Q1. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Equal moles of different substances contain same number of constituent particles

Reason: Equal weights of different substances contain the same number of constituent particles.

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. A is false and R is also false.

Q2. The average molar mass of air becomes more in presence of which gas if present in air: **1 Marks**

A. H2 B. N2 C. C2H6 D. CH4

Q3. A compound contains 69.5% oxygen, 30.5% nitrogen and its molecular weight is 92. The formula of compound is:

A. N2O B. NO2 C. N2O4 D. N2O5

Q4. If the density of a solution is 3.12g mL^{-1}, the mass of 1.5mL solution in significant figures is _____.

A. 4.7g B. 4680 × 10–3g C. 4.680g D. 46.80g

Q5. The empirical formula and molecular mass of a compound are CH_2O and 180g respectively. What will be the molecular formula of the compound?

A. $C_9H_{18}O_9$
B. CH_2O
C. $C_6H_{12}O_6$
D. $C_2H_4O_2$

Q6. Which of the following subatomic particle is lightest?

A. Neutron B. Alpha particle C. Electron D. Deuterium

Q7. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

Assertion: A chemical equation must always be balanced to apply stoichiometric calculations.

Reason: Balancing ensures the number of atoms of each element is equal on both sides.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect
D. Assertion is incorrect but Reason is correct.

Q8. 1 u= ? **1 Marks**

A. The mass of one atom of the carbon -12 isotope
B. $\frac{1}{12}^{th}$ the mass of one atom of the carbon -16 isotope
C. $\frac{1}{12}^{th}$ the mass of one atom of the carbon -12 isotope
D. The mass of one atom of the carbon -16 isotope

Q9. Which is not one of the laws of chemical combinations? **1 Marks**

A. Law of multiple proportion.
B. Law of conservation of mass.
C. Law of conservation of energy.
D. Law of definite proportion.

Q10. In the following reaction, **1 Marks**

MnO_2, + 4HCl → $MnCl_2$ + $2H_2O$ +Cl_2

2 moles of MnO_2 react with 4 moles of HCl to form 11.2L Cl_2, at STP.

Thus, per cent yield of Cl_2 is:

A. 25% B. 50% C. 100% D. 75%

Q11. Two gases A and B are taken in same volume containers under similar conditions of temperature and pressure. In container A, there are '2N' molecules of gas A. The number molecules does container B have: **1 Marks**

A. N B. 0.5N C. 2N D. 4N

Q12. Dalton's atomic theory was based on: **1 Marks**

A. Law of chemical combination.
B. Mass theory.
C. Periodic table.
D. None of the above.

Q13. What is chemistry? **1 Marks**

A. Study of substances.
B. Investigation of reactions and properties.
C. Study of reactions to form new substances.
D. All of the above.

Q14. Which law states that if two elements can combine to form more than one compound, the masses of one element that combine with a fixed mass of other element, are in the ratio of small whole numbers? **1 Marks**

A. Avogadro's law.
B. Law of definite composition.
C. Law of multiple proportions.
D. Gay Lussac's law of gaseous volumes.

Q15. The solution of A and B are 0.1 and 0.2 molar in a substance. If 100ML of 'A' are mixed with 25mL of B and there is no change in volume, then the final molarity of solution is:

A. 0.15M B. 0.18M C. 0.12M D. 0.30M

Q16. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

Assertion: The empirical mass of ethene is half of its molecular mass

Reason: 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. Both A and R are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false and R is also false.

Q17. At same temperature and pressure, equal volumes of gases contain the same number of:

A. Molecules B. Electrons C. Protons D. Particles

Q18. Who laid the foundation of chemical sciences by experimentally establishing laws of chemical combination along with other scientists?

A. Proust.
B. Antoine Lavoisier.
C. Dalton.
D. None of the above.

Q19. Photo-electric cell is not used in: **1 Marks**

A. Television.
B. Photography.
C. Reproduction of sound in cinema.
D. Automatic switching of street lightening circuits.

Q20. Which of the following property of an element never changes? **1 Marks**

A. Valency
B. Atomic weight
C. Both A and B
D. None of the above

Q21. A solution is prepared by dissolving 5.64g of glucose in 60g of water. Calculate the mass percent of glucose. **1 Marks**

A. 8.59% B. 6.85% C. 9.34% D. 3.59%

Q22. When mass is enclosed in a system and no transfer of material and energy is allowed in or out, it's _____ will never change. **1 Marks**

A. Quality B. Quantity C. Temperature D. Shape

Q23. Mass of atom expressed in atomic mass unit is: **1 Marks**

A. Atomic mass
B. Molecular mass
C. Atomic number
D. None of the above

Q24. The mass of a sand and powdered mixture along with a beaker is 56g. If the mass of the dried mixture is 20g, find the % composition of the mixture in 100g?
(weight of beaker = 20g). **1 Marks**

A. 20%
B. 36%
C. 55%
D. 60%

Q25. Which of the following terms are unitless? **1 Marks**

A. Molality.
B. Molarity.
C. Mole fraction.
D. Mass percent.

Q26. The relative atomic mass of naturally occurring chlorine is not a whole number. What is the reason for this ? **1 Marks**

A. Chlorine atoms can have different number of neutrons.
B. Naturally occurring chlorine cannot be obtained pure.
C. Chlorine is unstable.
D. The mass of the electrons has been included.

