CHEMISTRY

BOOKS - SURA CHEMISTRY (TAMIL ENGLISH)

ATOMS AND MOLECULES

Textbook Evaluation Choose The Correct Answer

1. Which of the following has the smallest mass ?

A. 6.023×10^{23} atoms of He

B. 1 atom of He

C. 2g of He

D. 1 mole atoms of He

Answer: B

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2. Which of the following is a triatomic molcule ?

A. Glucose

B. Gelium

C. Carban dioxide

D. Hydrogen

Answer: C

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3. The Volume occupied by 4.4 g of CO_2 at S.T.P

A. 22.4 litre

B. 2.24 litre

C. 0.24 litre

D. 01 litre

Answer: B

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4. Mass of 1 mole of Nitrogen represents 1 amu ?

A. 28 amu

B. 14 amu

C. 28 g

D. 14 g

Answer: D

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5. Which of the following represents 1 amu ?

A. Mass of a C-12 atom

B. Mass of a hydrogen atom

C. $\frac{1}{12^{th}}$ of the mass of a C-12 atom

D. Mass of o- 16 atom

Answer: C

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6. Which of the following statement is incorrect ?

A. One gram of C-12 contains avogdro's number of atoms.

B. One mole of oxygen gas contains Avogardro's number of molecules .

C. One mole of hydrogen gas contains avogardro's number of atoms .

D. One mole of electrons stands for 6.023×10^{23} electrons.

Answer: A

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7. The Volume occupied by 1 mole of a diatomic gas at S.T.P is _____.

A. 11.2 litre

B. 5.6 litre

C. 22.4 litre

D. 44.8 litre

Answer: C

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8. In the nucleus of $_{20}Ca^{40}$, there are _____.

A. 20 protons and 40 neutrons

B. 20 protons and 20 neutrons

C. 20 protons and 40 electrons

D. 40 protons and 20 electrons

Answer: B

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9. The gram molecular mass of oxygen molecules is _____/

A. 16 g

B. 18 g

C. 32 g

D. 17 g

Answer: C

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10. 1 Mole of any substance contains _____ molecules .

A. 6.023×10^{23}

B. 6.023×10^{-23}

C. 3.0115×10^{23}

D. 12.046×10^{23}

Answer: A

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Textbook Evaluation Fill In The Blanks

1. Atoms of different elements having _____ mass number , but _____ atomic numbers are called isobars .

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2. Atomic of different element having same number of _____ are called isotones .

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3. Atoms of one element can be transmuted into atoms of other element by ____.

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4. The sum of the numbers of protons and neutrons of an atom is called its _____.

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5. Relative atomic mass of otherwise known as _____.

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6. The average atomic mass of hydrogen is _____amu .

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7. If a molecule is made of similar kind of atoms , then it is called _____ atomic molecules .

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8. The number of atoms present in a molecule is called its _____.

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9. One mole of any gas occupies _____ ml at S.T.P

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10. Atomicity of phosphorous is _____.

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Textbook Evaluation Match The Following

1. 

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Textbook Evaluation State Whether The Following Statements Are True Or False If False Correct The Statement

1. Two elements sometimes can form more than one compound .

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2. Noble gases are Diatomic

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3. The gram atomic mass of an element has no unit

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4. 1 mole of Gold and silver contain same number of atoms

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5. Molar mass of CO_2 is 42 g.

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Textbook Evaluation Assertion And Reason

1. Assertion : atomic mass of aluminium is 27

Reason : an atom of aluminium is 27 times heavier than $\frac{1}{12^{th}}$ of the

mass of the C- 12 atom .

A. A and R are correct . R explains the A .

B. A is correct , R is wrong .

C. A is wrong , R is correct

D. A and R are correct , R doesn't explains A .

Answer: D

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2. Assertion : the relative molecular mass of chlorine is 35.5 a.m.u

Reason : the natural abundance of chlorine isotopes are not equal .

A. A and R are correct . R explains the A .

B. A is correct , R is wrong .

C. A is wrong , R is correct

D. A and R are correct , R doesn't explains A .

Answer: C

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Textbook Evaluation Short Answer Questions

1. Define relative atomic mass .

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2. Write the different types of isotopes of oxygen and its percentage abundance .

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3. Define atomicity .

