Fundamental Concepts

Sr	Questions	Answers Choice
1	Which of the following statements is not true?	A. Isotopes with even atomic masses are comparatively abundant B. Isotopes with even atomic masses are comparatively abundant C. Isotopes with even atomic masses and even atomic numbers are comparatively abundant D. Isotopes with even atomic masses and odd atomic number are comparatively abundant
2	Which has greater number of moles	A. 0.1 g sodium B. 6.02 x 10²⁰atoms of magnesium C. 20 cm³0.1mole per dm³of NaOH D. 12.2 dm³of nitrogen at standard [A_rNa = 23, Mg = 24, O = 16]
3	Covalent compound s mostly exist in the form of:	A. Protons<o:p></o:p> B. Atoms<o:p></o:p> C. <span style="font-size:11.0pt;line-height:107%;font-family:"Calibri","sans-serif";mso-ascii-theme-font:minor-latin;mso-fareast-font-family: Calibri;mso-fareast-theme-font:minor-latin;mso-hansi-theme-font:minor-latin;mso-bidi-font-family:"Times New Roman";mso-bidi-theme-font:minor-bidi; mso-ansi-language:EN-US;mso-fareast-language:EN-US;mso-bidi-language:AR-SA">Neutrons D. Molecules<o:p></o:p>
4	Question Image	A. 300 cm³ B. 200 cm³ C. 150 cm³ D. 100 cm³
5	Question Image	A. 8 g B. 16 g C. 32 g D. 24 g
6	0.5 mole of CH4and 0.5 mole of SO2gases have equal	A. Volume B. Mass in grams C. Total number of atoms D. Number of molecules
7	Each molecule of haemoglobin is 68000 times heavier than one atom of	A. C B. H C. N D. O
8	Isotopes differ in the	A. Number of neutrons B. Number of protons C. Number of electrons D. Number of atoms
9	The largest number of molecules are present in	A. 3.6 g of H₂O B. 4.8 g of C₂H₅OH C. 2.8 g of CO D. 5.4 g of N₂O₅
10	The amount of products obtained from the balanced chemical equation is regarded as	A. Theoretical yield B. Actual yield C. % yield D. Experimental yield
11	The pressure of vapours when sent to the ionization chamber in mass spectrometer is	A. 10⁻⁵to 10⁻⁶torr B. 10⁻⁶to 10⁻⁷torr C. 10⁻⁷to 10⁻⁸torr D. 10⁻³to 10⁻⁴torr
		A. Mono-atomic molecules B. Diatomic molecules C. Poly-atomic molecules D. <span style="font-size:

12	$C_6H_{12}O_6$and $C_{12}H_{22}O_{11}$ are:	10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Hetero atomic molecules<o:p></o:p>
13	The isotopes of an element	A. Possess same mass number B. Possess same number of protons C. Do not possess same chemical properties D. May or may not possess same chemical properties
14	The relative atomic mass of chlorine is 35.5. What is the mass of 2 mol of chlorine gas	A. 142 g B. 71 g C. 35.5 g D. 18.75 g
15	Two different hydrocarbon each contain the same percentage by mass of hydrogen. It follows that they have the same	A. Empirical formula B. Number of atoms in a molecules C. Number of isomers D. Relative molecular mass
16	A compound contains 75% carbon and 25% hydrogen, by mass. What is the molecular formula of the compound/	A. C₃H₈ B. CH₄ C. C₂H₄ D. C₂H₆
17	The wave length of visible light is 500 nm. In S.I. unit this value is	A. 5 x 10⁻⁸m B. 5 x 10⁻⁹m C. 500 x 10⁻⁷m D. 500 x 10⁻⁹m
18	Which one of the following compounds does not have the empirical formula CH_2O?	A. Ethanoic acid, CH₃CO₂H B. Ethanol, CH₃CH₂OH C. Glucose, C₆H₁₂O₆ D. Methanal, HCHO
19	First atomic theory was put forward by an English school teacher:	A. Maxewell B. Newton C. Sanger D. John Dalton
20	If four moles of sulpur dioxide are oxidised to sulphur trioxide, how many moles of oxygen molecules are required	A. 0.5 B. 1.0 C. 1.5 D. 2.0
21	How many moles of hydrogen atoms does 3.2 g of methane, CH_4, contain?	A. 0.02 B. 0.2 C. 0.4 D. 0.8
22	Which one of the following step is not involved in determination of empirical formula	A. Determination % of each element B. Determination of gram atom of each element C. Determination of isotopes of each element D. Determination of atomic ratio of element
23	Which of the following statement is correct for a chemical reaction to occur molecules of substances must	A. Collide with each other B. Collide with energy more than activation energy C. Collide with energy less than activation energy D. Collide with high frequency
24	CL_2, N_2 and O_2 are:	A. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Diatomic molecules<o:p></o:p> B. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Hetero atomic molecules<o:p></o:p> C. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Poly-atomic molecules<o:p></o:p>