Q27. What is the mass of the solvent present in 200g of 25% (w/ W) calcium hydroxide solution? **1 Marks**

A. 150g
B. 125g
C. 175g
D. 100g

Q28. Which law states that in a chemical reaction, the total mass of the products is equal to the total mass of the reactants?

A. Law of constant proportions
B. Law of conservation of energy
C. Law of conservation of mass
D. Law of multiple proportions

Q29. Two students performed the same experiment separately and each one of them 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.

Student	Readings	
	(i)	(ii)
A	3.01	2.99
B	3.05	2.95

A. Results of both the students are neither accurate nor precise.
B. Results of student A are both precise and accurate.
C. Results of student B are neither precise nor accurate.
D. Results of student B are both precise and accurate.

Q30. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**
Assertion: 1.231 has three significant figures
Reason: All numbers right to the decimal point are significant.

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. A is false and R is also false.

Q31. What is the atomic mass (u) of calcium? **1 Marks**

A. 10
B. 20
C. 30
D. 40

Q32. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**
Assertion: The empirical mass of ethene is half of its molecular mass.

Reason: 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. Both A and R are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false and R is also false.

Q33. What will be the molarity of a solution, which contains 5.85g of NaCl(s) per 500mL? **1 Marks**

A. 4mol L–1 B. 20mol L–1 C. 0.2mol L–1 D. 2mol L–1

Q34. A certain metal sulphide, MS_2, is used extensively as a high temperature lubricant. If MS_2 is 40.06% by mass of sulphur, metal M has atomic mass: **1 Marks**

A. 160amu B. 64amu C. 40amu D. 96amu

Q35. One a.m.u is defined as mass of: **1 Marks**

A. $\frac{1}{16}^{th}$ mass of one oxygen atom.
B. $\frac{1}{14}^{th}$ mass of one atom of nitrogen.
C. $\frac{1}{12}^{th}$ mass of one carbon -12 atom.
D. None of above.

Q36. One of the statements of Dalton's atomic theory is given below: **1 Marks**
"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.

Q37. How many moles are present in 6.023×10^{22} molecules of CO_2?

A. 0.2 B. 0.01 C. 0.1 D. 0.02

Q38. If the concentration of glucose ($C_6H_{12}O_6$) in blood is 0.9g L^{-1}, what will be the molarity of glucose in blood?

A. 5M B. 50M C. 0.005M D. 0.5M

Q39. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
Assertion: The atomic mass of an element is a relative quantity.
Reason: It is expressed relative to 1/12th the mass of a carbon-12 atom.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q40. A gas is found to have the formula $(CO)_x$. Its vapour density is 70. The value of x will be: **1 Marks**

A. 7 B. 4 C. 5 D. 6

Q41. Which scientist proposed the concept of atomic mass? **1 Marks**

A. Avogadro B. Gay Lussac C. Proust D. Dalton

Q42. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**
Assertion: Volume of a gas is inversely proportional to the number of moles of gas.
Reason: The ratio by volume of gaseous reactants and products is in agreement with their mole ratio.

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. A is false and R is also false.

Q43. Which statement is linked with the idea that two identical containers filled with different gases will contain the same number of particles? **1 Marks**

A. Mosely B. Avagadro C. Dalton D. Mendeleev

Q44. What will be the molarity of pure water? **1 Marks**

A. 18M. B. 50.0M. C. 55.6M. D. 100M.

Q45. Chemical hypothesis first emerged in Classical Greece by: **1 Marks**

A. Einstein B. Louis Pasteur C. Aristotle D. Leuweenhock

Q46. The matter is neither created nor destroyed during any physical or chemical change. This statement is of the: **1 Marks**

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

Q47. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: A reactant that is entirety consumed when a reaction goes to completion is known as limiting reaction.

Reason: The amount of limiting reactant limits the amount of product formed.

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. A is false and R is also false.

Q48. Atomic mass of an element is:

A. Actual mass of one atom of the element.
B. Average mass of an atom of different atoms of the element.
C. Always a whole number.
D. None of these.

Q49. All gases have the same number of moles in the same volume at constant temperature and pressure.

A. Boyle's Law
B. Charles's Law
C. Avogadro's Principle
D. Ideal Gas Lawa

Q50. Which one of the following properties of an element is not variable?

A. Valency
B. Atomic weight
C. Equivalent weight
D. All of these

Q51. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

Assertion: 22.4 L of any gas at STP contains one mole of molecules.

