 \text{ cm}^3$  of  $\text{CH}_4$  at S.T.P. is \_\_\_\_\_  $\text{cm}^3$

A. 0.25

B. 0.5

C. 0.75

D. 1

**Answer: B**



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**22.** What is the smallest particle of matter according to Dalton?

A. atoms

B. molecules

C. ions

D. elements

**Answer: A**



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**23.** Atoms have a mass of the order \_\_\_\_\_

A.  $10^{-26} \text{ kg}$

B.  $10^{-15} \text{ kg}$

C.  $10^{-26} \text{ g}$

D.  $10^{-15} \text{ g}$

**Answer: A**



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**24.** The radius of the atom is of the order of

A.  $10^{-26} \text{ m}$

B.  $10^{-15} \mu\text{m}$

C.  $10^{-15}mm$

D.  $10^{-15}m$

**Answer: D**



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25. A/an \_\_\_\_\_ is an aggregate of two or more atoms in definite composition, which are held together by chemical bonds.

A. ion

B. molecule

C. compound

D. mixture

**Answer: B**



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**26.** Which symbol replaces the unit of atomic mass, amu ?

A. u

B. mol

C. g

D. kg



**Answer: A**



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27. Mole is the SI unit of \_\_\_\_\_

A. volume

B. pressure

C. amount of substance

D. density

**Answer: C**



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28. 1 amu is equal to

A.  $\frac{1}{12}$  of C-12

B.  $\frac{1}{14}$  of O-16

C. 1 g of  $H_2$

D.  $1.66 \times 10^{-23} \text{ kg}$

**Answer: A**



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29. \_\_\_\_\_ is the sum of the atomic mass of all the atoms as given in the molecular formula of the

substance.

- A. Molecular mass
- B. Atomic weight
- C. Percentage weight
- D. Percentage volume

**Answer: A**



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30.  $N_A = \underline{\hspace{2cm}}$  atoms  $\text{mol}^{-1}$

A.  $6.021 \times 10^{21}$

B.  $6.024 \times 10^{24}$

C.  $6.051 \times 10^{15}$

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

**Answer: D**



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**31.** One \_\_\_\_\_ is the collection of  $6.022 \times 10^{23}$  atoms/ molecules/ions

A. kg

B. Gasoline

C. mole

D. cm

**Answer: C**



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**32.** Avogadro's number is \_\_\_\_\_

A. number of atoms in one gram of element

B. number of millilitres which one mole of a gaseous substance occupies at N.T.P.

C. number of molecules present in one gram molar mass of a substance

D. number of elements in one gram of compounds

**Answer: C**



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**33.** "Equal volume of gases under similar conditions of pressure and temperature possess equal number of molecules". This law is given by

A. Boyle's law

B. Charles' law

C. Avogadro's law

D. Gay Lussac's law

**Answer: C**



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**34.** Volume occupied by 1 g molecular weight of any gas is called\_

A. gram molecular volume

B. gram atomic volume

C. gram molecule weight

D. gram atomic weight

**Answer: A**



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**35.** The number of atoms present in a molecule of a substance is called its\_\_\_\_\_

A. atomicity

B. volume

C. density

D. mass



**Answer: A**



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**36.** How many molecules are present in one in one gram of hydrogen?

A.  $6 \times 10^{23}$

B.  $3 \times 10^{23}$

C.  $2.5 \times 10^{23}$

D.  $1.5 \times 10^{23}$

**Answer: B**



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37. One mole of  $CO_2$  contains:

- A.  $6.022 \times 10^{23}$  atoms of C
- B.  $6.022 \times 10^{23}$  atoms of O
- C.  $18.1 \times 10^{23}$  molecules of  $CO_2$
- D. 3g atoms of  $CO_2$

**Answer: A**



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38. One mole of  $H_2O$  corresponds to \_\_\_\_\_

A. 22.4 litre at 1 atm and  $25^{\circ}C$

B.  $6.022 \times 10^{23}$  atoms of hydrogen and

$6.022 \times 10^{23}$  atoms of oxygen

C. 18 g of  $H_2O$

D. 1 g of  $H_2O$

**Answer: C**



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**39.** The gram molecule of benzene is equal to

\_\_\_\_\_ g  $C_6H_6$

A. 70

B. 72

C. 10

D. 78

**Answer: D**



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**40.** 1 atom of an element weighs  $1.792 \times 10^{-22} g$ . The atomic mass of the element is

A. 1.192

B. 17.92

C. 64

D. 108

**Answer: D**



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**41.** What is the mass of 0.5 mole of ozone molecule?