		D. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Mono-atomic molecules
25	A beaker contains 9 grams of water. The number of H atoms is	A. 6.02 x 10²³ B. 3.01 x 10²³ C. 6.02 x 10²⁴ D. 3.01 x 10²⁴
26	When 0.1 g of magnesium is treated with an excess of hydrochloric acid, what volume of gas at room temperature and pressure will be produced	A. 10 cm³ B. 25 cm³ C. 48 cm³ D. 100 cm³
27	An ion bearing positive charge is called:	A. Cation B. Positron C. Anion D. None of above
28	Molecules of High molecular weight usually greater than 10,000 are called:	A. Macro molecules B. Mega molecules C. Poly molecules D. Gega molecules
29	Atoms and molecules can either gain or lose electrons, forming charge particles called:	A. Positrons<o:p></o:p> B. Photons<o:p></o:p> C. Ions<o:p></o:p> D. Electrons<o:p></o:p>
30	Hemoglobin contains nearly:	A. 10,000 atoms B. 100 atoms C. 1000 atoms D. 1 atom
31	Formation of a cation is:	A. Exothermic process B. Non-endothermic process C. Endothermic process D. None of above
32	Which of the sub-atomic particles is not charged	A. Electron B. Proton C. Neutron D. All of them
33	A species having positive or negative charge is called:	A. Electron B. Ion C. Proton D. Atom
34	The relative abundance of the ions with a definite m/e value is measured by	A. High pressure of vapours B. Strength of electric current measured C. Quantity of fast moving electrons D. Electron gas
35	A molecular ion is formed by	A. Passing a high energy electron beam through gaseous molecule B. Dissolving a salt i dilute acid C. Passing electric current through molten salt D. Passing electricity through aqueous solutions
36	A compound contains one atom of oxygen and % of O 34.78, then molecular mass of compound is	A. 46 B. 78 C. 110 D. 180
37	A limiting reactant is one which according to the stoichiometric equation	A. Has excess mass B. Has least mass C. Has excess number of moles D. Has least number of moles
38	The phenomenon of isotropy was first discovered by	A. Soddy B. Rutherford C. Bohr D. Dalton
39	$Al^{3+}$is a symbol for aluminium	A. Atom B. Ion C. Cation D. Anion
40	Who one mole of each of the following is completely burned in oxygen, which gives the largest mass of carbon dioxide?	A. Carbon monoxide B. Diamond C. Ethane D. Methane

41	When nitrogen is 5.6 grams in NO_2. then number of moles of $NO_2$is	A. 0.5 B. 0.4 C. 0.04 D. 0.05
42	A balloon contains 0.02 gram of H_2gas, it contains H_2molecules	A. 6.02 x 10²³ B. 3.01 x 10²² C. 6.02 x 10²¹ D. 3.01 x 10²¹
43	Question Image	A. 84.84 % B. 89.89% C. 81.81% D. 90.90%
44	A ring contains 3 gram diamond. The number of C-atoms which a ring contains is	A. 3.01 x 10²³ B. 1.5 x 10²³ C. 6.02 x 10²⁴ D. 3.01 x 10²⁴
45	One mole of ethanol and one mole of ethane have an equal	A. Mass B. Number of atoms C. Number of electrons D. Number of molecules
46	A compound X contains 50% sulphur and 50% oxygen by mass. What is the empirical formula of compound X?	A. SO B. SO₂ C. SO₃ D. SO₄
47	Question Image	A. N₂O₄is limiting reactant B. N₂H₄is the limiting reactant C. Reactants are completely converted to the products D. Reactions is reversible
48	The empirical formula of a compound is CH_2O. What may be the compound	A. C₂H₅OH B. C₆H₅OH C. HCOOH
49	The number of atoms present in molecule determines its:	A. Molecularity B. Atomicity C. Basicity D. Acidity
50	Atoms can be evident by use of electron microscope, field ionization microscope and:	A. x-rays B. Video camera C. Telescope D. Compound microscope
51	One mole of C_2H_5OH contains the number of H-atoms	A. 6.02 x 10²³ B. 3.61 x 10²⁴ C. 1.81 x 10²⁴ D. 6.02 x 10²⁴
52	When an electron is added to a uni positive ion we get:	A. Cation B. Molecule C. Neutral atom D. Anion
53	Isotopes differ in	A. properties which depend upon mass B. arrangement of electrons in orbitals C. chemical properties D. the extent to which they may be affected in electric fields
54	Matter is defined as any thing which occupies space and:	A. Molecules B. Mass C. Compound D. Molecules
55	The branch of science dealing with structure, composition and changes in matter and laws and principles which govern these changes is called as	A. chesmistry B. Geology C. Physics D. Mechanics
56	Hemoglobin is 68000 times heavier than:	A. Oxygen atom B. Nitrogen atom C. Carbon atom D. Hydrogen atom
57	Question Image	A. 0 dm³ B. 3 dm³ C. 2 dm³ D. 3 dm³