Reason: Avogadro's law states that equal volumes of gases at same temperature and pressure contain equal number of molecules.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q52. Chemistry is sometimes called as: **1 Marks**

A. Biological Science B. Central Science C. Biochemistry D. Both A and C

Q53. One mole of oxygen gas at STP is equal to _____. **1 Marks**

A. 6.022 × 1023 molecules of oxygen.
B. 6.022 × 1023 atoms of oxygen.
C. 16g of oxygen.
D. 32g of oxygen.

Q54. Which set of figures will be obtained after rounding upto three significant figures 1.386, 4.334, 2.808? **1 Marks**

A. 1.39, 4.34, 2.809
B. 1.39, 4.33, 2.81
C. 1.38, 4.34, 2.800
D. 1.39, 4.34, 2.80

Q55. 18.72g of a substance X occupies 1.81cm^3. What will be its density measured in correct significant figures? **1 Marks**

A. 10.3g/ cm3 B. 10.34g/ cm3 C. 10.4g/ cm3 D. 10.3425g/ cm3

Q56. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Molecular weight of a compound is 44 if its vapour density is 22.

Reason: Vapour density . 2= Molecular weight.

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. A is false and R is also false.

Q57. Who is given the credit for creation of first nuclear reactor. **1 Marks**

A. Fermi
B. Niels Bohr
C. Einstein
D. Oppenheimer

Q58. Who proposed atom as an indestructible entity? **1 Marks**

A. Rotherford
B. Dalton
C. Thomson
D. Pauli

Q59. 0.2429g sample of potassium is heated in oxygen, 0.440g of a crystalline compound is obtained. What is the formula of this compound? **1 Marks**

A. KO
B. K2O
C. KO2
D. KO3

Q60. Who is called father of modern chemistry ? **1 Marks**

A. Antoine Lavoisier.
B. Gilbert Lewis.
C. Gibbs.
D. Otto Hahn.

Q61. 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 Fe2O3 can be increased by taking any one of the reactants (iron or oxygen) in excess.
D. Amount of Fe2O3 produced will decrease if the amount of any one of the reactants (iron or oxygen) is taken in excess.

Q62. $Na_2SO_3 \cdot xH_2O$ has 50% H_2O by mass. Hence, x is:

A. 4
B. 5
C. 6
D. 7

Q63. Given that, the abundances of isotopes ^{54}Fe, $^{56}F4$ and ^{57}Fe are 5%, 90% and 5% respectively, the atomic mass of Fe is:

A. 55.85
B. 55.95
C. 55.75
D. 56.05

Q64. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Significant figures for 0.200 is 3 whereas for 200 it is 1

Reason: 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. A is false and R is also false.

Q65. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: **1 Marks**

Assertion: The molecular mass of CO_2 is 44 g/mol.

Reason: Carbon has atomic mass 12 u and oxygen has atomic mass 16 u.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q66. Active mass of 6% solution of compound X is 2. Molecular weight of X would be: **1 Marks**

A. 6 B. 30 C. 60 D. 90

Q67. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: **1 Marks**

Assertion: The empirical formula represents the exact number of atoms of each element in a molecule.

Reason: Molecular formula is the simplest whole number ratio of atoms in a molecule.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q68. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Number of g-molecules of SO_2Cl2_2 in 13.5 g of sulphuryl chloride is 0.2.

Reason: Gram-molecules is equal to those molecules which are expressed in gram.

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. A is false and R is also false.

Q69. What is % composition of a substance?

A. Sum of all the components.
B. % composition of the sum of two components.
C. % of the total mass of a substance.
D. None of the above.

Q70. Arrange the following in the order of increasing mass (Atomic mass of O = 16, Cu = 63 and N = 14).

a. One atom of oxygen.
b. One atom of nitrogen.
c. 1×10^{-10} mole of oxygen.
d. 1×10^{-10} mole of copper.

A. II < I < III < IV.
B. I < II < III < IV.
C. III < II < IV < I.
D. IV < II < III < I.

Q71. If $3.01 \times 10_{20}$ molecules are removed from 98 mg of H_2SO_4, then number of moles of H_2SO_4 left are:

A. 0.5 × 10-3mol.
B. 0.1 × 10-3mol.
C. 9.95 × 10-3mol.
D. 1.66 × 10-3mol.

Q72. Which of the following is used as standard for determination of atomic mass unit?