Watch Video Solution

4. Give any two example for heterodiatomic molecules .

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5. Define molar volume.

Watch Video Solution

6. Find the percentage of nitrogen in ammonia

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Textbook Evaluation Long Answer Questions

1. Calculate the number of water molecules present in one drop of water which weights 0.18 g.

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2. $N_2 + 3H_2 \rightarrow 2NH_3$

The atomic mass of nitrogen is 14, and that of hydrogen is 1)

1 mole of nitrogen (_____ g)+

3 mole of hydrogen (_____ g) $\rightarrow$

2 moles of ammonia (_____ g)

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3. Calculate the number of moles in

27 g of Al

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4. Calculate the number of moles in

1.51×10^{23} Molecules of NH_4Cl

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5. Give the salient features of " Modern atomic theory ".

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6. Derive the relationship between relative molecular mass and Vapour density.

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Textbook Evaluation Hot Question

1. Calcium carbonate is decomposed on heating in the following reaction

$CaCO_3 \rightarrow CaO + CO_2$

How many moles of Calcium carbonate are involved in this reaction ?

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2. Calcium carbonate is decpmposed on heating in the following reaction

$CaCO_3 \rightarrow CaO + CO_2$

Calculate the gram molecular mass of calcium Carbonate involved in this reaction .

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3. Calcium carbonate is decpmposed on heating in the following reaction

$CaCO_3 \rightarrow CaO + CO_2$

How many moles of CO_2 are there in this equation ?

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Textbook Evaluation Solve The Following Problems

1. How many grams are there in the following ?

2 moles of hydrogen molecule , H_2

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2. How many grams are there in the following ?

3 moles of chlorine molecule , Cl_2

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3. How many grams are there in the following ?

5 moles of sulphur molesule , S_8

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4. How many grams are there in the following ?

4 moles of phosphorous molecules , P_4

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5. Calculate the % of each element in calcium carbonate. (Atomic mass: C-12, O-16, Ca-40)

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6. Calculate the % of oxygen in $Al_2(SO_4)_3$.

(Atomic mass : $Al - 12, O - 16, S - 32$)

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7. Calculate the % relative abundance of B-10 and B-11 , if its average atomic mass is 10 .804 amu .

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Government Exam Questions Answers

1. Calculate the mass of 1.51 $\times 10^{23}$ molecule of H_2O.

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2. Calculate the moles of 46 g sodium .

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3. calculate the number of molecules present in the 36 g water .

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Additional Questions Answer Choose The Correct Answer

1. The mass of an atom in measured in _____.

A. kg

B. amu

C. g

D. Pm

Answer: B

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2. Atoms of different elements with different atomic numbers , but same mass number are known as _____.

A. isobars

B. isotopes

C. isotones

D. isomers

Answer: A

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3. Pick out the isotopes among the following pairs

A. ${}_6C^{13}, {}_7N^{14}$

B. ${}_{18}Ar^{40}, {}_{20}Ca^{40}$

C. ${}_6C^{12}, C_6^{14}$

D. ${}_5B^{12}, {}_6C^{13}$

Answer: C

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4. Which among the following is a homo atomic molecule ?

A. N_2

B. NH_3

C. HCI

D. N_2O

Answer: A

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5. Identify the 'hetero nuclear tri atomic molecules ' among the following .

A. P_4

B. H_2SO_4

C. CO_2

D. O_3

Answer: D

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6. Mass number is the

A. Number of protons

B. Sum of protons and electrons

C. Number of neutrons

D. Sum of protons and neutrons

Answer: D

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7. Which of the following statement regarding an atom is always correct ?

A. An atom has equal number of electrons and protons

B. An atom has equal number of electrons and neutrons

C. An atom has equal number of electrons protons and neutrons

D. An atom has equal number of protons and neutrons

Answer: A

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8. Atomicity of chlorine and Neon is

A. Mono atomic and mono atomic

B. Mono atomic and diatomic

C. diatomic and diatomic

D. Diatomic and mono atomic

Answer: D

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9. Mass of an electron is _____.

A. $9.1083 \times 10^{-31} Kg$

B. $9.1083 \times 10^{-24} Kg$

C. $1.67262 \times 10^{27} KG$

D. $1.67 \times 10^{-24} gm$

Answer: A

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10. Which of the following pairs are isotopes ?