58	NH_3, HCL, H_2O, HL are:	A. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Diatomic molecules<o:p></o:p> B. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Poly-atomic molecules<o:p></o:p> C. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Mono-atomic molecules<o:p></o:p> D. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Hetero atomic molecules<o:p></o:p>
59	Benzene is stable to:	A. Oxidation B. Nitration C. KMnO₄ D. SULPHONATION
60	The relative abundance of Pb isotopes is 1.5% Pb^{204}, 23.6% Pb^{206}, 22.6% Pb^{207}, 52.3% Pb^{208}The relative atomic mass of Pb is	A. 207.94 B. 208.24 C. 206.94 D. 207.24
61	A beaker contains 9 grams of water. The number of H-atoms is	A. 6.02 x 1023 B. 3.01 x 1023 C. 6.02 x 1024 D. 3.01 x 1024
62	X-ray work has shown that the diameters of atom are of the order of	A. 8 x 10⁻¹⁰m B. 2 x 10⁻¹⁰m C. 8 x 10⁻⁸m D. 2 x 10⁻⁸m
63	One of the following statements is incorrect	A. Actual yeild is always less than the theoretical yield B. The formula of a compound is not definite C. Law of conservation of mass is applied in stoictiometry D. Boyles law is applied in stoichiometry
64	Relative atomic mass of an element is the mass of the element relative to	A. 1/12 mass of carbon-12 B. 1/12 mass of carbon C. 1 mass of hydrogen atom D. 1/16 mass of oxygen
65	The number of subatomic particles in atoms sidcovered is more than:	A. 110 B. 100 C. 125 D. 90
66	Macromolecules are	A. organic molecules B. High molecular mass molecules C. Natural compounds D. Rarely occurring molecules
67	Mass spectrometer measures the	A. Exact mass of an element B. Average mass of an element C. The number of elements present in a molecule D. m/e value of a positive ion
68	Objects of the size of an atom can be observed in	A. An electron microscope B. An x-ray spectrum C. Atomic absorption spectrum D. A visible spectrum
69	Which of the following compounds contains the highest percentage by mass of nitrogen?	A. Ammonia, NH₃ B. Ammonium carbamate, NH₂CO₂NH₄ C. Ammonium carbonate, (NH₄)

	nitrogen?	C. Ammonium carbonate, (NH₄)₂CO₃ D. Hydrazine, N₂H₄
70	Question Image	
71	The volume occupied by 1.4 g of N_2 at S.T.P is	A. 2.24 dm³ B. 22.4 dm³ C. 1.12 dm³ D. 112 cm³
72	The mass of sulphur which combines with 24 grams oxygen to form SO_2	A. 32 gram B. 24 gram C. 8 gram D. 12 gram
73	Which statement about molecule is incorrect ?	A. Molecules of a substance are similar B. Hemoglobin is a homo atomic molecules C. Oxygen molecule is a macro molecule D. It exist independently
74	The diameter of atoms is of the order:	A. 2* 10⁻⁵m B. 2* 10⁻¹⁰m^{<o:p></o:p>} C. 2* 10⁻²m D. 2* 10⁻³m
75	Determination of atomic masses and invention of system of writing symbols was made by:	A. J. Berzelius B. Democritus C. Dalton D. None of above
76	A limiting reactant is the one which	A. Is taken in lesser quantity in grams as compared to other reactants B. Is taken in lesser quantity in volume as compared to other reactants C. Gives the maximum amount of the product which is required D. Gives the minimum amount of the product under consideration
77	The percentage of H is the highest in	A. CH₄ B. NH₃ C. H₂SO₄ D. C₆H₁₂O₆
78	The percentage of which element in the organic compound is determined by the difference method	A. Carbon B. Hydrogen C. Nitrogen D. Oxygen
79	A compound having empirical formula C_3H_3O and its molecular mass is 110.02. Its molecular formula is	A. C₃H₃O B. C₆H₆O₂ C. C₉H₉O₃ D. C₃H₆O₂
80	Question Image	A. 32 g B. 3.2 g C. 5.6 g D. 9.6 g
81	How many moles of oxygen, O_2 are needed for the complete combustion of two moles of butane C_4H_{10}?	A. 2 B. 8 C. 10 D. 13
82	The mass of one mole of proton is	A. 1.008 g B. 0.184 g C. 1.673 g D. 1.008 mg
83	What is the volume in cm^3 of 3.01 x 10^{23} molecules of O_2 gas at S.T.P	A. 1000 cm³ B. 11000 cm³ C. 1120 cm³ D. 11200 cm³
84	Which one of the following statements is not correct	A. A molecule is the smallest particle of an element which can exist independently B. He is a molecule of helium C. S₈is a molecule of sulphur D. O₃is a molecule of oxygen
85	The atom of an element is	A. The smallest particle B. The fundamental particle C. The independent particle D. The charged particle
86	0.5 mole of CH_4 and 0.5 mole of SO_2 gases have equal	A. Volume B. Mass is gram