A. O16 B. C12 C. H1 D. O17

Q73. India's uranium supply comes mainly from the Jaduguda mines in: **1 Marks**

A. Bihar B. Madhya Pradesh C. Maharashtra D. None of these

Q74. An alkaloid contains 17.28% of nitrogen and its molecular mass is 162. The number of nitrogen atoms present in one molecule of alkaloid is: **1 Marks**

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

Q75. Which is the lightest element in the universe? **1 Marks**

A. Helium B. Hydrogen C. Nitrogen D. Silicon

Q76. Who performed the gold foil experiment? **1 Marks**

A. Thomson B. Goldstein C. Chadwick D. Rutherford

Q77. A sample of H_2SO_4 contains 3.2 kg of sulphur. The weight (in g) of hydrogen present in the sample is: **1 Marks**

A. 100 B. 200 C. 50 D. 150

Q78. The percentage value of nitrogen in urea is about: **1 Marks**

A. 46 B. 85 C. 18 D. 28

Q79. During any chemical change, the total mass of the products is equal to the total mass of reactants. This is a statement according to: **1 Marks**

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

Q80. X g of Ag was dissolved in HNO, and the solution was treated with excess of NaCl, when 2.87g of AgCl was precipitated. The value of x is: **1 Marks**

A. 1.08g. B. 2.16g. C. 2.70g. D. 1.62g.

Q81. An organic compound containing C, H and O has 49.3% carbon, 6.84% hydrogen and its vapour density is 73. Molecular formula of the compound is: **1 Marks**

A. C3H5O2 B. C4H10O2 C. C6H10O4 D. C3H10O2

Q82. What is the mass percent of carbon in carbon dioxide? **1 Marks**

A. 0.034% B. 27.27% C. 3.4% D. 28.7%

Q83. 800 g of a 40% solution by weight was cooled. 100g of solute was precipitated. The percentage composition of remaining solution is: **1 Marks**

A. 31.4% B. 20.0% C. 23.0% D. 24%

Q84. Sulphuric acid reacts with sodium hydroxide as follows:
$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_{2O}$
When 1L of 0.1M sulphuric acid solution is allowed to react with 1L of 0.1M sodium hydroxide solution, the amount of sodium sulphate formed and its molarity in the solution obtained is:

A. 0.1mol L–1 B. 7.10g C. 0.025mol L–1 D. 3.55g

Q85. Addition of 6.65×10^4 and 8.95×10^3, in terms of scientific notation will be:

A. 7.545 × 104 B. 75.45 × 103 C. 754.5 × 102 D. 75.45 × 100

Q86. The result reported in the following multiplication of significant figures,
$2.5 \times 1.25 = 3.125$ should be:

A. 3.125 B. 3.1 C. 3.12 D. 3.10

Q87. In chulhas, gaps are left between the logs:

A. To decrease the ignition temperature of the fuel.
B. To allow the air to enter and facilitate fuel burning.
C. To cut off the supply of air.
D. All of these.

Q88. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**
Assertion: One atomic mass unit is defined as one twelfth of the mass of one carbon-12 atom.
Reason: 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 are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false and R is also false.

Q89. Which gas law relates the volume of a gas to the number of molecules of the gas? **1 Marks**

A. Gay-Lussac's Law B. Avogadro's Law C. Boyle's Law D. Charle's Law

Q90. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**
Assertion: Combustion of 16 g of methane gives 18 g of water.
Reason: In the combustion of methane, water is one of the products.

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. A is false and R is also false.

Q91. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Atomicity of oxygen is 2.

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

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. A is false and R is also false.

Q92. Which of the following solutions have the same concentration? **1 Marks**

A. 20g of NaOH in 200mL of solution.
B. 0.5mol of KCl in 200mL of solution.
C. 40g of NaOH in 100mL of solution.
D. 20g of KOH in 200mL of solution.

Q93. Which of the following options is not correct? **1 Marks**

A. 8008 = 8.008 × 103
B. 208 = 3
C. 5000 = 5.0 × 103
D. 2.0034 = 4

Q94. Which of the following expression of concentration of a solution is independent of temperature? **1 Marks**

A. Molarity
B. Normality
C. Formality
D. Molality

Q95. A chemical equation is balanced in accordance with the law of:

A. Conservation of mass.
B. Multiple proportion.
C. Constant proportion.
D. Reciprocal proportion.

Q96. The average mass of the atom as compared to $\frac{1}{12}^{th}$ the mass of one carbon-12 atom is known as:

A. Molecular mass.
B. Atomic mass.
C. Relative molecular mass.
D. Relative atomic mass.

Q97. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

Assertion: Limiting reagent is the substance that is present in the lowest quantity in a chemical reaction.

Reason: The limiting reagent limits the amount of product formed.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q98. A compound was found to contain 5.37% nitrogen. What is the minimum molecular weight of compound ?

A. 26.07
B. 2.607
C. 260.7
D. None of these

Q99. $25cm^3$ of oxalic acid completely neutrelised 0.064g of NaOH. Molarity of oxalic acid solution is: **1 Marks**

A. 0.064.
B. 0.045.
C. 0.015.
D. 0.032.

Q100. The modern atomic mass unit is based on the mass of: **1 Marks**

A. C-12 isotope
B. Hydrogen
C. Oxygen
D. Nitrogen

Q101. Which law is not applicable for a nuclear reaction where large amount of energy is released? **1 Marks**

A. Law of conservation of mass.
B. Law of definite proportion.
C. Law of multiple proportion.
D. Avagrado's law.

Q102. Which term describes the mass of 6.022×10^{23} representative particles? **1 Marks**