A. 8 g

B. 16 g

C. 24 g

D. 48 g

**Answer: C**



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**42.** The number of molecules is 16 g of oxygen gas is

\_\_\_\_\_

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

B.  $3.011 \times 10^{23}$

C.  $3.011 \times 10^{22}$

D.  $1.5 \times 10^{23}$

**Answer: B**



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**43.** Which of the following weighs the least?

A. 2.0 gram mole of  $CO_2$

B. 0.1 mole of sucrose ( $C_{12}H_{22}O_{11}$ )

C. 1 gram atom of calcium

D. 1.5 mole of water

**Answer: D**



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44. Which one of the following parts of gases contains the same number of molecules?

A. 16 g of  $O_2$  and 14 g of  $N_2$

B. 8 g of  $O_2$  and 22 g of  $CO_2$

C. 28 g of  $N_2$  and 22 g of  $CO_2$

D. 32 g of  $O_2$  and 32 g of  $N_2$

**Answer: A**



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45. One mole of oxygen gas weighs\_\_\_\_\_



A. 1 g

B. 8 g of  $O_2$  and 22 g of  $CO_2$

C. 32 g

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

**Answer: C**



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**46.** Under similar conditions same mass of oxygen and nitrogen is taken. The ratio of their volumes will be \_\_\_\_\_

A. 7:8

B. 3:5

C. 6:5

D. 9:2

**Answer: A**



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47. The mass percentage of each constituent element present in 100 g of a compound is called its \_\_\_\_\_.

A. molecular composition

B. atomic composition

C. presentage composition

D. mass composition

**Answer: C**



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48. \_\_\_\_\_ of a compound is the chemical formula indicating the relative number of atoms in the simplest ratio.

A. Empirical formula

B. Molecular formula

C. Empirical mass

D. Molecular mass

**Answer: A**



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**49.** The percentage composition composition of carbon in urea,  $[CO(NH_2)_2]$  is

A. 0.2

B. 0.4

C. 0.5

D. 0.8

**Answer: A**



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50. What is the % of  $H_2O$  in  $Fe(CNS)_3 \cdot 3H_2O$ ?

A. 19

B. 25

C. 30

D. 45

**Answer: A**



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51. The percentage of oxygen in NaOH is

A. 8

B. 10

C. 40

D. 60

**Answer: C**



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52. A compound made of two elements A and B is found to contain 25% A (atomic mass 12.5) and 75%

B (atomic mass 37.5). The simplest formula of the the compound is :-

A.  $AB$

B.  $AB_2$

C.  $AB_3$

D.  $A_3B$

**Answer: A**



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53. \_\_\_\_\_ indicates the actual number of constituents atoms in a molecule

A. Empirical formula

B. Molecular formula

C. Empirical mass

D. Molecular mass

**Answer: B**

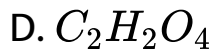
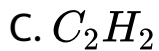
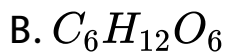


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**54.** Which of the following has same molecular formula and empirical formula?

A.  $CO_2$



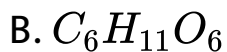
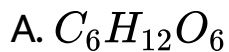


**Answer: A**



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**55.** Empirical formula of glucose is \_\_\_\_\_



D.  $CH_2O$

**Answer: D**



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**56.** The starting material that takes part in chemical reaction is called \_\_\_\_\_

A. product

B. reactant

C. catalyst

D. starter

**Answer: B**



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57. \_\_\_\_\_ reactant is the reactant that reacts completely but limits further progress of the reaction.

A. oxidizing

B. reducing

C. limiting

D. excess

**Answer: C**



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58. \_\_\_\_\_ reactant is the reactant that is taken in excess than the limiting reactant.

A. oxidizing

B. reducing

C. limiting

D. excess

**Answer: D**



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59. Which of the following relations for expressing volume of a sample is NOT correct?

A.  $1L = 10^3 mL$

B.  $1dm^3 = 1L$

C.  $1L = 10^3 m^3$

D.  $1L = 10^3 cm^3$

**Answer: C**



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60. Which out of the following is NOT a homogeneous mixture?

A. solution of glucose in water

B. solution of salt in water.

C. mixture of glucose solution and salt solution

D. mixture of oil and water

**Answer: D**



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61. The molecular mass of hydroge peroxide is 34.

What is the unit of molecular mass?

