

Unit 7. Atoms and Molecules.

Important 2 Marks Questions:

- ① a) Define: Relative atomic mass
b) Relative atomic mass is otherwise known as _____
- ② Write the different types of isotopes of oxygen and its percentage abundance. ✖
- ③ a) Define: Atomicity ✖
b) Give examples for heteroatomic molecules.
- ④ What is Molar volume of a gas? ✖
- ⑤ (i) Find the percentage of nitrogen in ammonia.
(ii) Calculate % of 's' in H_2SO_4 ✖
(iii) Find the mass percentage composition of methane (CH_4)
- ⑥ (a) Calculate the number of water molecule present in one drop of water which weighs 0.18 gm.
(b) Calculate the number of atoms present in 1 gram of gold (Atomic mass of $Au = 198 \text{ gm}$).
(c) Calculate the number of molecules in 54 gm of H_2O ?
- ⑦ Define: (a) Isotopes (b) Isobars (c) Isotones. ✖
- ⑧ Calculate the gram molecular mass of the following:
(i) H_2O (ii) CO_2 (iii) $Ca_3(PO_4)_2$ (iv) H_2SO_4 (v) $NaOH$ ✖
- ⑨ Differentiate: Atoms and molecules ✖
- ⑩ What is homoatomic molecule and heteroatomic molecules? Give examples.

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(1) True? or False? (If false give the correct statement.)

(i) Noble gases are Diatomic

(ii) Molar mass of CO_2 is 42 gm.

(iii) The gram atomic mass of an element has no unit.

(iv) Atoms of different elements having same number of neutrons are called isotopes.

(v) H_2O molecules are diatomic

II Important 4, 7 Marks Questions:

(1) Give the salient features of "Modern atomic theory".

(2) Derive the relationship between Relative molecular mass and Vapour density.

(3) (a) Calculate the number of moles in
(i) 27 gm of Al (ii) 1.51×10^{23} molecules of NH_4Cl

(b) Calculate the % of oxygen in $\text{Al}_2(\text{SO}_4)_3$.

(Atomic mass: Al-27, O-16, S-32)

(4) (a) Write the applications of Avogadro's law.
(b) State "Avogadro's law".

(5) Classify the following molecules based on their atomicity and tabulate.

Fluorine (F_2), Carbon dioxide (CO_2), Phosphorus (P_4), Sulphur (S_8),

Ammonia (NH_3), Sulphuric Acid (H_2SO_4), Methane (CH_4),

Glucose ($\text{C}_6\text{H}_{12}\text{O}_6$), Carbon monoxide (CO), Oxygen (O_2), Hydrogen (H_2).

(6) Book back Questions: IX Solve the problems: ①, ②, ③, ④.

(7) Book back Qns: VII $\Rightarrow$ Hot Qns., VII - 2nd Qns.

8. Periodic Classification of Elements.

Important 2 Marks Questions

- ① True? or False? (If false give the correct statement)
 - a) Moseley's periodic table is based on atomic mass.
 - b) Ionic radius increases across the period from left to right.
 - c) An alloy is a heterogeneous mixture of metals.
 - d) **Ilahi High school YouTube**
- ② a) What is rust? give the equation for formation of rust?
 b) State two conditions necessary for rusting of iron. ✖
- ③ ~~What is~~ write the important ores of a) Copper ✖
 b) Aluminium. c) Iron with formula. (Any one ans).
- ④ Write the types and uses of iron. ✖
- ⑤ Write the uses of a) Copper b) Aluminium.
- ⑥ a) What is Alloys? b) Write the reasons for Alloying?
 c) Write the types of Alloy? ✖
- ⑦ a) State modern periodic table.
 b) Write any four features of Periods and groups in periodic table.
- ⑧ Define: (i) Atomic Radius, (ii) Ionisation Energy, (iii) Electronegativity. ✖ (Any one concept may ans)

9) Predict the nature of the bond in the following molecules. (i) NaCl (ii) NaBr (iii) NaI (iv) NaF (v) HCl (vi) NaH.