A. Molar mass.
B. Avogadro's number.
C. Empirical formula.
D. Molecular formula.

Q103. How many number of aluminium ions are present in 0.051g of aluminium oxide? **1 Marks**

A. 6.023 × 1023 ions.
B. 3 ions.

C. 6.023 × 1020 ions.
D. 9 ions.

Q104. The concentration of a solution or the amount of substance present in its given volume can be expressed in which of the following ways? **1 Marks**

A. Mass percent or weight per cent (w/ w%).
B. Mole fraction or molarity.
C. Molality.
D. All of the above.

Q105. According to Indian and Greek philosophers at 400 B.C. the continuous sub-division of matter would ultimately yield _____ **1 Marks**

A. Atom
B. Electron
C. Proton
D. Neutron

Q106. The mass number of sulfur atom is: **1 Marks**
(Given: Atomic number = 16 and number of neutrons = 16)

A. 18
B. 32
C. 24
D. 16

Q107. 1.020g of metallic oxide contains 0.540g of the metal. If the specific heat of the metal, M is 0.216 cal $deg^{-1}g^{-1}$. The molecular formula of its oxide is: **1 Marks**

A. MO
B. M2O3
C. M2O4
D. M2O

Q108. French chemist _____ laid the foundation to the scientific investigation of matter by describing that substances react by following certain laws.

A. Dalton
B. Rutherford
C. Antony van Leeuwenhoek
D. A. Lavoisier

Q109. An organic compound containing C and H has 92.3% of carbon, its empirical formula is:

A. CH
B. CH3
C. CH2
D. CH4

Q110. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
Assertion: The molar mass of oxygen (O_2) is 16 g/mol.
Reason: Oxygen exists as a diatomic molecule.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q111. It can be shown using mass spectrometry that the ratio of naturally occurring chlorine -35 to its isotope chlorine -37 is 3 : 1. Assuming that no other isotopes existed, what would be the atomic weight of chlorine?

A. 35.5
B. 37.5
C. 36.6
D. None of the above

Q112. What is the mass of one atom of C–12 in grams? **1 Marks**

A. 1.992 × 10–23gm
B. 1.989 × 10–23gm
C. 1.892 × 10–23gm
D. 1.965 × 10–23gm

Q113. A solution is prepared by adding 2g of substance A to 1 g of water. The mass percent of the solute is: **1 Marks**

A. 10
B. 20
C. 40
D. 25

Q114. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: **1 Marks**
Assertion: Molar volume of a gas at STP is 24.0 L.
Reason: STP conditions are defined as 298 K and 1 atm.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q115. Which of the following statements is/ are incorrect? **1 Marks**

A. The weight of a substance can be determined very accurately by using an analytical balance.
B. Volume is denoted in dm units.
C. Density of a substance is its amount present per unit volume.
D. Candela is the luminous intensity, that emits monochromatic radiation of frequency, 540 × 1012 Hz.

Q116. The chemical equation is balanced to satisfy one of the following laws in chemical reactions. This law is known as the: **1 Marks**

A. law of conservation of mass.
B. law of multiple proportions
C. law of chemical equilibrium.
D. None of these.

Q117. Law of conservation of mass was put forward by: **1 Marks**

A. Lavoisier B. Dalton C. Priestly D. Thomson

Q118. When two molecules of hydrogen react with one molecule of oxygen, the mass of reactants is 36, what is the mass of products? **1 Marks**

A. 18 B. 36 C. 9 D. 32

Q119. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Molar volume of gases change considerably with temperature and pressure.

Reason: Molar volume of a substance is the volume occupied by 1 mole of that substance.

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. A is false and R is also false.

Q120. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

Assertion: One mole of NaCl contains 6.022×10^{23} formula units.

Reason: NaCl is an ionic compound and forms formula units, not molecules.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q121. A bivalent metal has an equivalent mass of 32. The molecular mass of the metal nitrate is:

A. 182 B. 168 C. 192 D. 188

Q122. 1g of M_2CO_3 on treatment with excess HCl produces 0.01186 moles of CO_2 The molar mass of M_2CO_3 in g mor^{-1} is:

A. 1186 B. 84.3 C. 118.6 D. 11.86

Q123. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: One mole of SO_2 contains equal the number of molecules present in one mole of O_2.

Reason: Molecular weight of SO_2 is half to that of O_2.

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. A is false and R is also false.