86	0.5 mole of CH_4 and 0.5 mole of SO_2 gases have equal	C. Total number of atoms D. Number of molecules
87	Ascorbic acid contains 40.92% carbon, 4.58%, hydrogen and 54.4% oxygen. The empirical formula is	A. C₃H₄O₃ B. C₂H₄O₃ C. C₃H₅O₄ D. C₂H₃O₁
88	The quantitative relationship between the substances according to balanced equation describes	A. Reversible reactions B. Stoichiometry C. Limiting reacting D. Percentage composition
89	The value of R(General Gas Constant) is	A. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">8.3134 JK⁻¹<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">mole⁻¹ ^{<o:p></o:p>} B. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">1.987 Cal K⁻¹<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Mole^{-1<o:p></o:p>} C. Both a and b D. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">1.987 JK⁻¹<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">mole⁻¹<o:p></o:p>
90	Isotopes of an element differ in	A. Number of protons B. Number of electrons C. Number of neutrons D. Number of electrons and protons
91	Smallest particle of an element which may or may not have independent existence is known as:	A. A molecule B. An ion C. An atom D. An electron
92	The atomic mass is measured in atomic mass unit (a.m.u.) which is equal to	A. 1.661 x 10^{-27- Kg} B. 1.661 x 10⁻²⁴Kg C. 1.661 x 10^{-27- g} D. 1.661 x 10⁻²⁴mg
93	3.01 x 10^{22} Ag^{+} ions is present in	A. 85 grams AgNO₃ B. 0.85 g AgNO₃ C. 8.5 g AgNO₃ D. 18.5 g AgNO₃

94	Question Image	A. 99.2% B. 99.5% C. 90.5% D. 96.2%
95	One mole of SO_2contains	A. 6.02 x 10²³atoms of oxygen B. 18.1 x 10²³, molecules of SO₂ C. 6.02 x 10²³atoms of sulphur D. 4 gram atoms of SO₂
96	He Ar and Ne are:	A. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Mono-atomic molecules B. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Hetero atomic molecules<o:p></o:p> C. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Poly-atomic molecules<o:p></o:p> D. <span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Diatomic molecules<o:p></o:p>
97	Where energy is released during a reaction it is	A. Exothermic reaction B. Endothermic reaction C. A free radical reaction D. A bond breaking reaction
98	The number of moles of CO2which contain 8.0 g of oxygen	A. 0.25 B. 0.50 C. 1.0 D. 1.50
99	CO+ is an example of	A. Stable molecule B. Anionic molecule ion C. Cationic molecular ion D. Free radical
100	Which statement about an atom is true ?	A. The number of neutrons is not equal to number of electrons B. Mass number is less than atomic number C. All the elements have only one mass number D. Mass number can be equal to atomic number
101	The empirical formula of a liquid compound is known to be C_2H_4O. What other information is needed to work out its molecular formula?	A. The percentage composition of the compound B. The relative molecular mass of the compound C. The density of the compound D. The volume occupied by one mole of the compound
102	The negatively charged particles are called	A. Cation B. Radical C. Anion D. Positron
103	A molecule of haemoglobin is made up if nearly	A. 10,000 atoms B. 50,000 atoms C. 2500 atoms D. 1500 atoms
104	Metal tend to lose electrons, becoming:	A. Metals<o:p></o:p> B. Positively charged<o:p></o:p> C. Negatively charged<o:p></o:p> D. (a)<span style="font-variant-numeric:

		normal; font-variant-east-asian: normal; font-stretch: normal; font-size: 7pt; line-height: normal; font-family: "Times New Roman";"> <!--[endif]-->And (c)<o:p></o:p></p>
105	1.12 $dm^3$of N_2gas at S.T.P. has mass of N_2gas	A. 2.8 g B. 2.4 g C. 1.4 g D. 14 g
106	What is the maximum mass of aluminium which can be obtained from 240g of aluminium oxide Al_2O_3?	A. 26 g B. 127 g C. 51 g D. 108 g
107	In molecules kinetic and potential energies are:	A. Definite B. Moderate C. Indefinite D. None of above
108	The mass of Al_2S_3formed when 20 grams Al reacts completely with S is	A. 60 g B. 50 g C. 50.55 g D. 55.55 g
109	The number of isotopes of gold is	A. 3 B. 1 C. 2 D. 4