A. gram molecular volume

B. mol

C.  $g\text{mol}^{-1}$

D.  $\text{mol}g^{-1}$

**Answer: C**



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**Critical Thinking**

1. Azidothymidine drug is used for treating\_\_\_\_\_patients.

A. diabetes

B. AIDS

C. jaundice

D. tuberculosis

**Answer: B**



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2. Which of the following statement is INCORRECT?



A. Constituent substances in a mixture retain their separate identities.

B. Composition of a mixture can be varied to any extent.

C. Mixture of liquids are example of homogeneous mixtures.

D. Mixtures can be separated into pure components by simple physical methods.

**Answer: C**



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3. The revised metric system in which units are expressed is \_\_\_\_\_

A. CGS

B. MKS

C. FPS

D. SI

**Answer: D**



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#### 4. Find the CORRECT match

Physical quantity	Unit
(A) Density	$kgm^3$
(B) Acceleration	$kgm^{-1}s^{-2}$
(C) Pressure	$kgm^{-3}$
(D) Force	$kgms^{-2}$

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#### 5. Find the INCORRECT match

Prefix	Magnitude
(A) Giga	$10^9$
(B) Mega	$10^3$
(C) Nano	$10^{-9}$
(D) Micro	$10^{-6}$

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6. Hydrogen and oxygen combine to form  $H_2O_2$  and  $H_2O$  containing 5.93% and 11.2% hydrogen respectively. The data illustrates

- A. law of conservation of mass
- B. law of definite composition
- C. law of reciprocal proportion
- D. law of multiple proportion

**Answer: D**



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7. Two elements A and B combine to form a compound in which a g of A combines with  $b_1$  and  $b_2$  g of B respectively. According to law of multiple proportion\_\_\_\_\_.

A.  $b_1 = b_2$

B.  $b_1$  and  $b_2$  bear a simple whole number ratio

C. a is always equal to  $b_1$

D. no relation exists between  $b_1$  and  $b_2$

**Answer: B**



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8. Two samples of lead oxide were separately reduced to metallic lead by heating in a current of hydrogen. The weight of lead from one oxide was half the weight of lead obtained from the other oxide. The data illustrates

- A. law of reciprocal properties
- B. law of constant proportions
- C. law of multiple proportions
- D. law of equivalent proportions

**Answer: C**



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9. The law of multiple proportion is illustrated by

- A. carbon monoxide and carbon dioxide
- B. potassium bromide and potassium
- C. ordinary water and heavy water ( $D_2O$ )
- D. calcium hydroxide and barium hydroxide

**Answer: A**



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10. How many litres of ammonia will be formed when

2L of  $N_2$  and 2L of  $H_2$  are allowed to react?

A. 0.665

B. 1

C. 1.33

D. 4

**Answer: C**



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**11.** Which of the following statements is FALSE according to Dalton's atomic theory?



A. A chemical reaction involves only the separation, combination or rearrangement of integer number of atoms.

B. Law of conservation of mass can be explained by assuming that total number of atoms in the reactants and products remains same.

C. During chemical reactions, atoms are neither created nor destroyed.

D. Atoms of the same element have different properties.

**Answer: D**



12. Which of the following statements is INCORRECT?

A. Atoms may or may not have free existence

B. A molecule may contain atoms of same elements or different elements.

C. A molecule can be divided into its constituents atoms by simple methods.

D. The properties of constituent atoms and the compounds formed from them are completely different.

**Answer: C**



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**13.** Isotopes are the atoms of the same element having\_\_\_\_\_

- A. different number of protons
- B. different number of electrons
- C. different number of neutrons
- D. same number of neutrons

**Answer: C**



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14. Which of the following indicates natural abundance of neon-20 isotope?

A. 90.92u

B. 0.9092

C. 90.92  $g\text{mol}^{-1}$

D.  $90.92 \times 0.012\text{kg}$  of  $^{12}\text{C}$

**Answer: B**



15. In chemical scale, the relative mass of the isotopic mixture of oxygen atoms ( $O^{16}$ ,  $O^{17}$ ,  $O^{18}$ ) is assumed to be equal to

A. 15

B. 16

C. 17

D. 18

**Answer: B**



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16. The number of moles of sodium oxide in 620 g of it is

A. 1 mol

B. 10 moles

C. 18 moles

D. 100 moles

**Answer: B**



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17. The number of water molecules in 1L of water is :

A. 18

B.  $18 \times 1000$

C.  $N_A$

D.  $55.55N_A$

**Answer: D**



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**18.** 1 mol of  $CH_4$  contains