Q124. Which of the following pairs have the same number of atoms? **1 Marks**

A. 16g of O2(g) and 4g of H2(g)
B. 16g of O2 and 44g of CO2
C. 28g of N2 and 32g of O2
D. 12g of C(s) and 23g of Na(s)

Q125. The volume of 0.5M aqueous NaOH solution required to neutralize 10ml of 2M aqueous HC1solution is: **1 Marks**

A. 20ml B. 40ml C. 80ml D. 120ml

Q126. % composition requires ..... of the compound: **1 Marks**

A. Molar mass
B. Temperature
C. Atmospheric pressure
D. Both a and b

Q127. Gram molar volume for a gas is always considered at ____ conditions. **1 Marks**

A. NTP
B. STP
C. Variable temperature
D. None of these

Q128. The empirical formula of a compound is CH_2. One mole of this compound has a mass of 42g. Its molecular formula is a: **1 Marks**

A. C3H6
B. C2H8
C. CH2
D. C2H2

Q129. A hydrocarbon was found to contain 85.7% by mass of carbon and 14.3% by mass of hydrogen. Molar mass of hydrocarbon is 56g mot^{-1}. The formula for hydrocarbon is **1 Marks**

A. CH4
B. C2H4
C. C4H8
D. C5H10

Q130. Determine the mass by mass percentage concentration of a 100g salt solution which contains 20g salt. **1 Marks**

A. 30%
B. 20%
C. 80%
D. None of these

Q131. Who is considered as the founding father of chemistry?

A. Boyle
B. Aristotle
C. Sir Francis
D. John Mayow

Q132. What is the percentage by weight of sulphuric acid if 13g of H_2SO_4 is dissolved to make 78g of solution?

A. 13.2%
B. 14.28%
C. 20%
D. 16.6%

Q133. A device for measuring temperatures at a distance is:

A. Gas thermometer.
B. Mercury thermometer.
C. Radiation pyrometer.
D. Maximum-minimum thermometer.

Q134. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
Assertion: In a balanced chemical equation, the total mass of products is greater than the total mass of reactants.
Reason: Mass is not conserved in a chemical reaction.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q135. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**
Assertion: One atomic mass unit is defined as one twelfth of the mass of one carbon - 12 atom.
Reason: Carbon-12 isotope is the most abundunt 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 are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false and R is also false.

Q136. Which one of the following scientist's proposed the law of conservation of mass? **1 Marks**

A. J.J. Thomson
B. John Dalton
C. Rutherford
D. Berzelius

Q137. An organic compound on analysis was found to contain 10.06% carbon, 0.84% hydrogen and 89.10% chlorine. What will be the empirical formula of the substance? **1 Marks**

A. CH2Cl2
B. CHCl3
C. CCl4
D. CH3Cl

Q138. Which of the following statements about a compound is incorrect? **1 Marks**

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.

Q139. Which law stated that 'matter is neither created nor destroyed'? **1 Marks**

A. Law of multiple proportion.
B. Law of conservation of energy.
C. Law of constant composition.
D. Law of conservation of mass.

Q140. 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? **1 Marks**

A. 4g He
B. 46g Na
C. 0.40g Ca
D. 12g He

Q141. Mass number is denoted by: **1 Marks**

A. D
B. S
C. A
D. Z

Q142. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Molarity of a solution represents its concentration.
Reason: Molarity is the number of moles of solute per litre of solution.

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. A is false and R is also false.

Q143. Elements X, Y and Z have atomic numbers 5, 9 and 11 respectively. Which one forms an anion?

A. X
B. Y
C. Z
D. Both B and C

Q144. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

Assertion: The number of molecules in 2 moles of a substance is 1.204×10^{24}.
Reason: One mole contains 6.022×10^{23} molecules.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q145. A hydrocarbon was found to contain 75% by mass of carbon and 25% by mass of hydrogen. What is empirical formula of the compound?

A. C2H4
B. C2H6
C. CH4
D. C6H6

Q146. A student performs a titration with different burettes and finds titre values of 25.2mL, 25.25mL and 25.0mL. The number of significant figures in the average titre value is: **1 Marks**

A. 1
B. 2
C. 3
D. 4

Q147. Under the same conditions, two gases have the same number of molecules. They must: **1 Marks**

A. Be noble gases.
B. Have equal volumes.
C. Have a volume of 22.4 dm3 each.
D. Have an equal number of atoms.

Q148. What will be the molality of the solution containing 18.25g of HCl gas in 500g of water? **1 Marks**

A. 0.1m
B. 1M
C. 0.5m
D. 1m

Q149. Which law was given by Antoine L. Lavoisier? **1 Marks**

A. Laws of multiple proportion
B. Law of conservation of mass
C. Both A and B
D. None of the above

Q150. If 500mL of a 5M solution is diluted to 1500mL, what will be the molarity of the solution obtained? **1 Marks**

A. 1.5M
B. 1.66M
C. 0.017M
D. 1.59M

Q151. The laws of chemical combination formed on the basis of: **1 Marks**

A. Dalton's atomic theory
B. Dalton's mass theory
C. Both A and B
D. None of the above

Q152. Which of the following reactions is not correct according to the law of conservation of mass. **1 Marks**

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. $CH_4(g) = 2O_2(g) \rightarrow CO_2(g) + 2H_2O(g)$

Q153. Which of the following is the best thing to do during heavy lighting? **1 Marks**

A. Lying on the ground in an open place.
B. Going into the nearest water body.
C. Staying indoors away from metallic doors or windows.
D. Standing under a tall tree.

