

QB365 Question Bank Software Study Materials

Basic Concepts of Chemistry and Chemical Calculations 50 Important 1 Marks Questions With Answers (Book Back and Creative)

11th Standard

Chemistry

Total Marks : 50

Multiple Choice Question

50 x 1 = 50

- 1) 40 ml of methane is completely burnt using 80 ml of oxygen at room temperature. The volume of gas left after cooling to room temperature is _____.
- (a) **40 ml CO₂ gas** (b) 40 ml CO₂ gas and 80 ml H₂O gas (c) 60 ml CO₂ gas and 60 ml H₂O gas (d) 120 ml CO₂ gas
- 2) An element X has the following isotopic composition ²⁰⁰X = 90%, ¹⁹⁹X = 8% and ²⁰²X = 2%. The Weighted average atomic mass of the element X is closest to _____.
- (a) 201 u (b) 202 u (c) 199 u (d) **200 u**
- 3) Carbon forms two oxides, namely carbon monoxide and carbon dioxide. The equivalent mass of which element remains constant ?
- (a) Carbon (b) **Oxygen** (c) Both carbon and oxygen (d) Neither carbon nor oxygen
- 4) The equivalent mass of a trivalent metal element is 9 g eq⁻¹. The molar mass of its anhydrous oxide is _____.
- (a) **102 g** (b) 27 g (c) 270 g (d) 78 g
- 5) The number of water molecules in a drop of water weighing 0.018 g is _____.
- (a) 6.022 × 10²⁶ (b) 6.022 × 10²³ (c) **6.022 × 10²⁰** (d) 9.9 × 10²²
- 6) 1 g of an impure sample of magnesium carbonate (containing no thermally decomposable impurities) on complete thermal decomposition gave 0.44 g of carbon dioxide gas. The percentage of impurity in the sample is _____.
- (a) 0% (b) 4.4% (c) **16%** (d) 8.4%
- 7) When 6.3 g of sodium bicarbonate is added to 30 g of the acetic acid solution, the residual solution is found to weigh 33 g. The number of moles of carbon dioxide released in the reaction is _____.
- (a) 3 (b) 0.75 (c) **0.075** (d) 0.3
- 8) When 22.4 litres of H₂(g) is mixed with 11.2 litres of Cl₂(g), each at 273 K at 1 atm the moles of HCl (g), formed is equal to _____.
- (a) 2 moles of HCl (g) (b) 0.5 moles of HCl (g) (c) 1.5 moles of HCl (g) (d) **1 moles of HCl (g)**
- 9) Hot concentrated sulphuric acid is a moderately strong oxidizing agent. Which of the following reactions does not show oxidising behaviour ?
- (a) Cu + 2H₂SO₄ → CuSO₄ + SO₂ + 2H₂O (b) C + 2H₂ + SO₄ → CO₂ + 2SO₂ + 2H₂O
- (c) **BaCl₂ + H₂SO₄ → BaSO₄ + 2HCl** (d) None of the above
- 10) Choose the disproportionation reaction among the following redox reactions.
- (a) 3Mg(s) + N₂(g) → Mg₃N₂(s) (b) **P₄(s) + 3NaOH + 3H₂O → PH₃(g) + 3NaH₂PO₂(aq)**
- (c) Cl₂(g) + 2KI(aq) → 2KCl(aq) + I₂ (d) Cr₂O₃(s) + 2Al(s) → Al₂O₃(s) + 2Cr(s)
- 11) Which one of the following represents 180 g of water ?
- (a) 5 Moles of water (b) 90 moles of water (c) $\frac{6.022 \times 10^{23}}{180}$ molecules of water (d) **6.022 × 10²⁴ molecules of water**
- 12) 7.5 g of a gas occupies a volume of 5.6 litres at 0° C and 1 atm pressure. The gas is _____.
- (a) **NO** (b) N₂O (c) CO (d) CO₂