A.  $6.02 \times 10^{23}$  atoms of H

B. 4 g atoms of H

C.  $1.81 \times 10^{23}$  molecules of  $CH_4$

D. 3.0 g of carbon

**Answer: B**



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**19. Mass of 1 atom of Hydrogen is -**

A. 1g

B. 0.5 g

C.  $1.6 \times 10^{-24} g$

D.  $3.2 \times 10^{-24} g$



**Answer: C**

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20.  $1\text{ gm} - a \rightarrow m$  of nitrogen may represent:

A.  $6.02 \times 10^{23} N_2$  molecules

B. 22.4L of  $N_2$  at N.T.P

C. 1.2 L of  $N_2$  at N.T.P

D. 28 g of nitrogen

**Answer: C**

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21. The number of molecules in  $22.4\text{dm}^3$  of nitrogen gas at STP is \_\_\_\_\_

A.  $6.022 \times 10^{20}$

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

C.  $22.4 \times 10^{20}$

D.  $22.4 \times 10^{23}$

**Answer: B**



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22. How many moles of electrons weigh one kilogram?

(Mass of electron =  $9.108 \times 10^{-31}$  kg, Avogadro's number =  $6.023 \times 10^{23}$ )

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

B.  $\frac{1}{9.108} \times 10^{31}$

C.  $\frac{6.022}{9.108} \times 10^{54}$

D.  $\frac{1}{9.108 \times 6.022} \times 10^8$

**Answer: D**



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23. Which of the following has maximum number of atoms?

A. 18 g of  $H_2O$

B. 16 g  $O_2$

C. 4.4 g of  $CO_2$

D. 16 g of  $CH_4$

**Answer: D**



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24. The number of sulphur atoms present in 0.2 moles of  $S_8$  molecules is

A.  $4.82 \times 10^{23}$

B.  $9.63 \times 10^{22}$

C.  $9.63 \times 10^{23}$

D.  $1.20 \times 10^{23}$

**Answer: C**



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25. What will be the volume of  $CO_2$  at NTP obtained on heating 10 grams of (90% pure) limestone?

- A. 22.4 litre
- B. 2.016 litre
- C. 2.24 litre
- D. 20.16 litre

**Answer: B**



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**26.** If two compounds have the same empirical formula but different molecular formulae they must have

A. different percentage composition

B. different molecular weights

C. same viscosity

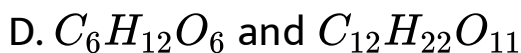
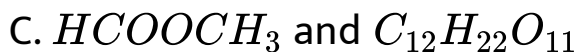
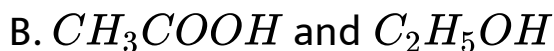
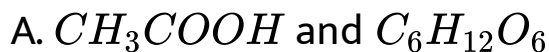
D. same vapour density

**Answer: B**



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27. The pair of species having same percentage of carbon is:



**Answer: A**



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28. The percentage of nitrogen in urea is about:



A. 0.46

B. 0.85

C. 0.18

D. 0.28

**Answer: A**

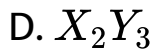
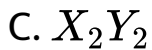
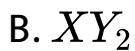


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**29.** Two elements X (Atomic mass 75) and Y (Atomic mass 12) combine to give a compound having 75.8%

X. The empirical formula of the compound is

A. XY

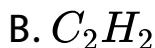


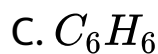
**Answer: B**



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**30.** The empirical formula of a compound is CH. Its molecular weight is 78. The molecular formula the compound will be:





**Answer: C**

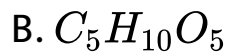
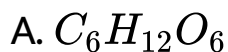


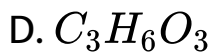
**Watch Video Solution**

**31.** The empirical formula of a compound is  $CH_2O$ .

0.0835 moles of the compound contains 1.0g of

hydrogen Molecular formula of the compound is





**Answer: A**



**Watch Video Solution**

**32.** Calculate the number of moles of methane required to produce 33 g of carbon dioxide gas on its complete combustion.

A. 0.15 moles

B. 0.50 moles

C. 0.75 moles

D. 0.95 moles

**Answer: C**



**Watch Video Solution**

**33.**  $27\text{g}$  of  $Al$  will react completely with.....  $g$  of  $O_2$

A.  $24\text{ g}$

B.  $8\text{ g}$

C.  $40\text{ g}$

D.  $10\text{ g}$

**Answer: A**



**Watch Video Solution**

34. The volume of ammonia obtained by the combination of 10 mL of  $N_2$  and 30 mL  $H_2$  is \_\_\_\_\_.

A. 20mL

B. 40mL

C. 30mL

D. 10mL

**Answer: A**



**Watch Video Solution**

35. What mass of CaO will be obtained by heating 3 mole of  $CaCO_3$ ? [Atomic mass of  $Ca = 40$ ]

A. 150g

B. 168g

C. 16.8g

D. 15g

**Answer: B**



**Watch Video Solution**

36. 3.0 g of  $H_2$  react with 29.0 g  $O_2$  to yield  $H_2O$

(i) What is the limiting reactant ?