Q154. Avogadro's law finds an application in the determination of: **1 Marks**

A. Atomicity of gas.
B. Molecular weights of gases.
C. Molecular formula of certain gaseous compoun.
D. All the above.

Q155. The weight ratio of roasted ore, coke and limestone fed into the blast furnace in the manufacture of cast iron is: **1 Marks**

A. 8 : 1 : 4
B. 6 : 4 : 1
C. 8 : 4 : 1
D. 8 : 4 : 3

Q156. Which law states that the total mass of the reactants is equal to the total mass of the products in a chemical reaction?

A. Law of constant proportions.
B. Law of conservation of energy.
C. Law of conservation of mass.
D. Law of multiple proportions.

Q157. Which is the 1st organic compound synthesized in lab?

A. Urea
B. Methanol
C. Ammonia
D. Sulphuric Acid

Q158. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:
Assertion: One mole of water contains 6.022×10^{23} molecules.
Reason: One mole of any substance contains Avogadro's number of entities.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q159. The value of 1 amu is equal to:

A. 1.66 × 10−8g
B. 1.66 × 10−4g
C. 1.66 × 10−16g
D. 1.66 × 10−24g

Q160. The relative atomic masses of many elements are not whole numbers because: **1 Marks**

A. Of different natural abundance of different isotopes
B. Of the concept average atomic masses
C. Of the existence of isotopes
D. All of these

Q161. The mass of hydrogen at STP, that is present in a vessel which can hold 4 grams of oxygen under similar conditions, is: **1 Marks**

A. 1gm
B. 0.5gm
C. 0.25gm
D. 0.125gm

Q162. According to the Avogadro's Law, equal volumes of two different gases, under same conditions of temperature and pressure, contain equal number of: **1 Marks**

A. Atoms
B. Molecules
C. Electrons
D. Protons

Q163. Equal volume of gases contain equal number of moles.State whether the above statement is true or false. **1 Marks**

A. The statement is True.
B. The statement is False.
C. Neither.
D. Equal volume of gases contain equal number of moles, only when the temperature is increased.

Q164. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: **1 Marks**

Assertion: Percentage composition is used to determine the empirical formula of a compound.

Reason: Percentage composition gives the relative amount of each element in a compound.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q165. When an inflated tyre bursts, the air escaping out will: **1 Marks**

A. Get heated up
B. Be cooled
C. Not undergo any change in its temperature
D. Be liquified

Q166. What will be the ratio of Cl^{35} and Cl^{37} respectively in ordinary chlorine if the atomic weight of chlorine is 35.5 ? **1 Marks**

A. 1 : 3 B. 3 : 1 C. 1 : 2 D. 2 : 1

Q167. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: **1 Marks**

Assertion: A balanced chemical equation satisfies the Law of Conservation of Mass.

Reason: Atoms can be created or destroyed in a chemical reaction.

A. Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q168. What will be the molality of the solution made by dissolving 10g of NaOH in 100g of water?

A. 2.5m. B. 5m. C. 10m. D. 1.25m.

Q169. Modern atomic mass scale is based on the mass of:

A. H –1 B. C –12 C. C –14 D. C –16

Q170. When magnesium is burnt in air, the weight of magnesium:

A. Increases
B. Decreases
C. Remains same
D. Depends on the atmosphere

Q171. Uncertainty Principle was given by:

A. Heisenberg B. Thomson C. Rutherford D. Bohr

Q172. This is the branch of chemistry deals with chemistry of elements other than carbon and of their compounds:

A. Physical chemistry
B. Inorganic chemistry
C. Organic chemistry
D. Analytical chemistry

Q173. Zinc sulphate contains 22.65% zinc and 43.9% water of crystallisation. If the law of constant proportions is true then the weight of zinc required to produce 20g of the zinc sulphate crystals will be: **1 Marks**

A. 45.3g. B. 4.53g. C. 0.453g. D. 453g.

Q174. What is the atomic mass (u) of chlorine? **1 Marks**

A. 34 B. 35.5 C. 33 D. 35

Q175. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: The balancing of chemical equations is based on law of conservation of mass.

Reason: Total mass of reactants is equal to total mass of products.

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. A is false and R is also false.

Q176. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below. **1 Marks**

Assertion: Equivalent weight of Cu in CuO is 31.8 and in Cu O_2 is 63.6.

Reason: Equivalent weight of an element = $\frac{\text{Atomic weight of the element}}{\text{Valency of the element}}$

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. A is false and R is also false.

Q177. The National Physical Laboratory is situated at: **1 Marks**

A. Kolkata B. New Delhi C. Bombay D. None of these

Q178. 18 carat gold contains ? **1 Marks**

A. 18% gold B. 4% gold C. 75% gold D. 60% gold

Q179. Which of the following equations is unbalanced? **1 Marks**

A. 4Fe (s) + 3O2(g) → 2Fe2O3(s).

B. 2Mg(s) + O2(g) → 2MgO(s).

C. P4(s) + O2(g) → P4O10(s).

D. CH4(g) + 2O2(g) → CO2(g) + 2H2O(g).

Q180. Insulin contains 3.4% sulphur. The minimum molecular weight of insulin is:

A. 941.176 B. 944 C. 945.27 D. None

Q181. How many number of molecules and atoms respectively are present in 2.8L of a diatomic gas at STP?

