ECAT Chemistry Chapter 1 Basic Concepts Online Test

Sr	Questions	Answers Choice
1	The atom of an element is	A. The smallest particle B. The fundamental particle C. The independent particle D. The charged particle
2	Which of the sub-atomic particles is not charged	A. Electron B. Proton C. Neutron D. All of them
3	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
4	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
5	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
6	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
7	A molecule of haemoglobin is made up if nearly	A. 10,000 atoms B. 50,000 atoms C. 2500 atoms D. 1500 atoms
8	Each molecule of haemoglobin is 68000 times heavier than one atom of	A. C B. H C. N D. O
9	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
10	$Al^{3+}$is a symbol for aluminium	A. Atom B. Ion C. Cation D. Anion
11	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
12	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
13	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
14	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
15	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
16	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
17	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
18	The percentage of H is the highest in	A. CH₄ B. NH₃ C. H₂SO₄ D. C₆H₁₂O₆
19	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
20	The empirical formula of a compound is CH_2O. What may be the compound	A. C₂H₅OH B. C₆H₅OH C. HCOOH
21	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
22	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
23	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
24	Isotopes differ in the	A. Number of neutrons B. Number of protons C. Number of electrons D. Number of atoms
25	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
26	Which of the following compounds contains the highest percentage by mass of nitrogen?	A. Ammonia, NH₃ B. Ammonium carbamate, NH₂CO₂NH₄ C. Ammonium carbonate, (NH₄)₂CO₃ D. Hydrazine, N₂H₄
27	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
28	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
		A. <p class="MsoNormal"><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:

29	The value of R(General Gas Constant) is	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>
30	The percentage of which element in the organic compound is determined by the difference method	A. Carbon B. Hydrogen C. Nitrogen D. Oxygen
31	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
32	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
33	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]
34	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
35	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
36	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
37	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
38	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

39	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
40	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
41	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
42	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
43	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
44	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
45	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
46	The mass of one mole of proton is	A. 1.008 g B. 0.184 g C. 1.673 g D. 1.008 mg
47	What is the volume in $cm^3$of 3.01 x 10^{23}molecules of O_2gas at S.T.P	A. 1000 cm³ B. 11000 cm³ C. 1120 cm³ D. 11200 cm³
48	0.5 mole of $CH_4$and 0.5 mole of SO_2gases have equal	A. Volume B. Mass is gram C. Total number of atoms D. Number of molecules
49	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
50	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
51	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
52	Question Image	A. 300 cm³ B. 200 cm³ C. 150 cm³ D. 100 cm³
53	Question Image	A. 0 dm³ B. 3 dm³ C. 2 dm³ D. 3 dm³
54	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
55	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
56	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
57	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
58	Question Image	
59	The amount of products obtained from the balanced chemical equation is regarded as	A. Theoretical yield B. Actual yield C. % yield D. Experimental yield
60	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
61	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
62	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
63	Question Image	A. 32 g B. 3.2 g C. 5.6 g D. 9.6 g
64	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
65	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
66	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
67	Question Image	A. N₂O₄is limiting reactant B. N₂H₄is the limiting reactant C. Reactants are completely converted to the products D. Reactions is reversible
68	The quantitative relationship between the substances according to balanced equation describes	A. Reversible reactions B. Stoichiometry C. Limiting reacting D. Percentage composition
69	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
70	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
71	Question Image	A. 84.84 % B. 89.89% C. 81.81% D. 90.90%
72	Question Image	A. 99.2% B. 99.5% C. 90.5% D. 96.2%

73	The number of moles of CO2which contain 8.0 g of oxygen	A. 0.25 B. 0.50 C. 1.0 D. 1.50
74	Question Image	A. 8 g B. 16 g C. 32 g D. 24 g
75	Macromolecules are	A. organic molecules B. High molecular mass molecules C. Natural compounds D. Rarely occurring molecules
76	The negatively charged particles are called	A. Cation B. Radical C. Anion D. Positron
77	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
78	The phenomenon of isotropy was first discovered by	A. Soddy B. Rutherford C. Bohr D. Dalton
79	Isotopes of an element differ in	A. Number of protons B. Number of electrons C. Number of neutrons D. Number of electrons and protons
80	The number of isotopes of gold is	A. 3 B. 1 C. 2 D. 4
81	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
82	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
83	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
84	Matter is defined as any thing which occupies space and:	A. Molecules B. Mass C. Compound D. Molecules
85	The number of atoms present in molecule determines its:	A. Molecularity B. Atomicity C. Basicity D. Acidity
86	When an electron is added to a uni positive ion we get:	A. Cation B. Molecule C. Neutral atom D. Anion
87	CO+ is an example of	A. Stable molecule B. Anionic molecule ion C. Cationic molecular ion D. Free radical
88	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
		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-

89	Covalent compound s mostly exist in the form of:	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>
90	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>
91	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)<!--[endif]-->And (c)<o:p></o:p>
92	First atomic theory was put forward by an English school teacher:	A. Maxewell B. Newton C. Sanger D. John Dalton
93	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
94	Atoms can be evident by use of electron microscope, field ionization microscope and:	A. x-rays B. Video camera C. Telescope D. Compound microscope
95	The number of subatomic particles in atoms sidcovered is more than:	A. 110 B. 100 C. 125 D. 90
96	$C_6H_{12}O_6$and $C_{12}H_{22}O_{11}$ are:	A. Mono-atomic molecules B. Diatomic molecules C. Poly-atomic molecules 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>
97	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;

		attachment: initial; background-origin: initial; background-clip: initial;">Mono-atomic molecules
98	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>
99	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>
100	Hemoglobin is 68000 times heavier than:	A. Oxygen atom B. Nitrogen atom C. Carbon atom D. Hydrogen atom
101	Hemoglobin contains nearly:	A. 10,000 atoms B. 100 atoms C. 1000 atoms D. 1 atom
102	Molecules of High molecular weight usually greater than 10,000 are called:	A. Macro molecules B. Mega molecules C. Poly molecules D. Gega molecules
103	In molecules kinetic and potential energies are:	A. Definite B. Moderate C. Indefinite D. None of above
104	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

104	Which statement about an atom is true ?	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
105	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
106	A species having positive or negative charge is called:	A. Electron B. Ion C. Proton D. Atom
107	An ion bearing positive charge is called:	A. Cation B. Positron C. Anion D. None of above
108	Formation of a cation is:	A. Exothermic process B. Non-endothermic process C. Endothermic process D. None of above
109	Benzene is stable to:	A. Oxidation B. Nitration C. KMnO₄ D. SULPHONATION