(ii) Calculate the maximum amount of water that can be formed

(iii) Calculate the amount of one of the reactants which remains unreacted.

A.  $H_2$ , 1.5

B.  $O_2$ , 1.5

C.  $H_2$ , 3.0

D.  $O_2$ , 0.91

**Answer: A**







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37. Which of the following is a compound?

A. Diamond

B. Charcoal

C. Baking soda

D. 22 Carat Gold

**Answer: C**



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38. Two elements  $A$  and  $B$  combine chemically to form compounds combining with a fixed mass of  $A$  in I, II and III is  $1 : 3 : 5$ , if 32 parts by mass of  $A$  combine with 84 parts by mass of  $B$  in II, then III, 16 parts of  $A$  will combine with..... by mass of  $B$ .

A. 14 parts by mass of  $B$

B. 42 parts by mass of  $B$

C. 70 parts by mass of  $B$

D. 83 parts by mass of  $B$

**Answer: C**



**Watch Video Solution**

39. Which of the following is the value of amu?

A.  $1.57 \times 10^{-24} \text{ kg}$

B.  $1.66 \times 10^{-24} \text{ kg}$

C.  $1.99 \times 10^{-23} \text{ kg}$

D.  $1.66 \times 10^{-27} \text{ kg}$

**Answer: D**



**Watch Video Solution**

**Competitive Thinking**

1. The SI unit of density is:

A.  $gcm^{-3}$

B.  $gm^{-3}$

C.  $kgm^{-3}$

D.  $kgm^{-3}$

**Answer: C**



**Watch Video Solution**

2. A sample of pure carbon dioxide, irrespective of its source contains 27.27% carbon and 72.73% oxygen. The data support

- A. law of definite composition
- B. law of conservation of mass
- C. law of reciprocal proportion
- D. law of multiple proportion

**Answer: A**



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**3. Which of the following properties of an element is a whole number ?**

- A. Atomic weight

B. Atomic volume

C. Atomic number

D. All of these

**Answer: C**



**Watch Video Solution**

4. The weight of a molecule of the compound  $C_{60}H_{122}$

is

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**



**Watch Video Solution**

5. Boron has two stable isotopes,  $^{10}B$  (19 %) and  $^{11}B$  (81 %). The atomic mass that should appear for boron in the periodic table is

A. 10

B. 10.2

C. 10.8

D. 11.2

Answer: C

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6. An element X has the following isotopic composition :

$^{200}\text{X}$ : 90 % ,  $^{199}\text{X}$ : 8.0 % ,  $^{202}\text{X}$ : 2.0 %

The weighted average atomic mass of the naturally occurring element X is closest to :

A. 200 amu

B. 210 amu



C. 202 amu

D. 199 amu

**Answer: A**



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7. The number of atoms in 4.25g of  $NH_3$  is approximately

A.  $1 \times 10^{23}$

B.  $2 \times 10^{23}$

C.  $4 \times 10^{23}$

D.  $6 \times 10^{23}$

**Answer: D**



**Watch Video Solution**

8. Which amount of dioxygen (in grams) contains  $1.8 \times 10^{22}$  molecules ?

A. 0.096

B. 0.96

C. 9.6

D. 96

**Answer: B**



**Watch Video Solution**

9. The number of oxygen atoms in 4.4 g of  $CO_2$  is approximately

A.  $1.2 \times 10^{23}$

B.  $6 \times 10^{22}$

C.  $6 \times 10^{23}$

D.  $12 \times 10^{23}$

**Answer: A**



**Watch Video Solution**

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10. The volume occupied by 4.4 g of  $CO_2$  at STP is