10) Book back Questions: VI ①, ②

11) (a) What is Amalgam? ~~use~~ Name the amalgam which is used for dental filling. ✗

II Important four, seven Marks Questions:

① Book back Questions: ①, ② ~~✗~~ → VII

② Explain Smelting process ~~✗~~.

③ Book back Hot Qns: VIII ①, ②, ③ ~~✗~~.

④ a) What is Corrosion?
b) What are the types of Corrosion?
c) Explain the Methods of preventing corrosion. ✗

⑤ Tabulate the uses of Copper, Aluminium and Iron Alloys. ✗

⑥ Write the physical and chemical properties of metal.

⑦ Explain the types of separation (or) concentration of an ore?

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Unit 9, Solutions.

1 Important 2 Marks Questions:

- ① What is aqueous and Non-aqueous solutions?
Give an examples. ✖
- ② Give an example each. (i) gas in liquids (ii) solid in liquid
(iii) solid in solid (iv) gas in gas. ✖
- ③ a) Define: Hydrated salts. ✖
b) A hot saturated solution of copper sulphate forms crystals as it cools. why?
- ④ a) Define: volume percentage. ✖
b) The aquatic animals live more in cold region. why?
- ⑤ True? or False? (if false give correct the statement)
a) In a solution, the component which is present in lesser amount is called solvent.
b) Sodium chloride is dissolved in water forms a non-aqueous solution.
c) The molecular formula of green vitriol is $MgSO_4 \cdot 7H_2O$
d) silica gel is one of example for hygroscopic substances.
- ⑥ a) what happens when $MgSO_4 \cdot 7H_2O$ is heated?
write the appropriate equation. ✖
b) Define: Solubility

(ii) Write the solubility's value of the following substances: (g/100 gm water)

- a) Sodium chloride (b) Ammonia (c) Sodium Bromide (d) glucose.

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11 important 4, 7 Marks Questions:

- ① Write notes on) Saturated Solution. (ii) unsaturated Solution (iii) Super saturated solution. ✖
- ② Write notes on various factor affecting solubility ✖
- ③ a) In what way hygroscopic substances differ from deliquescent substances ✖
b). Give ~~at~~ four examples for each hygroscopic and deliquescent substances.
- ④ a) What happens when Copper sulphate Penta hydrate salts are heated as well as cooled,? write the appropriate equation. ✖
b) Write any hydrated Salts Common Name, IUPAC Name and its Molecular formula.
- ⑤ Please well practiced All Solved problems ✖
(Problem based on mass percentage / volume-volume percentage) ✖
- ⑥ Book back Qns: VI - ⑤, ⑥th Qns. } ✖
- ⑦ Book back Qns: VII - ①, ②, ③ } ✖

Lesson 10 Types of Chemical reactions:

Important 2 Marks Questions:

- ① Define Combination reaction. give one example for an exothermic Combination reaction. ✖
- ② Differentiate reversible and irreversible reactions. ✖
- ③ Which of the metals displaces hydrogen gas from HCl? silver or zinc? Give the chemical equation of the reaction and justify your answer.
- ④ (i) $2\text{NaCl (aq)} + \text{F}_2 \text{ (g)} \rightarrow 2\text{NaF (aq)} + \text{Cl}_2 \text{ (g)}$
 (ii) $2\text{NaF (aq)} + \text{Cl}_2 \text{ (g)} \rightarrow 2\text{NaCl (aq)} + \text{F}_2 \text{ (g)}$
 which of the above two reactions possible to occur? why? Explain the reasons.
- ⑤ Differentiate Combination reactions and decomposition reactions.
- ⑥ a) Define: Ionic product of water. ✖
 b) write the mathematical expressions of ionic product of water, it's unit, also it's value.
- ⑦ Book Back HQT Qns: VII , 1, 2 Qns. ✖
- ⑧ Solved pH - problems 10.7, 10.8 All sums (refer). ✖
- ⑨ Book Back Qns: VIII Solve the following problems:
 Questions: 1, 2, 3, 4 ✖
- ⑩ What is Combustion reaction? Give one example equation.
- ⑪ Explain the single displacement reactions with suitable reactions.

