

## MDCAT Chemistry Chapter 2 Atomic Structure Online Test

Sr	Questions	Answers Choice
1	How many isotopes are present in palladium	A. Two B. Four C. Six D. nine
2	Mass spectrometry is used to determine the	A. Number of isotopes of an element B. Relative abundance of isotopes C. Relative isotopic masses D. All of these
3	CO <sub>2</sub> and SO <sub>2</sub> are both triatomic molecules, but heat of vaporization of SO <sub>2</sub> is greater than that of CO <sub>2</sub> . This is due to	A. greater electronegative character of sulphur B. greater size of SO <sub>2</sub> molecule C. SO <sub>2</sub> is polar and CO <sub>2</sub> is non-polar D. SO <sub>2</sub> is more acidic in nature than CO <sub>2</sub>
4	5604 cm <sup>3</sup> of H <sub>2</sub> gas at STP contains atoms of hydrogen	A. 6.02×10 <sup>23</sup> B. 2.6×10 <sup>22</sup> C. 3.01×10 <sup>23</sup> D. 1. 50x 10 <sup>23</sup>
5	250cm of 0.2 molar potassium sulphate solution is mixed with 250cm of 0.2 molar KCl solution. The molar concentration of K ions is:	A. 0.2 molar B. 0.25 molar C. 0.3 molar D. 0.35 molar
6	In s solution 7.8 g of benzene ( C <sub>6</sub> H <sub>6</sub> ) and 46g of toluene (C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> ) is present. The mole fraction of toluene is	A. 1/3 B. 1/5 C. 2/3 D. 5/6
7	Point out that which is not an application of liquid crystals?	A. Source of energy B. In display of electrical devices C. For skin thermography D. As temperature sensor
8	Glycerine is a polar compound. It boils at 290°C under one atmospheric pressure. It should be distilled under reduced pressure due to reason that	A. there are strong intermolecular forces between molecules of glycerine B. it decomposes at 290°C C. low pressure makes the liquid to boil at high temperature D. <div>the reduced pressure decreases the boiling point of liquids</div>
9	6Na+ Fe <sub>2</sub> O <sub>3</sub> ----- 3 Na <sub>2</sub> O+2Fe For above reaction, if you are provided with 230g Na and 320g Fe <sub>2</sub> O <sub>3</sub> , then limiting reactant is	A. , Na B. Na <sub>2</sub> O C. Fe <sub>2</sub> O <sub>3</sub> D. none of these
10	The molarity of 2% W/V NaOH solution is	A. 2 B. 0.25 C. 0.05 D. 0.5
11	Which of the following is not the property of liquid crystal	A. anisotropic B. isotropic C. three dimensional arrangement D. fluidity
12	Water may boil at 120 °C when external pressure is:	A. 100 mm of Hg B. 700 mm of Hg C. 760 mm of Hg D. 1489 mm of Hg
13	Which of the following contains 1 mole of the stated particles	A. Chlorine molecules in 35.5 g of chlorine gas B. Electrons in 1 g of hydrogen gas C. Hydrogen ions in 1 dm <sup>3</sup> of 1 mol dm <sup>-3</sup> aqueous sulfuric acid D. Oxygen atoms in 22.4 dm <sup>3</sup> of oxygen gas at STP

14	Moles of protons in 20g of SO <sub>3</sub>	A. 10 B. 20 C. 40 D. 80
15	If empirical formula of a compound is CH <sub>2</sub> and its molecular mass is 56amu. What will be its molecular formula	A. CH <sub>2</sub> B. C <sub>3</sub> H <sub>6</sub> C. C <sub>2</sub> H <sub>4</sub> D. C <sub>4</sub> H <sub>8</sub>
16	When we dissolve 15.8 g of KMnO <sub>4</sub> in 1000g of H <sub>2</sub> O. The solution is	A. , 0.1 M B. 0.1 M C. 0.2 M D. 0.2 M
17	Number of moles present in 0.6 gram of silica is (Atomic mass Si = 28, O=16)	A. 0.01 mole B. 0.064 mole C. 0.044 mole D. 0.054 mole
18	The stoichiometric calculations for a chemical reaction results in	A. Actual yield B. Percentage yield C. Theoretical yield D. Selectivity
19	What is the boiling point of H <sub>2</sub> O at the peak of Mount Everest?	A. 101 °C B. 69 °C C. 100 °C D. 98 °C
20	Naturally occurring isotopes of silver are	A. , Two B. , Four C. , Forty seven D. , sixteen
21	The hydrocarbon with maximum B.P is	A. CH <sub>4</sub> B. C <sub>6</sub> H <sub>14</sub> C. C <sub>4</sub> H <sub>10</sub> D. C <sub>2</sub> H <sub>6</sub>
22	Mg(s) + 2HCl(aq). ----- MgCl <sub>2</sub> (aq)+ H <sub>2</sub> (g) Given that; Mg=24g and HCl=36.5g, the excess reactant is	A. Mg B. HCl C. Both are in stoichiometric amounts D. None of these
23	To cook the food at a high mountain is difficult as compared to at sea level. The reason is that:	A. the temperature at the top of the mountain is low B. the density of water decreases at the mountains C. the boiling point of water decreases at the mountain D. the hydrogen bonding in water changes with the change of height
24	Which of the following is a limitation of balanced chemical equation	A. Conditions and rate of reactions B. Physical state and mechanism C. Reactants and products and their coefficients D. Both (a) and (b)
25	The sole products of combustion analysis are	A. CO <sub>2</sub> and NH <sub>3</sub> B. H <sub>2</sub> O and Mg(ClO <sub>4</sub> ) <sub>2</sub> C. CO <sub>2</sub> and KOH D. CO <sub>2</sub> and H <sub>2</sub> O
26	Cholesteryl benzoate turns into milky liquid at	A. 140 °C B. 145 °C C. 148 °C D. 149 °C
27	Evaporation occurs at all temperatures and is effected by	A. surface area B. temperature C. intermolecular forces D. all of these
28	The best concentration unit used for K <sup>+</sup> ions present in potable water is	A. ppm B. Mole fraction C. Molarity D. Molality
29	How many grams of NaOH are present in 250 cm <sup>3</sup> of its 0.2M solution	A. ,4 g B. , 0.4 g C. , 10 g D. , 2 g
30	Combustion analysis is performed for the determination of	A. Molar mass of the compound B. Empirical formula of the compound C. Structural formula of the substance D. Mass of halogens present in