A. 0.1L

B. 0.224OL

C. 2.24L

D. 22.4L

**Answer: C**



Watch Video Solution

11. The number of atoms in 0.1 mole of a triatomic gas

is \_\_\_\_\_ .  $(N_A = 6.02 \times 10^{23} \text{ mol}^{-1})$

A.  $1.800 \times 10^{22}$

B.  $6.026 \times 10^{22}$

C.  $1.806 \times 10^{23}$

D.  $3.600 \times 10^{23}$

**Answer: C**



**Watch Video Solution**

12. The system that contains the maximum number of atoms is

A. 4.25 of  $NH_3$

B. 8 g of  $O_2$

C. 2g of  $H_2$

D. 4g of He

**Answer: C**



**Watch Video Solution**

13. The number of water molecules is maximum in

- A. 18 gram of water
- B. 18 moles of water
- C. 18 molecules of water
- D. 1.8 gram of water

**Answer: B**



**Watch Video Solution**

**14.** The number of moles of  $BaCO_3$  which contains 1.5 moles of oxygen atoms is

- A. 0.5

B. 1

C. 3

D.  $60.2 \times 10^{23}$

**Answer: A**



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**15.** The number of moles of oxygen in 1 L of air containing 21% oxygen by volume, in standard conditions, is

A. 0.0093 mol

B. 0.186 mol



C. 0.21 mol

D. 2.10 mol

**Answer: A**



**Watch Video Solution**

**16.** If 1 ml of water contains 20 drops. Then no. of molecules in a drop of water is

A.  $6.02 \times 10^{23}$  atoms of H

B.  $1.376 \times 10^{26}$

C.  $1344 \times 10^{18}$

D.  $4.346 \times 10^{20}$

**Answer: C**



**Watch Video Solution**

**17.** How many moles of lead (II) chloride will be formed from a reaction between 6.5g PbO and 3.2g HCl?

A. 0.011

B. 0.029

C. 0.333

D. 0.044

**Answer: B**



**Watch Video Solution**

**18.** Percentage of Se in peroxidase anhydrase enzyme is 0.5 % by weight (at. Wt. = 78.4), then minimum molecular weight of peroxidase anhydrase enzyme is:

A.  $1.568 \times 10^4$

B.  $1.568 \times 10^3$

C. 15.68

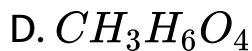
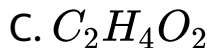
D.  $3.136 \times 10^4$

**Answer: A**



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19. The empirical formula of an acid is  $CH_2O_2$ , the probable molecular formula of acid may be

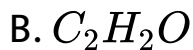
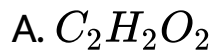


**Answer: B**



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20. A compound (80g) on analysis gave  $C = 24g$ ,  $H = 4g$ ,  $O = 32g$ . Its empirical formula is



**Answer: D**



**Watch Video Solution**

21. An organic compound contains carbon, hydrogen and oxygen. Its elemental analysis gave  $C$ , 38.71 % and  $H$ , 9.67 %. The empirical formula of the compound would be :

A.  $CHO$

B.  $CH_4O$

C.  $CH_3O$

D.  $CH_2O$

**Answer: C**



**Watch Video Solution**

22. During electrolysis of water, the volume of oxygen liberate is  $2.24dm^3$ . The volume of hydrogen liberated, under same conditions will be

A.  $0.56dm^3$

B.  $1.12dm^3$

C.  $2.24dm^3$

D.  $4.48dm^3$

**Answer: D**



**Watch Video Solution**

23. Assuming fully decomposed, the volume of  $CO_2$  released at STP on heating 9.85 g of  $BaCO_3$  (Atomic mass of Ba=137) will be

A. 0.84 L

B. 2.24 L

C. 4.06 L

D. 1.12 L

**Answer: D**



**Watch Video Solution**



24. what volume of hydrogen gas , at 273 K and 1 atm pressure will be consumed in obtaining 21.6 g of elemental boron (atomic mass=10.8) from the reduction of boron trichloride by hydrogen ?

A. 22.4 L

B. 89.6L

C. 67.2 L

D. 44.8 L

**Answer: C**



**Watch Video Solution**

25. What volume of oxygen gas ( $O_2$ ) measured at  $0^\circ C$  and 1 atm is needed to burn completely 1L of propane gas ( $C_3H_8$ ) measured under the same condition?

A. 5L

B. 10L

C. 7L

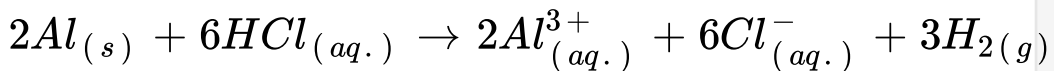
D. 6L

**Answer: A**



**Watch Video Solution**

26. In the reaction:



A. 6L  $HCl_{(aq)}$  is consumed for every 3L  $H_{2(g)}$

produced

B. 33.6 L  $H_{2(g)}$  is produced regardless of

temperature and pressure for every mole Al that

reacts.