A. Oxygen and ozone

B. Ice and water

C. NO and NO_3

D. Hydrogen and deuterium

Answer: D

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11. The atomic number of an element is 12 and its mass number is 24. The number of elecetrons , protons and neutrons respectivity will be

A. 12,12,24

B. 24,12,12

C. 12,12,12

D. 12,24,12

Answer: C

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12. An atom which has a mass number of 14 and 8 neutrons is an

A. isotopes is an

B. isotope of oxygen

C. isotope of carbon

D. isobar of carbon

Answer: C

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13. Which of the following has an equal number of neutrons and protons?

A. protium

B. deuterium

C. tritium

D. Magnesium

Answer: D

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14. An atom of an element has 13 electrons and mass number 27. the nucleus of this atom contains _____ neutrons.

A. 26

B. 13

C. 14

D. 27

Answer: C

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15. The relative atomic masses of many elements are not whole number because

A. they are not determined accurately

B. they exist as isotopes

C. due to impurities

D. atoms ionize

Answer: B

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16. The smallest particle of an element which involue in a chemical reaction is

A. Atom

B. molecule

C. mole

D. Avogaro's molecule

Answer: A

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17. ${}_{17}Cl^{35}$, ${}_{17}Cl^{37}$ from the pair of

A. Isotope

B. isonar

C. isotone

D. isomer

Answer: A

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18. Isotones have equal number of

A. Proton

B. Electron

C. Neutron

D. atom

Answer: C

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19. The atomicity of chlorine is

A. 1

B. 4

C. 8

D. 2

Answer: D

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20. Total number of atoms in 4g of oxygen molecules is

A. 6.023×10^{23}

B. 7.52×10^{22}

C. 1.5055×10^{23}

D. 0.752×10^{23}

Answer: B

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21. Which of the following contains maximum number of molecules ?

A. $1 g of N_2$

B. $1 g of CO_2$

C. $1 g of H_2$

D. $1 g of O_2$

Answer: C

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22. What is the mass of 12.044×10^{23} number of O_2 molecules ?

A. 8g

B. 16g

C. 32 g

D. 64 g

Answer: D

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23. The total number of electrons present in 16 g of methane gas is

A. 96.352×10^{23}

B. 48.176×10^{23}

C. 6.023×10^{24}

D. 30.11×10^{23}

Answer: C

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24. The number of atoms in 0.1 mole of a triatomic gas is

A. 6.023×10^{22}

B. 1.806×10^{23}

C. 3.6×10^{23}

D. 1.8×10^{22}

Answer: B

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25. The number of particles present in one mole of any substance is equal to

A. 6.023×10^{23}

B. 60.23×10^{23}

C. 6.023×10^{27}

D. 60.23×10^{27}

Answer: A

Watch Video Solution

26. Total number of molecules in $44g$of CO_2 is

A. 6.023×10^{23}

B. 6.023×10^{24}

C. 1.806×10^{24}

D. 18.06×10^{22}

Answer: A

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27. What mass of hydrogen and oxygen will be produced on complete electrolysis of 18 g of water

A. 2 g hydrogen and 32 g oxygen

B. 2 g hydrogen and 16 h oxygen

C. 4 g hydrogen and 32 g oxygen

D. 4 g hydrogen and 14 ocygen

Answer: B

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28. Which of the following contains maximum number of molecules

A. 1 g of CO_2

B. 1 g of N_2

C. 1 g of H_2

D. 1 g of CH_4

Answer: C

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29. Which of the following correctly represent 360 g of water ?

(i) 2 mole of H_2O

(ii) 20 moles of water

$(iii) 6.023 \times 10^{23}$ molecules of water

(iv) 1.2046×10^{24} molecule of water

A. (i)

B. (i) and (iv)

C. (ii) and (iii)

D. (ii)

Answer: D

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30. Which of the following has largest number of particels ?

A. $8g$ of CH_4

B. $4.4g$Of CO_2

C. $34.2g$of $C_{12}H_{22}O_{11}$

D. $2g$of H_2

Answer: D

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31. The number of molecules in 16.0 g of oxygen is :

A. 6.023×10^{23}

B. 6.023×10^{-23}

C. 3.01×10^{-23}

D. 3.0115×10^{23}

Answer: D

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32. The mass of sodium in 11.7 g of sodium chloride is :

A. 2.3 g

B. 4.6 g

C. 6.9 g

D. 7.58 g

Answer: B

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33. The formula of a chloride of a metal M is MCl_3, the formation of the phosphate of metal M will be :

A. MPO_4

B. M_2PO_4

C. M_3PO_4

D. $2(PO_4)_3$

Answer: A

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34. Which of the following contains the largest number of molecules ?

