

QUESTION BANK -2020-21

CHEMISTRY

CLASS-VII

CHAPTER-1, MATTER AND ITS COMPOSITION

QI) Name the following-

- 1) Smallest unit of an element - atom
- 2) Force of attraction between similar kind of molecules - force of cohesion
- 3) Force of attraction between the molecules - intermolecular force of attraction
- 4) Any matter which has mass and occupies space - matter
- 5) Group of matter with the same properties - state of matter
- 6) State of matter which has a definite shape and definite volume with any number of free surface -
solid
- 7) Substances that can flow - fluids
- 8) State of matter in which atoms of gas break into positively and negatively charged particles -
plasma
- 9) Smallest unit of matter - molecule
- 10) Energy possessed by molecules due to continuous motion - kinetic energy

QII) State the characteristics of liquids-

Ans- Liquids have --->

- 1) no definite shape
- 2) a definite volume
- 3) one definite free surface at the top
- 4) cannot be compressed
- 5) moderate/ less intermolecular force
- 6) moderate intermolecular space
- 7) moderate density
- 8) can flow.

QIII) Give reasons-

Why gases fill the entire space available to them?

Ans- Gases have least intermolecular force, maximum intermolecular space and maximum kinetic energy. So they are free to move in any direction and fill the entire space available to them.

CHAPTER 3, ELEMENTS, COMPOUNDS AND MIXTURES

QI) Name the following-

- 1) Type of elements formed by the loss of electrons - metals
- 2) Unreactive elements found in air in gaseous state - noble gases
- 3) Symbolic representation of one molecule of a compound - Formula
- 4) A liquid metal at room temperature - mercury
- 5) Liquid non-metal - bromine
- 6) Mixture with its constituents mixed uniformly - homogeneous mixture
- 7) Homogeneous mixture of molten metals - alloy
- 8) The alloy of zinc and copper - brass
- 9) Process in which solid substance changes to gaseous state - sublimation
- 10) Mixture of iodine in ethyl alcohol - tincture of iodine

QII) Give reasons-

- 1) Air is considered as a mixture.

Ans- i) The constituents of air are not present in fixed ratio

ii) oxygen and nitrogen can be separated from air by cooling them

iii) composition of air varies from place to place.

- 2) Water is regarded as a compound.

Ans- i) H_2 and O_2 in water are in the ratio 1:8 by weight

ii) H_2 and O_2 are gases at room temperature but H_2O extinguishes fire

iii) The constituents cannot be separated by physical means like filtration, boiling etc.

QIII) Write the observation-

- 1) Iron and Sulphur are heated.

Ans- i) When iron and sulphur are heated, it gives a reddish-glow

ii) on cooling, a black mass of iron sulphide is formed

2) Iron fillings and powdered sulphur are mixed.

Ans- Grey particles of iron and yellow particles of sulphur are seen clearly.

QIV) Name the separation techniques-

- 1) Ethyl alcohol + water - fractional distillation
- 2) Salt from salt solution - evaporation
- 3) Molten iron from molten slag - separating funnel
- 4) Separating coloured solutes from ink - chromatography
- 5) ammonium chloride and common salt - sublimation

QV) Name the solvents used-

- 1) Medical drugs and perfumes - ethanol
- 2) Paints and varnishes - benzene
- 3) Fats and oils - carbon tetrachloride
- 4) Oils and paints - turpentine
- 5) Cleaning paint and ink spots - acetone

CHAPTER-4, ATOMIC STRUCTURE

QI) Name the following-

- 1) Molecules of elements which have more than three atoms - polyatomic
- 2) The path along which electrons revolve - orbit / shell
- 3) Collective name for protons and neutrons - nucleons
- 4) The lightest sub-atomic particle - electron
- 5) The outermost shell - valence shell
- 6) Metallic ions formed by donating one valence electron - monovalent electropositive ions
- 7) The lower valency of iron - ferrous
- 8) Elements exhibiting more than one valency - variable valency
- 9) Vertical arrangement of elements in the periodic table - groups
- 10) Particles present outside the nucleus - electrons

QII) Give reasons-

1) An atom is electrically neutral.

Ans- An atom has equal number of positively charged protons and negatively charged electrons.

Neutrons carry no charge. so, atom of an element is electrically neutral.

2) Negatively charged electrons do not fall into the nucleus.

Ans- Negatively charged electrons revolve in fixed orbits at a fixed speed and is counter balanced by centrifugal force that balances the pull of nucleus.

