St. Thomas' School, Agra

Half Yearly Examination (2024-25)

Specimen Question Paper

Class: VIII

Subject: Chemistry

M. Time: 2 Hours **M. Marks: 80**

Name: _____ Roll No.: _____

Section - A

Question 1. Choose and write the correct answer: **[10]**

i. Which of the following is a crystalline form of carbon?

(a) Lamp black (c) Charcoal

(b) Coke (d) Diamond

ii. Which form of coal is the hardest and purest?

(a) Peat (c) Anthracite

(b) Lignite (d) Bituminous

iii. The correct order of reactivity of the four given metals is:

(a) K > Na > Cu> Mg (c) Cu> Mg >Na> K

(b) Mg >Na > Cu > K (d) K > Na > Mg > Cu

iv. Hard water contains salts of _____.

(a) Calcium and sodium (c) Calcium and magnesium

(b) Sodium and magnesium (d) Aluminium and potassium

v. Which of the following is not a physical property of hydrogen gas?

(a) Tasteless (c) Colourless

(b) Pungent odour (d) Lighter than air

vi. Chemical formula of calcium bicarbonate:

(a) $CaCO_3$ (c) $Ca(HCO_3)_2$

(b) Na_2CO_3 (d) $Ca(OH)_2$

vii. When the solvent is water, the solutions formed is called:

(a) Hydra solutions (c) Unsaturated solution

(b) Aqueous solutions (d) Saturated solution

viii. _____ discovered hydrogen gas as an element.

(a) Joseph Priestley (c) Henry Cavendish

(b) Antonie Lavoisier (d) Joseph Black

ix. The plate connected to the negative terminal of a battery is called _____.

(a) Cathode (c) Anode

(b) Electrolysis (d) Electrolyte

x. The substance through which an electric current is passed to decompose it, is called an:

(a) Electrode (b) Electrolyte

(c) Anode (d) Cathode

xi. Which scientist developed the law of conservation of mass?

(a) Robert Boyle (c) Antoine Lavoisier

(b) John Dalton (d) Dmitri Mendeleev

xii. The process of separating a solid from a liquid by pouring off the liquid is known as:

(a) Filtration (c) Evaporation

(b) Decantation (d) Crystallization

xiii. Which of the following is a good conductor of electricity in its molten state?

(a) Sulfur (c) Sodium chloride

(b) Carbon dioxide (d) Water

xiv. The process in which a substance changes from a solid to a liquid is called:

(a) Condensation (c) Sublimation

(b) Melting (d) Freezing

xv. A solution that contains the maximum amount of solute that can dissolve at a given temperature is called a:

(a) Dilute solution (c) Saturated solution

(b) Concentrated solution (d) Supersaturated solution

Question 2.

i. Complete the following statements: [5]

(a) In _____ reaction, a chemical compound breaks down into two or more simpler products.

(b) Combination reactions are also known as _____ reactions.

(c) When steam is passed over red hot coke at a temperature of about 1200°C, a mixture of carbon monoxide and hydrogen is produced. This mixture is called _____.

(d) In _____, each carbon atom is bonded to three other carbon atoms forming hexagonal rings.

(e) In _____, particles do not pass through filter paper and can be separated by filtration.

ii. Write true or false for the following statements and also correct the false statements: [5]

(a) Wood charcoal is a poor adsorbent.

(b) The phenomenon by which an element exists in more than one form in the same physical state is called allotropy.

(c) Permanent hardness can be removed by boiling.

(d) Hydrated salts contain water of crystallisation.

(e) Hydrogen is the most abundant element in the universe.

iii. Complete and balance the following chemical equations: [5]

(a) $CO_2 + Ca(OH)_2$ -----→ _____ + H_2O

(b) $CH_4 + 2O_2$ ----→ _____ + H_2O

(c) $Mg + O_2$ ---→ _____

(d) $H_2 + Cl_2$ ---→ _____

(e) $N_2 + H_2$ ---→ _____

iv. Give a scientific word for each of the following. [5]

(a) The reaction in which oxidation or reduction occur simultaneously.

(b) The substance that oxidises another substance.

(c) The fixed amount of water which is necessary for the formation of crystals of salts.

(d) The series in which metals are arranged in decreasing order of their reactivity.

(e) The process of making coke by heating coal in a limited supply of air.

v. Write the chemical formula and common name of the following salts: **[5]**

(a) Iron sulphate heptahydrate
(b) Zinc sulphate heptahydrate
(c) Sodium carbonate decahydrate
(d) Magnesium sulphate heptahydrate
(e) Calcium sulphate dihydrate

vi. Match the items given in Column A with the most appropriate ones in Column B and rewrite the correct matching pairs: **[5]**

Column A	Column B
i. Hydrated salt	(a) Sodium hydroxide (NaOH)
ii. Colloids	(b) Silica gel
iii. Deliquescent substances	(c) Blue vitriol
iv. Efflorescent substances	(d) Milk, blood
v. Drying agent	(e) Washing soda

Section- B

[10]

Question 3.

i. Give reasons for the following statements:

(a) Hard water is not good for washing clothes.
(b) True solutions are stable.
(c) Hydrogen is used in cutting and welding.

ii. In which of the following reactions will displacement occur? Give a reason to support your answer.

(a) Reaction of magnesium with copper sulphate solution
(b) Reaction of copper with magnesium sulphate solution

iii. Describe the difference between the following reactions. Support your answer with an example.

(a) Single displacement and double displacement reaction

(b) Combination and decomposition reaction

(c) Exothermic and endothermic reaction

iv. What is metal reactivity series? How it is helpful in the displacement reactions?

Question 4. **[10]**

i. Write equations for the following reactions:

(a) Reaction of natural gas (Methane) with steam in presence of catalyst nickel at about 800°C
(b) Reaction of sodium with water
(c) Reaction of zinc with dilute sulphuric acid.

ii. List any two uses of hydrogen.

iii. How can we observe the effect of heat on blue hydrated copper sulphate crystals? Explain with the help of an activity.

iv. Soniya dissolved a spoon of common salt in water and her brother Rachit dissolved a spoon of chalk powder in water. Which of them forms a true solution? Why?

Question 5. **[10]**

i. Give one example each of the given salts:

(a) Efflorescent (b) Hygroscopic (c) Anhydrous

ii. A beam of light become visible when passed through a colloidal solution. Why?

iii. Compare the properties of a true solution, colloidal solution and suspension. (Any three points)

iv. Write a difference between the crystalline and amorphous forms of carbon. What is a fullerene?

Question 6. **[10]**

i. Draw a diagram to show electrolysis of water to form hydrogen gas.

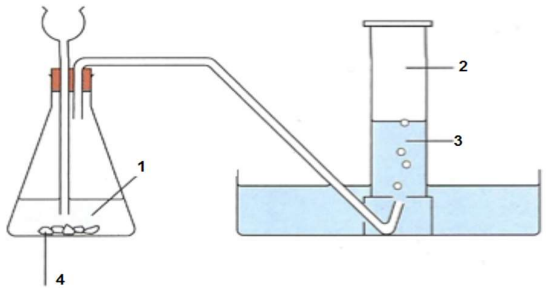
ii. Observe the following reaction and answer the following:

$CuO + H_2$ ----→ $Cu + H_2O$

(a) Name the substance reduced

(b) Name the substance oxidized

iii. Study the given diagram of the preparation of carbon dioxide in the laboratory and answer the following questions:



(a) Label the given diagram.

(b) How is the gas tested?

(c) Write the balanced chemical equation involved in this laboratory preparation.

iv. How is wood charcoal prepared from wood? Explain the process with the help of a well-labelled diagram.