A. $0.2molH_2$

B. $8.0gH_2$

C. $17gofH_2O$

D. $60gofCO_2$

Answer: B

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35. One gram of which of the following contains largest number of oxygen atoms ?

A. O

B. O_2

C. O_3

D. All contains same

Answer: C

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36. One mole of a gas occupies a volume of 22.4 l . This is derived from :

A. Berzelius 's Hypothesis

B. Gay-Lussac's law

C. Avogardro's law

D. Dalton's law

Answer: C

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37. A group of atoms chemically bonded together is a (an) :

A. Molecule

B. atom

C. Salt

D. Element

Answer: A

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38. The mass of one C atom is :

A. $6.023 \times 10^{23} g$

B. $1.99 \times 10^{-23} g$

C. $2.00 g$

D. $12 g$

Answer: B

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39. Adding electrons to an atom will result in a (an) :

A. Molecule

B. Anion

C. Cation

D. Salt

Answer: B

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40. The molecule formula P_2O_5 means that :

A. A molecule contains 2 atoms of P and 5 atoms of O

B. The ratio of the mass of P to the mass of O in the molecule is 2:5

C. There are twice as many P atoms in the molecule as there are O atoms

D. The ratio of the mass of P to the mass of O in the molecule is 5 :2

Answer: A

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41. 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

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42. The total number of atoms represented by the compound $CuSO_4 . 5H_2O$ is

A. 27

B. 21

C. 5

D. 8

Answer: B

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43. The volume occupied by 4.4 g of CO_2 at STP is :

A. 22.4 l

B. 2.24 l

C. 0.224 l

D. 0.1 l

Answer: B

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44. Volume of a gas at STP is 1.12×10^{-7}. Calculate the number of molecules in it :

A. 3.01×10^{20}

B. 3.01×10^{15}

C. 3.01×10^{23}

D. 3.01×10^{24}

Answer: B

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45. The number of molecules of CO_2 present in 44 g of CO_2 is :

A. 6.023×10^{23}

B. 3×10^{23}

C. 12×10^{23}

D. 3×10^{10}

Answer: A

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46. How many molecule are present in one gram of hydrogen ?

A. 6.023×10^{23}

B. 3.0115×10^{23}

C. 2.5×10^{23}

D. 1.5×10^{23}

Answer: B

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47. Which of the following is a diatomic molecule ?

A. CO

B. CO_2

C. SO_3

D. PO_4

Answer: A

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48. Aromicity of Sulphur is

A. 1

B. 2

C. 4

D. 8

Answer: D

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49. Which of the following has the highest number of molecule ?

A. $2gofH_2$

B. $34.2gofC_{12}H_{22}O_{11}$

C. $4.4gofCO_2$

D. $8gofSO_2$

Answer: A

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50. Isotopes have

A. Same physical properties and differenet chemical properties

B. Same chemical properties and different physical properties

C. Same physical and chemical properties

D. Different physical and chemical properties

Answer: B

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51. The vapour density of the Helium gas is

A. Equal to 1

B. less than 1

C. Greater than 1

D. 0

Answer: C

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52. The gram molecular mass of CO_2 is

A. 16 g

B. 18 g

C. 44 g

D. 17 g

Answer: C

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53. $2 \times$ Vapour density is equal to

A. Gram molecular weight

B. Relative molecular weight

C. Atomic weight

D. Gram atomic weight

Answer: B

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Additional Questions Answer Fill In The Blanks

1. The mass of the molecule of an element or compound is measured in _____ scale .

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2. The value of Avogardro's number is _____.

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3. _____ is the smallest indivisible entity of matter .

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4. ${}_{17}Cl^{35}$ and ${}_{17}Cl^{37}$ are _____ .

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5. Isotopes have same _____ but different _____.

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6. The mass of an atom is concentrated in a small region of space called the _____.

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7. The subatomic particle which is not present in hydrogen atom is _____.

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8. Anything that has mass and occupies space is called _____.