QIII) Write differences between-

<u>Atom</u>	<u>Molecule</u>
i) smallest particle of an element	i) smallest particle of a matter
ii) may or may not have independent existence	ii) always exist independently

QIV) what is the importance of periodic table?

Ans- i) determines the atomic number of an element

ii) gives information about periodicity of elements

iii) gives information about the same number of valence electrons in a group.

QV) Find the molecular formulae-

1) Calcium hydroxide = $\text{Ca}^2 (\text{OH})^1 = \text{Ca}(\text{OH})_2$

2) Zinc sulphate = $\text{Zn}^2 (\text{SO}_4)^2 = \text{ZnSO}_4$

3) aluminium nitride = $\text{Al}^3 \text{N}^3 = \text{AlN}$

4) Ferrous chloride = $\text{Fe}^2 \text{Cl}^1 = \text{FeCl}_2$

5) Ferric oxide = $\text{Fe}^3 \text{O}^2 = \text{Fe}_2\text{O}_3$

QVI) What does each of the formulae represent?

1) 2H = two atoms of hydrogen

2) H_2 = one molecule of hydrogen

3) $7\text{H}_2\text{O}$ = seven molecules of water

4) 5CuSO_4 = five molecules of copper (II) sulphate

5) 2FeS = two molecules of ferrous sulphide

QVII) Write the chemical names-

- 1) Al_2O_3 = aluminium oxide
- 2) K_2SO_4 = potassium sulphate
- 3) Na_3PO_4 = sodium phosphate
- 4) Na_2PO_3 = sodium phosphite
- 5) Na_3P = sodium phosphide

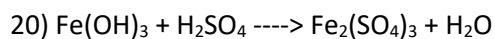
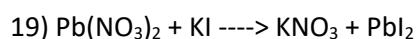
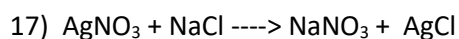
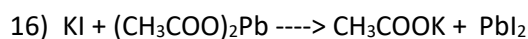
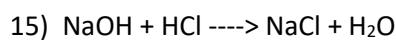
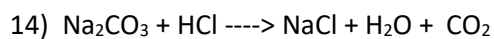
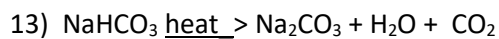
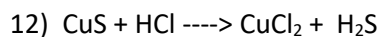
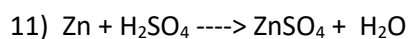
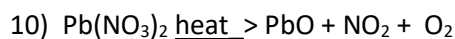
CHAPTER-5, LANGUAGE OF CHEMISTRY

QI) Name the following-

- 1) A reaction that takes place when two or more reactants come in close contact - chemical reaction
- 2) A change that alters the properties and chemical composition - chemical change
- 3) Chemical reactions which proceed with the release of heat energy - exothermic reaction
- 4) A chemical equation representing a chemical reaction - word equation
- 5) Substances which take part in a chemical reaction - reactants
- 6) Substances formed as a result of chemical change - products
- 7) Chemical reactions which proceed with the absorption of heat energy - endothermic reaction
- 8) A chemical equation in which the number of each atom of an element on reactant side is equal to the number of each element on the product side - balanced equation
- 9) Insoluble substance formed when two soluble chemical compounds are mixed together - precipitate
- 10) The initial energy used in heating of magnesium - energy of activation

QII) Complete the equation-

- 1) $\text{Mg} + \text{O}_2 \xrightarrow{\text{burn}}$ MgO
- 2) $\text{H}_2 + \text{O}_2 \xrightarrow{\text{electric current}}$ H_2O
- 3) $\text{C} + \text{S} \xrightarrow{\text{heat}}$ CS_2
- 4) $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$
- 5) $\text{CaO} + \text{H}_2\text{O} \xrightarrow{\text{heat}}$ Ca(OH)_2
- 6) $\text{NaNO}_3 \xrightarrow{\text{heat}}$ $\text{NaNO}_2 + \text{O}_2$
- 7) $\text{NH}_4\text{Cl} \xrightarrow{\text{heat}}$ $\text{NH}_3 + \text{HCl}$
- 8) $\text{CuCO}_3 \xrightarrow{\text{heat}}$ $\text{CuO} + \text{CO}_2$
- 9) $\text{Pb}_3\text{O}_4 \xrightarrow{\text{heat}}$ $\text{PbO} + \text{O}_2$



QIII) Write the observation-

1) Sodium nitrate crystals are heated strongly.