- 13) Total number of electrons present in 1.7 g of ammonia is ____.
- (a) 6.022×10^{23} (b) $\frac{6.022 \times 10^{22}}{1.7}$ (c) $\frac{6.022 \times 10^{24}}{1.7}$ (d) $\frac{6.022 \times 10^{23}}{1.7}$
- 14) The correct increasing order of the oxidation state of sulphur in the anions SO_4^{2-} , SO_3^{2-} , $S_2O_4^{2-}$, $S_2O_6^{2-}$ is ____.
- (a) $SO_3^{2-} < SO_4^{2-} < S_2O_4^{2-} < S_2O_6^{2-}$ (b) $SO_4^{2-} < SO_3^{2-} < S_2O_6^{2-} < S_2O_4^{2-}$
 (c) $S_2O_4^{2-} < SO_3^{2-} < S_2O_6^{2-} < SO_4^{2-}$ (d) $S_2O_6^{2-} < SO_4^{2-} < SO_3^{2-} < S_2O_4^{2-}$
- 15) The equivalent mass of ferrous oxalate is ____.
- (a) $\frac{\text{molar mass of ferrous oxalate}}{1}$ (b) $\frac{\text{molar mass of ferrous oxalate}}{2}$ (c) $\frac{\text{molar mass of ferrous oxalate}}{3}$ (d) None of these
- 16) If Avogadro number were changed from 6.022×10^{23} to 6.022×10^{20} , this would change ____.
- (a) the ratio of chemical species to each other in a balanced equation (b) the ratio of elements to each other in a compound
 (c) the definition of mass in units of grams (d) **the mass of one mole of carbon**
- 17) Two 22.4 litre containers A and B contains 8 g of O_2 and 8 g of SO_2 respectively at 273 K and 1 atm pressure, then ____.
- (a) Number of molecules in A and B are same (b) Number of molecules in B is more than that in A.
 (c) **The ratio between the number of molecules in A= to number of molecules in B is 2:1**
 (d) Number of molecules in B is three times greater than the number of molecules in A
- 18) What is the mass of precipitate formed when 50 ml of 8.5 % solution of $AgNO_3$ is mixed with 100 ml of 1.865 % potassium chloride solution ?
- (a) **3.59 g** (b) 7g (c) 14 g (d) 28 g
- 19) The mass of a gas that occupies a volume of 612.5 ml at room temperature and pressure ($25^\circ C$ and 1 atm pressure) is 1.1g. The molar mass of the gas is ____.
- (a) 66.25 g mol⁻¹ (b) **44 g mol⁻¹** (c) 24.5 g mol⁻¹ (d) 662.5 g mol⁻¹
- 20) Which of the following contain same number of carbon atoms as in 6 g of carbon-12 ?
- (a) 7.5 g ethane (b) 8 g methane (c) **both (a) and (b)** (d) none of these
- 21) Which of the following compound(s) has /have a percentage of carbon same as that in ethylene (C_2H_4)?
- (a) **propene** (b) ethyne (c) benzene (d) ethane
- 22) Which of the following is/are true with respect to carbon -12 ?
- (a) **relative atomic mass is 12 u** (b) the oxidation number of carbon is +4 in all its compounds.
 (c) 1 mole of carbon-12 contain 6.022×10^{22} carbon atoms. (d) All of these
- 23) Which one of the following is used as a standard for atomic mass?
- (a) ${}_6C^{12}$ (b) ${}_7C^{12}$ (c) ${}_6C^{13}$ (d) ${}_6C^{14}$
- 24) The equivalent mass of potassium permanganate in alkaline medium is:
 $MnO_4^- + 2H_2O + 3e^- \rightarrow MnO_2 + 4OH^-$
- (a) 31.6 (b) **52.7** (c) 79 (d) None of these
- 25) Identify the correct statement(s) with respect to the following reaction :
- $$Zn + 2HCl \rightarrow ZnCl_2 + H_2$$
- (i) Zinc is acting as an oxidant
 (ii) Chlorine is acting as a reductant
 (iii) Hydrogen is not acting as an oxidant
 (iv) Zn is acting as a reductant
- (a) only (ii) (b) **only (iv)** (c) both (ii) and (iii) (d) both (ii) and (i)

- 26) Match the list-I with list-II and select the correct answer using the code given below the lists.

List-I		List-II	
A	$\text{Cr}_2\text{O}_7^{2-}$	1	+5
B	MnO_4^-	2	+6
C	VO_3^-	3	+3
D	FeF_6^{3+}	4	+7

(a)	(b)	(c)	(d)
ABCD	ABCD	ABCD	ABCD
3142	4321	2413	3214

- 27) Match the list I with List II and select the correct answer using the code given below the lists.

List I		List II	
A	Diamond	1	Heterogeneous mixture
B	Aerated drinks	2	Element
C	Distilled water	3	Homogeneous mixture
D	Sand	4	Compound

(a)	(b)	(c)	(d)
ABCD	ABCD	ABCD	ABCD
2341	4312	3142	2143

- 28) Atomicity of nitrogen is _____.

(a) 1 (b) 2 (c) 3 (d) Zero

- 29) What will be the basicity of H_3BO_3 , which is not a protic acid?

(a) One (b) Two (c) Three (d) Four

- 30) Match the following prefixes with their multiples.