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9. The number of electrons present in hydrogen atom is _____.

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10. Atomicity of oxygen is_____.

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11. HCI is an example of _____ molecule .

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12. An example of homotriatomic molecule is _____.

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13. Gram molar mass of H_2O is _____.

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14. The allotrope of oxygen is _____.

Watch Video Solution

15. Relative molarcular mass of sulphuric acid is _____.

Watch Video Solution

16. One mole of any gas at STP occupies _____.

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17. Atoms of the same element may have different _____.

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18. The mass of macroscopic materials are mesured in _____ or _____.

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19. The atomic mass of an element is expressed in grams is known as _____.

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20. The smallest particle of an element which involue in a chemical reaction is

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21. Number of protons and number of electrons are always equal in _____.

Watch Video Solution

22. Atoms of same element has same number of _____.

Watch Video Solution

23. Hydrogen has _____isotopes .

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24. The molecule is made similar kind of atoms is called _____.

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25. The molecule that consist of atoms of different elements are called _____ molecule.

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26. The molecules contains more than two atoms are called _____ molecule.

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27. Atom was proposed by _____.

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28. The symol ' amu "u' denotes unified _____.

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29. The gram atomic mass of an element is expressed in _____.

Watch Video Solution

30. A compound is a ____ molecule.

View Text Solution

31. STP means _____.

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32. One mole of oxygen contains _____ atoms of oxygen

View Text Solution

33. The volume occupied by one mole of any gas at STP is called as _____.

View Text Solution

34. The mass of one mole of a compound at STP is equal to its _____.

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35. Gram molar volume of all gases can be determined by _____.

Watch Video Solution

36. Matter is made up of _____.

Watch Video Solution

37. Atoms of the same element may have different _____.

Watch Video Solution

38. Atoms of different elements may have _____ atoms masses .

Watch Video Solution

39. _____ are the building block of matter .

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40. An atom contains _____ particles such as protons , neutrons and electrons .

Watch Video Solution

41. Protons and neutrons have considerable _____.

Watch Video Solution

42. The mass of a proton or neutron is approximately _____amu .

Watch Video Solution

43. Relative atomic mass of otherwise known as _____.

Watch Video Solution

44. _____ is the smallest particle that takes part in a chemical reaction .

Watch Video Solution

Watch Video Solution

45. The mass of an atom can be converted into _____.

Watch Video Solution

46. Anything that has mass and occupies space is called _____

Watch Video Solution

47. Electrons does't have considerable _____.

Watch Video Solution

48. The sum of the number of _____and ____of an atoms is called its mass number .

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49. The mass of an atom is measured in _____.

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50. Atomic mass unit is _____ of the mass of a carbon 12 atom .

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51. Isotope of carbon , contains _____ protons and _____ neutrons .

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52. Modern method of determination of atomic mass by _____ uses C-12 as standard.

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53. The atomic mass of an element expressed in grams is called as _____.

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54. _____ is the most abundant element in the Earth's Crust .

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55. The molecule that consist of atoms of different elements is called _____ molecules.

Watch Video Solution

56. _____ gas exists in two allotropic forms.

Watch Video Solution

57. According to Modern atomic theory , an atom is _____.

Watch Video Solution

58. Isotopes differ in _____.

Watch Video Solution

59. Isobars differ in _____.

Watch Video Solution

60. ${}_{17}Cl^{35}$ and ${}_{17}Cl^{37}$ are _____.

Watch Video Solution

61. ${}_{18}Ar^{49}$ and ${}_{29}Ca^{49}$ are _____.

Watch Video Solution

62. Mass of an atom is mainly contributed equal to _____.

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63. The mass of a proton present in a molecule is called its _____.

Watch Video Solution

64. The number of atoms present in a molecule is called its ___.

Watch Video Solution

65. Carbon monoxide is _____.

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66. Atomicity of carbondioxide is _____.

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67. Phosphorus molecule is a _____.

Watch Video Solution

68. Relative molecular mass is only a ratio , it has _____.

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69. ____ based on the relationship between the number of molecules present in equal volumes of gases in different conditions.

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70. If the molecular mass of a compound is expressed in grams , it is called as _____.

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71. Hydrogen and Oxygen are _____ molecules .

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72. Ozone is a ___ molecule.