Ans- White crystals melt on strong heating.

2) Copper (II) sulphide reacts with hydrochloric acid.

Ans- Foul smelling gas H_2S is given off.

3) Red lead oxide is heated strongly.

Ans- When red lead oxide is heated strongly, yellow colour lead monoxide is left as residue.

4) Green copper carbonate is heated strongly.

Ans- When CuCO_3 is heated strongly, it leaves behind a black residue of CuO .

5) Lead nitrate crystals are heated.

Ans- White lead nitrate when heated strongly, leave a yellow residue of PbO and gives off reddish-brown gas NO_2 .

6) Potassium iodide solution reacts with lead acetate solution.

Ans- Yellow precipitate PbI_2 is formed.

7) Green FeSO_4 solution reacts with NaOH solution.

Ans- Dirty green precipitate of $\text{Fe}(\text{OH})_2$ is formed.

8) Colourless lead (II) nitrate solution is mixed with colourless solution of KI .

Ans- Yellow precipitate of PbI_2 is formed.

9) A small piece of quick lime is placed in water.

Ans- water becomes very hot.

10) Magnesium ribbon burns in air.

Ans- Magnesium ribbon burns with dazzling white light and form white powder MgO .

N.B- Name the following questions may be asked in form of definitions, match the columns, fill in the blanks, MCQs etc.

CHAPTER - 2, PHYSICAL AND CHEMICAL CHANGES-

Q1) Name the following -

- 1) A temporary change in which no new substance is formed - physical change
- 2) The fixed temperature at which a pure solid changes into liquid at atmospheric pressure - melting point.
- 3) The process of changing of a liquid rapidly into a gas on heating - boiling
- 4) Type of change involving change in molecular composition - chemical change
- 5) Type of change that is temporary in nature - physical change

Q2) Identify the type of change (Physical / Chemical)

- 1) Melting of wax - physical change
- 2) Charring of sugar - chemical change
- 3) Heating of zinc oxide - physical change
- 4) Strong heating of mercuric oxide - chemical change
- 5) Making of sugar solution - physical change
- 6) Burning of magnesium ribbon - chemical change
- 7) Heating platinum or nichrome wire - physical change
- 8) Magnetising a piece of iron - physical change
- 9) Burning of candle - chemical change
- 10) Clotting of blood - chemical change

Q3) Write the observation -

- 1) Heating of mercuric oxide

Ans - Orange - red powder (or red powder) on heating changes to silvery globules of mercury.

- 2) Heating sugar crystals

Ans - White sugar crystals turn brown and then black.

Q4) Give reasons -

1) When iron becomes rust, its weight increases

Ans - Iron becomes rust when it reacts with oxygen of air to form iron-oxide. The extra oxygen added up to iron increases the weight.

2) Heating Zinc oxide is a physical change.

Ans – On heating, white zinc oxide turns yellow and on cooling, it turns back to white. Since no new substances are formed, it is a physical change.

N.B: The questions may be altered into other format; such as :

Fill in the blanks, matching, True/False, reasoning, definition, differences, etc.

CHAPTER- 6, METALS AND NON-METALS -

Q1) Name the following -

- 1) Soft metal - Sodium , potassium
- 2) Metal that is not very malleable nor ductile - zinc
- 3) The second best conducting metal - copper
- 4) Liquid non-metal - bromine
- 5) Metal that reacts with hydrogen sulphide and turns black - silver
- 6) Metal used as tip of bullets - lead
- 7) Metal used as fuse wire in thermite welding - Magnesium
- 8) Process of coating hot iron with molten zinc - galvanisation
- 9) Alloy used in making frame of aeroplanes - magnalium
- 10) The solution of a metal in mercury - amalgam
- 11) Metal used as negative electrode of dry cell - zinc
- 12) Metals used for making fusible alloys - tin and lead
- 13) Powdered crystals used for seeding clouds for causing artificial rain - silver nitrate
- 14) Lustrous non-metal - iodine , graphite
- 15) Non-metal that dilutes the activity of oxygen - nitrogen
- 16) Non-metal used during extraction of metals like iron - oxygen
- 17) Greenish yellow poisonous gas - chlorine

- 18) Non-metal used in the sterilisation of drinking water - chlorine
- 19) Solvent for iodine - alcohol , carbontetrachloride , potassium iodide solution
- 20) substance that increases the hardness of pencil - clay
- 21) Non-metal used as dry lubricant - graphite
- 22) Non- metal used to slow down the neutrons in nuclear reactors - graphite
- 23) The second lightest element - helium
- 24) Alloy used to make surgical instruments - stainless steel
- 25) An alloy of aluminium, copper, magnesium and manganese - duralumin
- 26) Alloy used for making air-craft frames - duralumin
- 27) Coating of a brown powdery substance on the surface of iron - rust
- 28) Types of elements having properties of metals and non-metals - metalloids

Q2) How can rusting be prevented?