C. 67.2 L  $H_{2(g)}$  at STP is produced for every mole Al

that reacts.

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

$HCl_{(aq)}$  consumed.

**Answer: D**



**Watch Video Solution**

27. How many moles of magnesium phosphate,  $Mg_3(PO_4)_2$  will contain 0.25 mole of oxygen atoms?

A. 0.02

B.  $3.125 \times 10^{-2}$

C.  $1.25 \times 10^{-2}$

D.  $2.5 \times 10^{-2}$

**Answer: B**



Watch Video Solution

28. 1 gram of carbonate ( $M_2CO_3$ ) on treatment with excess HCl produces 0.1186 mole of  $CO_2$ . The molar mass of  $M_2CO_3$  in  $g\ mol^{-1}$

A. 11.86

B. 84.3

C. 118.6

D. 1186

**Answer: B**



Watch Video Solution

29. 10 g hydrogen is reacted with 64 g of oxygen. The amount of water formed will be (in moles)

A. 3

B. 4

C. 1

D. 2

**Answer: B**



**Watch Video Solution**

30. 1.0 g of magnesium is burnt with 0.56 g  $O_2$  in a closed vessel. Which reactant is left in excess and how much?

A. Mg, 0.16

B.  $O_2$ , 0.16g

C. Mg, 0.44g

D.  $O_2$ , 0.28 g

**Answer: A**



**Watch Video Solution**

**31.** The ratio of masses of oxygen and nitrogen in a particular gaseous mixture 1:4. The ratio of number of their molecule is :

A. 1:4

B. 7:32

C. 1:8

D. 3:16

**Answer: B**



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**32.** 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 kg person would gain if all  ${}^1\text{H}$  atoms are replaced by  ${}^2\text{H}$  atoms is:

- A. 7.5 kg
- B. 10 kg
- C. 15 kg
- D. 37.5 kg

**Answer: A**



**Watch Video Solution**

33. 20.0 g of magnesium carbonate sample decomposes on heating to give carbon dioxide and 8.0 g of magnesium oxide. What will be the percentage purity of magnesium carbonate in the sample?

A. 60

B. 84

C. 75

D. 96

**Answer: B**



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**34.** Haemoglobin contains 0.33% of iron by weight.

The molecular weight of haemoglobin is approximately 67200. The number of iron atoms (At. Wt. of Fe=56) present in one molecule of haemoglobin is

A. 1

B. 2

C. 4

D. 6

**Answer: C**

35. If Avogadro number  $N_A$  is changed from  $6.022 \times 10^{23} \text{ mol}^{-1}$  to  $6.022 \times 10^{20} \text{ mol}^{-1}$ , this would change \_\_\_\_\_

- A. the ratio of chemical species of each other in a balanced equation
- B. the ratio of elements to each other in a compound
- C. the definition of mass in units of grams
- D. the mass of one mole of carbon

Answer: D



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36. Suppose the elements X and Y combine to form two compounds of  $XY_2$  and  $X_3Y_2$ . When 0.1 mole of  $XY_2$  weighs 10 g and 0.05 mole of  $X_3Y_2$  weighs 9 g , what are the atomic masses of X and Y ?

A. 30,20

B. 40,30

C. 6,40

D. 20,30

**Answer: B**



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**37.** Which symbol replaces the unit of atomic mass, amu ?

A. u

B. A

C. M

D. n

**Answer: A**



**Watch Video Solution**

## Evaluation Test

1. Weight of  $112\text{ml}$  of oxygen at  $NTP$  on liquefaction would be

A.  $0.32\text{ g}$

B.  $0.64\text{ g}$

C.  $0.16\text{ g}$

D.  $0.96\text{ g}$

**Answer: C**



2. The largest number of molecules in

A. 54 g of nitrogen tetroxide

B. 28 g of carbon dioxide

C. 36 of water

D. 46 g of ethyl alcohol

**Answer: C**



**Watch Video Solution**

3. The mass of a molecule of water



A.  $3 \times 10^{-25} \text{ kg}$

B.  $3 \times 10^{-25} \text{ kg}$

C.  $1.5 \times 10^{-26} \text{ kg}$

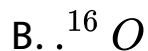
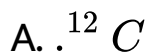
D.  $2.5 \times 10^{-26} \text{ kg}$