A. 6.023 × 1023, 7.5 × 1023

B. 6.023 × 1023, 15 × 1022

C. 7.5 × 1022, 15 × 1022

D. 15 × 1022, 7.5 × 1023

Q182. The mass of one mole a chloride formed by metal 'X' is 111.0g. Which one could be formula of chloride?

A. XCl B. XCl2 C. XCl3 D. XCl4

Q183. Definition of chemistry is:

A. Physical science that studies the composition, structure, properties and change of matter.

B. Biological science that helps to study the basic functioning of nervous system.

C. Science that helps in studying the galaxy.

D. Physical science that studies the biotic and abiotic aspects of environment.

Q184. For two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

Assertion: A number 138.42 can be written as 1.3842×10^2 in scientific notation.

Reason: In scientific notation, a number is generally expressed in the form of $N \cdot 10^n$, where N is a number between 1.00 ... and 9.999 ... and n is an exponent.

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. A is false and R is also false.

Q185. Law of conservation of mass is also known as: **1 Marks**

A. Law of indestructibility.

B. Law of mass action.

C. Law of conservation of energy.

D. None of the above.

Q186. Which of the following represents largest number of particles. **1 Marks**

A. Atoms in mole of CH4

B. Atoms in 0.5 mol of SO3

C. Atoms in 0.5 mole of CO2

D. Atoms in 1 mol of CO.

Q187. The weight of iron which will be converted into its oxide (Fe_3O_4) by the action of 18g of steam on it will be (Atomic weight of Fe = 56). **1 Marks**

A. 168g. B. 84g. C. 42g. D. 21g.

Q188. A sample of ammonia has a mass of 51.1g. How many molecules are in this sample? **1 Marks**

A. 1.8 × 1023 molecules
B. 3.6 × 1023 molecules
C. 9.1 × 1023 molecules
D. 1.8 × 1024 molecules

Q189. Mass can neither be created nor destroyed. This is in agreement with which law of chemical combination? **1 Marks**

A. Law of definite proportion.
B. Law of multiple proportion.
C. Law of conservation of mass.
D. Law of conservation of momentum.

Q190. The weights of two elements which combines with one another are in the ratio of their: **1 Marks**

A. Atomic weight.
B. Molecular weight.
C. Quivalent weight.
D. None of the above.

Q191. Which of the following statements is/ are correct regarding significant figures? **1 Marks**

A. All non-zero digits are significant.
B. Significant figures are meaningful digits which are known with certainty.
C. Zero between two non-zero digits are significant.
D. All of the above.

Q192. If 1mL of water contains 20 drops then number of molecules in a drop of water is: **1 Marks**

A. 6.023 × 1023 molecules.
B. 1.376 × 1026 molecules.
C. 1.62 × 1021 molecules.
D. 4.346 × 1020 molecules.

Q193. 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

Q194. What is mass silicon in 100g of sodium silicate, Na_2SiO_3?

A. 16.7%
B. 23.0%
C. 28.0%
D. 82.0%

Q195. Which of the following is the best example to demonstrate the law of conservation of mass?

A. 12gm of carbon combines with 32gm of oxygen to form 44gm of CO2.
B. When 72gm of carbon is heated in a vacuum and no change in its mass takes place.
C. The weight of a piece of platinum is the same before and after heating in air.
D. None of these.

Q196. 4.6×10^{22} atoms of an element weight 13.8g. What is the atomic mass of the element?

A. 290u
B. 180.6u
C. 34.4u
D. 104u

Q197. How many grams of concentrated nitric acid solution should be used to prepare 250mL of 2.0M HNO_3? The concentrated acid is 70% HNO_3. **1 Marks**

A. 45.0g conc. HNO3
B. 90.0g conc. HNO3
C. 70.0g conc. HNO3
D. 54.0g conc. HNO3

Q198. The number of Cl^- and Ca^{2+} ions in 222g of $CaCl_2$ is: **1 Marks**

A. 4NA, 2NA
B. 2NA, 4NA
C. 1NA, 2NA
D. 2NA, 1NA

Q199. 16g of oxygen has same number of molecules as in: **1 Marks**

A. 16g of CO
B. 28g of N2
C. 14g of N2
D. 1.0g of H2

Q200. One mole of any substance contains 6.022×10^{23} atoms/ molecules. Number of molecules of H_2SO_4 present in 100mL of 0.02M H_2SO_4 solution is _____. **1 Marks**

A. 12.044 × 1020 molecules.
B. 6.022 × 1023 molecules.
C. 1 × 1023 molecules.
D. 12.044 × 1023 molecules.