Ans - 1) oiling and greasing

2) painting

3) coating with other metals

4) converting iron into stainless steel

Q3) Mention the conditions for rusting

Ans - Iron article , oxygen ,water

N.B: The questions may be altered into other format; such as :

Fill in the blanks, matching, True/False, reasoning, definition, differences, etc.

CHAPTER-7, AIR AND ATMOSPHERE

Q1) Name the following -

- 1) Bacteria that absorb nitrogen from air - symbiotic bacteria/ any relevant bacteria name
- 2) Most abundant gas in the atmosphere - nitrogen
- 3) Gas that helps to manufacture food for plants - carbon-dioxide
- 4) Gas used in fire extinguisher – carbon-dioxide
- 5) The trapping of solar heat energy in earth's atmosphere - greenhouse effect

- 6) Component of air that affects the climatic condition
- 7) Noble gas used to fill weather observation balloons - helium
- 8) Noble gas used in filament bulbs - argon

Q2) Give reasons -

- 1) Nitrogen is used to pack food products

Ans - Nitrogen is unreactive and prevents the growth of bacteria. so, it is used for food packaging.

- 2) Carbon-dioxide is used to extinguish fire

Ans - Carbon-dioxide act as insulator and cut off oxygen supply of air to fire. For electrical fires, liquid carbon-dioxide under pressure is used.

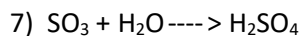
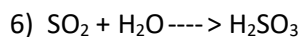
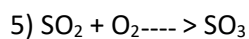
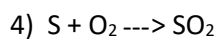
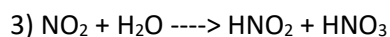
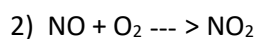
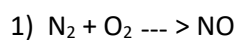
Q3) Give some harmful results of greenhouse effect.

Ans - 1) ice melt on polar caps

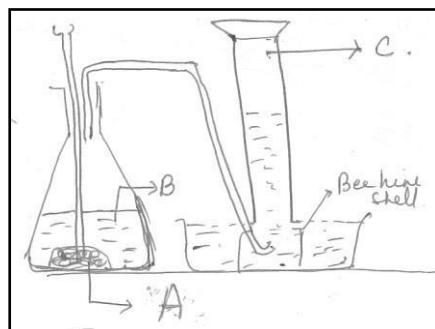
2) sea water level rises

3) coastal regions and islands submerge

Q4) Complete the reactions -



Q5) Answer the following questions with respect to the diagram given below for the preparation of a gas that supports burning -



- i) Identify **A** , **B** and **C**.
- ii) Write the reaction taking place in the conical flask.
- iii) State the method of collection of the gas.
- iv) Mention the role of '**A**' in the reaction.

Answers-

- i) **A** → Manganese dioxide **B** → Hydrogen peroxide **C** → Oxygen
- ii) $2\text{H}_2\text{O}_2 + \text{MnO}_2 \xrightarrow{\text{catalyst}} 2\text{H}_2\text{O} + \text{O}_2$
- iii) Downward displacement of water.
- iv) '**A**' acts as a catalyst / initiates the decomposition of '**B**' .

Q6) State the colour of the flame, when the following elements are burnt-

- i) Carbon → yellow
- ii) Sulphur → blue
- iii) Phosphorous → dazzling white
- iv) Sodium → golden yellow
- v) Calcium → brick red
- vi) Magnesium → dazzling white
- vii) Potassium → lilac / violet

Q7) Choose the odd one out and give reasons for your choice -

- i) Sodium, Potassium, Calcium, Magnesium, Mercury

Ans- Mercury is a liquid metal, others are solid.

- ii) Oxygen, hydrogen, nitrogen, gold

Ans- Gold is a metal and others are non-metals.

N.B- Questions from name the following may be framed as definition, match the following, fill in the blanks, true and false, etc.