EQUIVALENT MASS (E)	MOLECULAR MASS (M)
A E_{kMnO_4} (Acidic)	1 M/2
B E_{kMnO_4} (Neutral)	2 M
C $E_{\text{H}_3\text{PO}_2}$	3 M/3
4 $E_{\text{H}_3\text{PO}_3}$	4 M/5

(a)	(b)	(c)	(d)
ABCD	ABCD	ABCD	ABCD
4321	4213	3421	3142

- 31) Two elements X and Y (atomic mass of X = 75; Y = 16) combine to give a compound having 76% of X. The formula of the compound is?

(a) XY (b) X_2Y (c) X_2Y_2 (d) X_2Y_3

- 32) The number of moles of H_2 in 0.224 litre of hydrogen gas at STP is _____.

(a) 1 (b) 0.1 (c) 0.01 (d) 0.001

- 33) 6.023×10^{20} molecules of urea are present in 100 ml of its solution. The concentration of the solution is _____

(a) 0.02M (b) 0.1M (c) 0.01M (d) 0.001M

- 34) Avogadro's number is the number of molecules present in _____.

(a) 1g of molecule (b) 1g atom of molecule (c) gram molecular mass (d) 1lit of molecule

- 35) Equivalent mass of KMnO_4 in acidic medium, concentrated alkaline medium and dilute basic medium respectively are $\frac{M}{5}$, M, M. Reduced products can be _____
- (a) MnO_2 , MnO_4^{2-} , Mn^{2+} (b) MnO_2 , Mn^{2+} , MnO_4^{2-} (c) Mn^{2+} , MnO_2 , MnO_4^{2-} (d) **Mn^{2+} , MnO_4^{2-} , MnO_2**
- 36) The equivalent mass of H_2SO_4 is _____.
- (a) **98** (b) 97 (c) 48 (d) 96
- 37) Which one of the following is not a redox reaction?
- (a) **Rusting of iron** (b) Extraction of metal Na (c) Electroplating (d) Aluminothermic process
- 38) In the reaction $2\text{AuCl}_3 + 3\text{SnCl}_2 \rightarrow 2\text{Au} + 3\text{SnCl}_4$ which is an oxidising agent?
- (a) **AuCl_3** (b) Au (c) SnCl_2 (d) Both AuCl_3 and SnCl_2
- 39) The oxidation state of a substance in its elementary state is equal to _____.
- (a) -1 (b) -2 (c) **Zero** (d) Charge of the ion
- 40) Which one of the following is an example for disproportionation reaction ?
- (a) $\text{CuSO}_4 + \text{Zn} \rightarrow \text{ZnSO}_4 + \text{Cu}$ (b) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$ (c) $\text{PCl}_5 \rightarrow \text{PCl}_3 + \text{Cl}_2$ (d) **$4\text{H}_3\text{PO}_3 \rightarrow 3\text{H}_3\text{PO}_4 + \text{PH}_3$**
- 41) How many molecules are present in 32 g of methane?
- (a) **$2 \times 6.023 \times 10^{23}$** (b) $6.023 \times 10^{23}/2$ (c) 6.023×10^{-23} (d) 3.011×10^{23}
- 42) Which of the following halogens do not exhibit positive oxidation number in its compounds?
- (a) **Fluorine** (b) Chlorine (c) Iodine (d) Bromine
- 43) On the reaction $2\text{Ag} + \text{H}_2\text{SO}_4 \rightarrow \text{Ag}_2\text{SO}_4 + 2\text{H}_2\text{O} + \text{SO}_2$. Sulphuric acid acts as _____.
- (a) oxidising agent (b) reducing agent (c) a catalyst (d) **an acid as well as an oxidant**
- 44) What state of matter is rain ?
- (a) Plasma (b) **Liquid** (c) Solid (d) gas
- 45) Compound is _____.
- (a) **Two (or) more atoms** (b) One type of atom (c) Both (a) & (b) (d) None of these
- 46) Homogeneous matter has _____.
- (a) Uniform composition (b) Non - uniform composition (c) Pure substances (d) **Both (a) & (c)**
- 47) An example for impure substance _____.
- (a) Sea water (b) Sand (c) Potassium (d) **Both (a) & (b)**
- 48) Relative atomic mass = _____.
- (a) $\frac{\text{Average mass of the atom}}{\text{Unified Atomic mass}}$ (b) $\frac{\text{Average mass of the molecule}}{\text{Unified molecular mass}}$ (c) $\frac{\text{Average mass of the atom}}{\text{Unified molecular mass}}$ (d) Both (a) & (c)
- 49) Relative molecular mass of H_2O is _____.
- (a) **18** (b) 16 (c) 22 (d) 19
- 50) Relative molecular mass of sucrose is _____.
- (a) **342.3** (b) 342.7 (c) 353.2 (d) 353.7