Important 4 and 7 Marks Questions:

- ① What is decomposition reactions? Explain the types of decomposition reactions with examples. ✖
- ② Explain the types of double displacement reactions with examples. ✖
- ③ Explain the factors influencing the rate of a reaction. ✖
- ④ How does pH play an important role in everyday life? ✖
- ⑤ What is a chemical equilibrium? What are its characteristics?
- ⑥ a) What is combination reactions? ✖
b) Explain the various types of combinations with suitable reactions.

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Prepared By

M. Abbas Manthru

B.Sc, B.Ed, M.A, M.Phil,

B.T. Asst (Science)

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Unit: 11. Carbon and its Compounds.

- ①
 - a) Name the simplest ketone and give its structural formula.
 - b) The general molecular formula of alkynes is _____
 - c) The general molecular formula of Alkanes is _____
- ② Classify the following compounds based on - the pattern of carbon chain and give their structural formula.
 - (i) Propane (ii) Benzene (iii) Cyclobutane (iv) Furan. $\cdot \dot{X}$
- ③ How is ethanoic acid prepared from ethanol? Give the chemical equation. $\cdot \dot{X}$
- ④ How do detergents cause water pollution? suggest remedial measures to prevent this pollution.
- ⑤ Differentiate Soaps and detergents $\cdot \dot{X}$
- ⑥ Write the uses of Ethanoic acid. $\cdot \dot{X}$

⑦ Match the following:

<u>Compound</u>	<u>functional group.</u>
i) Alcohol	- $\begin{array}{c} \text{O} \\ \parallel \\ -\text{C}-\text{OH} \end{array}$
ii) Aldehyde	- $\begin{array}{c} \text{O} \\ \parallel \\ -\text{C}- \end{array}$
iii) Ketone	- $\begin{array}{c} \text{O} \\ \parallel \\ -\text{C}-\text{H} \end{array}$
iv) Carboxylic acid	- OH

- ⑧ Write the uses of Ethanol $\cdot \dot{X}$ $\rightarrow$ (Basic basic Qns: VII - 2nd Qns same with suitable reaction)
- ⑨ Explain the Esterification reaction
- ⑩ Write the IUPAC Names of the following Compound.
 - a) CH_3CHO (b) $\text{CH}_3\text{CH}_2\text{COCH}_3$ (c) $\text{ClCH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_3$
 - d) CH_3COOH (e) $\text{CH}_2\text{CH}_2\text{OH}$ (f) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$

- ⑪ Write any 4 points of characteristics of hydrocarbons.
 - ⑫ How to test, identify saturated and unsaturated compounds?
 - ⑬ a) write physical properties of ethanol.
b) write physical properties of ethanoic acid.
 - ⑭ a) ^{write the} Advantages of detergents over soaps? ~~X~~
b) write the disadvantages of detergents?
- II Important 4,7 Marks Questions:
- ① What is called homologous series? Give any three of its characteristics? ~~X~~
 - ② Arrive at, systematically, the IUPAC name of the following compounds.
 a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH}$ (b) $\text{CH}_3 - \overset{\text{CH}_3}{\underset{\text{CH}_2}{\text{CH}}} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$
 c) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH} = \text{CH}_2$.
 - ③ How is ethanol manufactured from sugarcane? ~~X~~
 - ④ Explain the mechanism of cleansing action of soap!

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10th Science

Half Yearly Exam 2022

Public Exam 2023

Unit wise Important Qn Bank

2,4, 7 Marks Questions

TM, EM Centum Marks Qns

Prepared By
M. Abbas Manthiri
B.Sc, B.Ed, M.A, M.Phil
B.T Assistant
Cell : 8940968432
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