Watch Video Solution

73. If a molecule contains more than three atoms , it is called _____ molecule.

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74. Hydrogen chloride is a _____ molecule.

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75. ___ is the smallest particle of a element .

Watch Video Solution

76. _____ is the smallest particle of an element or compound .

Watch Video Solution

77. _____ does not exist in free state except in noble gases .

Watch Video Solution

78. Molecule exists in a _____State .

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79. Water is a ____ molecule.

Watch Video Solution

80. _____ does not have a chemical bond .

Watch Video Solution

81. Atoms in a molecule are held by ___.

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82. ____ denotes the number of particles .

Watch Video Solution

83. Avogardro's Law explans _____.

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84. Molecular formula of gases can be derived using _____.

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85. Elements having the same atomic number , but different mass number are called___.

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86. Average atom of an element is calculated by adding the masses of its _____.

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87. Atomicity of a monoatomic element is _____.

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88. The standard Temperature element is _____.

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89. The standard pressure is _____.

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90. Avogardro number is named after an Italian scientist _____.

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91. 5 Moles of oxygen molecule contains _____ molecules.

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92. The precentage composition of a compound represent the mass of each element present in _____ of the compound .

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93. Avogadro's Law determine the relation between molecular mass and _____.

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94. Equal volumes of all gases contain equal number of _____.

Watch Video Solution

95. Relative molecular mass =_____.

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Additional Questions Answer Use The Analogy To Fill In The Blank

1. 1 Mole of atom : 6.023×10^{23} :: Molar volume : _____.

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2. CO_2, H_2O : Triatomic :: S_8, P_4: _____.

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3. Isotopes of oxygen : ${}_8O^{17}$, ${}_8O^{18}$ :: Isotopes of carbon :_____.

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4. Atoms : Highly reactive :: molecules : _____.

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Additional Questions Answer State Whether The Following Statements Are True Or False Correct The False Statement

1. An electron has mass that is very much less than proton.

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2. The nucleus of an atom consist of protons and electrons ..

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3. An example of hetro diatomic molecule is CO_2 .

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4. The mass of the molecule of an element or compound is measured in hydrogen scale.

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5. Avogadro's number is 6.023×10^{-23} .

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6. Atoms of the same element may have different atomic mass .

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7. Atoms can be created and destroyed

Watch Video Solution

8. relative atomic mass is expressed in grams .

Watch Video Solution

9. Atom does not have chemical bond

Watch Video Solution

10. an atom is no longer indivisible .

Watch Video Solution

11. anything that has mass and occupies space is called matter .

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12. The mass of macroscopic materials is litre .

Watch Video Solution

13. Chemist measure atoms and molecules in Kilogram .

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14. Atomicity of a monoatomic element = molecular mass/Atomic mass.

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Additional Questions Answer Assertion And Reason

1. Assertion : An atom is electrically neutral. Reason : Atoms have equal number of protons and electrons.

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: A

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2. Assertion : Atomicity of nitrogen is 2

Reason : Atpmicity $= \frac{\text{Molecular mass}}{\text{Atomic mass}}$

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: A

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3. Assertion : atomic masses of elements are whole numbers .

Reason : atoms of the same element exist as isotopes .

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: C

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4. Assertion : Molecular weight of SO_2 is double to that of O_2

Reason : one mole of SO_2 contains double the number of molecule present in one mole of O_2

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: D

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5. Assertion : 1 mole of O_2 and N_2 occupy 22.4l at S.T.P

Reason :Molar volume of all gases at S.T.P has the same value .

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: A

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6. Assertion : one amu of an atom equal to exactly $\frac{1}{12^{th}}$ of mass of C-12 atom .

Reason :Carbon - 12 isotopes was selected as standard.

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: A

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7. Assertion : Atomicity of sulphur is 8

Reason : 1 mole of an element contains 6.023×10^{23} atoms .

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason are true and reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: B

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8. Assertion : 81 g of Aluminium contains $3 \times 6.023 \times 10^{23}$ atoms

Reason : the mole is defined as the amount of substance which contains Avogadro's number of particles .

Reason : 81 g of aluminum contains 3 moles of aluminum , which will contain $3 \times 6.023 \times 10^{23}$ atoms.