31	The B.P of H <sub>2</sub> O at Murree Hills is	A. 99.8C B. 98°C C. 100C° D. 89°C
32	Styrene has empirical formula CH, and there is 92.2%C and 7.75% hydrogen. If molar mass is 104g mol <sup>-1</sup> , what will be integral multiple (n) to get molecular formula:	A. 2 B. 4 C. 6 D. 8
33	Which of the following compound have empirical formula, but no molecular formula	A. H <sub>2</sub> O B. C <sub>6</sub> H <sub>6</sub> C. H <sub>2</sub> <sub>2</sub>O<sub>2</sub></sub> D. NaCl
34	One mole of SO <sub>2</sub> contains	A. 6.022 x 10 <sup>(23)</sup> atoms of oxygen B. 6.022x 10 <sup>23</sup> atoms of sulfur C. 18.1x 10 <sup>(23)</sup> molecules of SO <sub>2</sub> D. 4 g molecule of SO <sub>2</sub>
35	1 gram formula refers to	A. Amount in grams equivalent to 1 mole of a atom B. Amount in grams equivalent to 1 mole of a covalent compound C. Amount in grams equivalent to 1 mole of a ionic compound D. Amount in grams equivalent to 1 mole of an ion
36	Number of H <sup>+</sup> ions when 0.1 mole of sulfuric acid is completely ionized in water	A. 4x6.022x10 <sup>23</sup> B. 1x6.022x10 <sup>23</sup> C. 2x6.022 x10 <sup>23</sup> D. 2x6.022x10 <sup>22</sup>
37	Haemoglobin molecule is how many times heavier than helium atom	A. 68000 times B. 17000 times C. ,34000 times D. , 1700 times
38	The value of the vapour pressure of water at its boiling point at Karachi and Murree is	A. same B. different C. depends upon the environmental conditions in both cities D. greater at Murree and less at Karachi
39	Gram atoms of hydrogen in 5.5 g H <sub>2</sub>	A. 5.50 B. 2.25 C. 5.45 D. 2.20
40	Molecular ions are produced in mass spectrometer. Which type of molecular ion formed more abundantly.	A. Negatively charged B. H <sup>+</sup> ions C. Positively charged D. equal positive and negative ions
41	During combustion analysis, which one is used for absorbing carbon dioxide:	A. 50% KOH B. 5% KOH C. Mg(ClO <sub>4</sub> ) <sub>2</sub> D. Silica gel
42	1 gram molecule refers to amount in grams	A. Equivalent to 1 mole of an atom B. Equivalent to 1 mole of a molecule C. Equivalent to 1 mole of an ionic species D. Of an ionic compound
43	The height of the peak in the mass spectrum shows	A. Number of isotopes B. Relative abundance C. Mass number D. Number of protons
44	Which of the following is pure substance	A. Distilled water B. , Sea water C. , NaCl (aq) D. Brass
45	Atoms having same mass number but different atomic numbers are called.	A. Isotopes B. isobars C. Isotones D. isomers
46	When liquid solute is dissolved in liquid solvent, then the best unit of concentration is?	A. % W/W B. % W/V C. % V/V D. %V/W

47	The number of moles of CO <sub>2</sub> which contain 16g of oxygen	A. 0.25 B. 1.00 C. 1.50 D. 0.50
48	The largest number of molecules are present in	A. 3.6 g of H <sub>2</sub> O B. 4.6 g of C <sub>2</sub> H <sub>5</sub> OH C. 2.8 g of CO D. 5.4 g of N <sub>2</sub> O <sub>5</sub>
49	How many electrons have to be removed to ionize $1.0 \times 10^{-6}$ moles of Ne atoms to Ne <sup>+</sup> ions in a neon advertising tube:	A. $6.02 \times 10^{23} / 1.0 \times 10^{-6}$ B. $1.0 \times 10^{-6} \times 6.02 \times 10^{23}$ C. $1.0 \times 10^{-6} \times 6.02 \times 10^{23} / 20.2$ D. $1.0 \times 10^{-6} \times 6.02 \times 10^{23} / 9.65 \times 10^{-1}$