**Answer: A**



**Watch Video Solution**

**4. The modern atomic weight scale is based on**



C.  ${}^1\text{H}$

D.  ${}^{13}\text{C}$

**Answer: A**



**Watch Video Solution**

5. Which of the following gives CORRECT order of increasing masses?

(Atomic mass:  $N = 14$ ,  $O = 16$ ,  $Cu = 63$ )

I. 1 molecule of oxygen

II. 1 atom of nitrogen

III.  $1 \times 10^{-10}$  g molecular weight of oxygen

IV.  $1 \times 10^{-10}$  g atomic weight of copper

A. IIIItIItIItIV

B. IVItIIIItIItI

C. IIIItIIIItIItIV

D. IIIItIVItIItII

**Answer: A**



**Watch Video Solution**

6. What is the weight of oxygen required for the complete combustion of 2.8 kg of ethylene?

A. 2.8 kg

B. 6.4 kg

C. 9.6 kg

D. 96 kg

**Answer: C**



**Watch Video Solution**

7. 100 mL of  $\text{PH}_3$  on decomposition produced phosphorus and hydrogen. The change in volume is :-

A. 50 mL increase

B. 50 mL decrease

C. 90 mL decrease

D. 150 mL increase

**Answer: A**



**Watch Video Solution**

**8.** The molecular weight of a gas is 45. Its density at STP is

A. 22.4

B. 11.2

C. 5.7

D. 2

**Answer: D**



**Watch Video Solution**

9. 1.4 moles of phosphorus trichloride are present in a sample. How many atoms are there in the sample?

A. 4

B. 5.6

C.  $8.431 \times 10^{23}$

D.  $3.372 \times 10^{24}$

Answer: D



Watch Video Solution

10. In the reaction,



mole of ammonia and 1 mole of  $O_2$  are made to react to completion

- A. 1.0 mole of  $H_2O$  is produced
- B. 1.0 mole of NO will be produced
- C. all the oxygen will be consumed
- D. all the ammonia will be consumed

**Answer: C**



**Watch Video Solution**

**11.** What weight of  $SO_2$  can be made by burning sulphur in 5.0 moles of oxygen?

A. 640 grams

B. 160 grams

C. 80 grams

D. 320 grmas

**Answer: D**



**Watch Video Solution**



12. In INCORRECT statement for 14 g of CO is \_\_\_\_\_.

A. it occupies 2.24 L at NTP

B. it corresponds to  $\frac{1}{2}$  mole of CO

C. it corresponds to half mole of  $N_2$

D. it corresponds to  $3.01 \times 10^{23}$  molecules of CO

**Answer: A**



13. The number of gram atom of oxygen in  $6.02 \times 10^{24}$  CO molecules is \_\_\_\_\_

A. 1

B. 0.5

C. 5

D. 10

**Answer: D**



**Watch Video Solution**

14. Empirical formula of a hydrocarbon containing 80 % carbon and 20% hydrogen is

A.  $CH_2$

B.  $CH_3$

C.  $CH_4$

D.  $C_2H_3$

**Answer: B**



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**15.** Which of the following drug ailment pairs is  
CORRECT?

A. Tamiflu-cancer

B. Cisplatin-AIDS

C. L-dopa-Parkinson's disease

D. Taxol -diabetes

**Answer: C**



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**16.** The magnitude of femto is \_\_\_\_\_

A.  $10^9$

B.  $10^{-15}$

C.  $10^{-9}$

D.  $10^{-12}$

**Answer: B**



**Watch Video Solution**

17. The number of moles in  $y$  g of helium gas is equal to \_\_\_\_\_

A.  $y \times 4$

B.  $y/2$

C.  $y/4$

D.  $y \times 2$

**Answer: C**



**Watch Video Solution**

**18.** Which of the following is NOT a fundamental SI unit?

A. Meter

B. Candela

C. Ampere

D. Gram

**Answer: D**



**Watch Video Solution**

19. For a reaction  $A + 3B \rightarrow C + D$  the amount of C formed by starting the reaction with 5 moles of A and 9 moles of B is \_\_\_\_\_.

- A. 2 moles
- B. 3 moles
- C. 4 moles
- D. 5 moles

**Answer: B**



20. In an experiment 2.16 g of copper was dissolved in nitric acid followed by ignition of the nitrate, which gave 2.70 g of copper oxide. In another experiment 1.46 g of copper on heating in a current of air gave 1.83 g of copper oxide.

The percentage of copper in copper oxide is \_\_\_\_\_ and the above data illustrate the law of \_\_\_\_\_.

- A. 20 % definite proportion
- B. 80% multiple proportion
- C. 205 multiple proportion
- D. 805, definite proportion



**Answer: D**



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