A. Both assertion and Reason are true and Reason is correct explanation of assertion

B. both assertion and Reason is not the correct explanation of assertion

C. Assertion is false but reason is true

D. Assertion is true but reason is false

Answer: D

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9. Assertion : Homoatomic molecules are made of atoms of the same elements

reason : H_2O consists of hydrogen and oxygen

A. Assertion is right Reason is wrong

B. Assertion is wrong Reason is right

C. Reason explain Assertion

D. Reason does not explain assertion

Answer: D

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Additional Questions Answer Find The Odd One Out

1. N_2, CH_4, SO_3, H_2O

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Additional Questions Answer Answer In A Word

1. Which is the smallest particle that takes part in a chemical reaction ?

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2. Who proposed that volume of a gas at given temperature and pressure is proportional to number of particles?

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3. Atoms of same elements with same atomic number are called _____.

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4. Number of atoms present in polyatomic molecules .

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5. Give an example for monoatomic molecule .

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6. Give an example for diatomic molecule/

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7. Give an example of triatomic molecule.

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8. Give an example for polyatomic molecule.

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9. Molar volume of a gas at standard temperature is _____.

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10. Compounds which contains one or more atoms is called ____.

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11. _____molecules are made up of atoms of the same elements .

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12. _____molecules are made up of atoms of different element .

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13. How many number of atoms are present in a hydrogen molecules ?

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14. Molecular mass is the sum of _____.

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15. Relative molecular mass of a gas _____.

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16. Vapour density =_____.

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17. Gram molar volume =____.

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Additional Questions Answer Very Short Answers

1. What are nucleous ?

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2. Define atomic mass unit u.

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3. Measurement of atomic mass of an element is very diffcult ? Give reason .

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4. Define average atomic mass (AAM).

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5. Relative atomic mass has no unit . Explain ..

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6. What is a molecule ?

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7. What is homoatomic molecule ? Give two examples .

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8. What is a heteroatomic molecule ? Give two examples .

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9. Give an example of homotriatomic molecule.

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10. What is a polyatomic molecule ?

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11. Define mole .

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12. Sate aVogadro's Hypothesis .

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13. Define vapour density .

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14. What is gram atomic mass ? Give example ?

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15. How will you deduced atomicity of Homoatomic molecule ?

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16. What are isotopes ?

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17. Define atomic mass unit (amu).

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18. What is gram molecular mass ?

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19. Define mole .

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Additional Questions Answer Short Answers

1. Give the applications of Avogadro's hypothesis .

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2. Pick out the heteronuclear polyatomic molecules among the following and classify them based on their atomicity .

$C_6H_{12}, O_6P_4, Cl_2, NH_3, HCI, N_2CO_3, O_3, NH_4Cl, CaCO_3, O_2, SO_2$

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3. List difference between atom and molecules .

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4. Calculate the gram molecular mass of the following

CH_4

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5. Calculate the gram molecular mass of the following

CO_2

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6. Calculate the gram molecular mass of the following

NH_3

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Additional Questions Answer Long Answers

1. How will you determine the atomicity of gases using Avogadro's hypothesis ?

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Additional Questions Answer Numerical Problems

1. Find the gram molecular mass of carbon dioxide (CO_2).

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2. Calculate the number of moles in 81 g of Aluminum .

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3. Calculate the number of moles in 2g of NaOH .

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4. Find the mass of 2.5 mole of oxygen atom .

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5. Calculate the number of molecules in 11 g of CO_2

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Additional Questions Answer Higher Order Thinking Skills Hots

1. Composition of the nuclei of two atomic species X and Y are given .

	X	Y
Proton	8	8
Neutrons	8	10

Give the mass number of X and Y . What is the relation between the two species ?

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2. Why does not the atomic mass of an element represemt the actual mass of its atom ?

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3. The atomic mass of an element is in fraction . What does it mean ?

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4. Why is the value of Avogadro's number 6.022×10^{23} and not any other value ?

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5. Does one gram mole of a gas occupy 22.4 l under all conditions of temperature and pressure ?

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6. Silicon forms a compound with chlorine in which 5.6 g of silicon is combined with 21.3 g of chlorine .Calculate the formula of the compound .

(atomic mass Si = 28 : Cl = 35-5).

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7. On analysing an impure sample of sodium chloride , the percentage of chloride was found to be 45.5 what is the percentage of pure sodium chloride in the sample?

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