

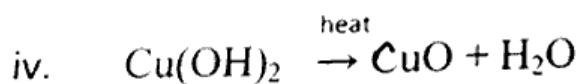
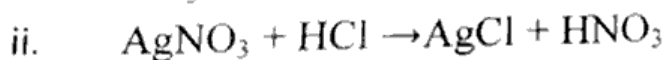
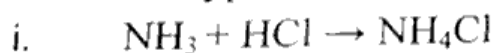
Section I is compulsory. Attempt any four questions from Section II.

## SECTION I (40 MARKS)

ATTEMPT ALL QUESTIONS

## QUESTION I

a. Name the type of chemical reaction for the following. (5)



b. Write one observation for the following (5)

i. A few pieces of iron are added to  $\text{CuSO}_4$  solution.

ii. Dilute  $\text{H}_2\text{SO}_4$  is added to barium chloride solution.

iii. Silver nitrate is added to sodium chloride solution.

iv. Electric current is passed through acidulated water.

v. Magnesium ribbon is burnt in air.

c. Write a suitable term / substance for the following. (5)

i. The sub-atomic particle with a positive charge.

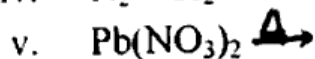
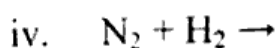
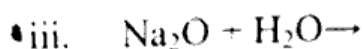
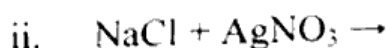
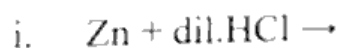
ii. Different forms of an element found in the same physical state.

iii. The property by which atoms of an element link together to form long chain or ring compounds.

iv. The insoluble compound which is formed when  $\text{CO}_2$  is passed through lime water.

v. A change that is repeated at regular intervals of time.

d. Complete and balance the chemical equations.



- e. Choose the correct options from the following. (5)
- Burning of paper is a -----change. (physical /chemical)
  - The number of valence electrons present in sodium is -----.( 1 / 2)
  - The molecular formula of aluminium nitride is -----.(  $\text{Al}_2\text{N}_3$  /  $\text{AlN}$  )
  - Washing soda is -----.(  $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$  /  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  )
  - The symbolic representation of phosphate radical is -----.(  $\text{PO}_3^{4-}$  /  $\text{PO}_4^{3-}$  )

- f. Give a scientific reason for each of the following. (5)
- Atoms combine to form molecules.
  - Silica gel pouches are kept in unused bottles.
  - Carbon dioxide is not collected over water.
  - $\text{CuSO}_4$  crystals turn white when heated.
  - Carbon monoxide is called the silent killer.

- g. Differentiate between with one example each. (5)
- Physical and chemical changes.
  - Atomic number and mass number.
  - Reactants and products.
  - A suspension and a solution.
  - Efflorescence and deliquescence.

h. question missing

- Write the balanced chemical equation for the preparation.
  - How is the gas collected during the reaction?
  - Why is granulated Zinc preferred?
  - Dilute  $\text{HNO}_3$  is not used for the reaction. Give reason.
- i. Define water of crystallization. (1)

Section -II ( 40 MARKS)

Attempt any four questions

Question 2 ✓

- Name the gas produced when Steam is passed over hot coke. (3)
  - Fossil fuels are burnt.
  - A piece of sodium is added to water.
- b) Burning of candle is both a physical and a chemical change. Give reason. (2)
- c) What are isotopes? Draw the diagram representing the atomic structure of Magnesium. (3)
- d) Write balanced chemical equations for the following. (2)
- Iron + chlorine  $\rightarrow$  iron (III) chloride.
  - Calcium oxide + water  $\rightarrow$  calcium hydroxide.

Question 3 ✓

- a) Name the following. (2)
- Arrangement of electrons in the shell of an atom.
  - The smallest unit of an element which takes part in a chemical reaction.
- b) Name the products of the following reactions. (2)
- Copper sulphate reacts with hydrogen sulphide gas.
  - Calcium carbonate is heated.
- c) Write a balanced chemical equation for the electrolysis of water. Name the products formed at the cathode and anode. (2)
- d) For the laboratory preparation of  $\text{CO}_2$ . (4)
- Name the reagents required.
  - Write a balanced chemical equation.
  - The method of collection of the gas.
  - Name the apparatus used.

Question 4

- a) Classify the changes as physical / chemical changes. (2)
- Making of a sugar solution.
  - Curdling of milk.
- b) State the number of neutrons and the electronic configuration of the following elements. (2)
- ${}_{13}\text{Al}^{27}$
  - ${}_{17}\text{Cl}^{35}$
- c)  $\text{PbO}$  is amphoteric in nature. Give reason and write balanced chemical equations to prove your answer. (3)
- d) How is carbon monoxide is prepared? (3)
- Prove that  $\text{CO}_2$  is acidic in nature ( using litmus paper).

Question 5 ✓

- a) Write the symbolic representation of the following radicals. (2)
- Acetate
  - Bicarbonate
- b) What do you observe when copper carbonate is heated in a test tube? (1)
- c) Give any two steps to balance  $\text{CO}_2$  in the atmosphere? (2)
- d) Define (2)
- Exothermic reaction
  - Destructive distillation

- e) Distinguish between double displacement reaction and simple displacement reaction with one example each. (3)

Question 6 ✓

- a) Write the molecular formula of (2)  
i. Baking soda  
ii. Sulphuric acid
- b) How will you obtain (3)  
i. Ammonia from nitrogen?  
ii. Magnesium oxide from magnesium?  
Write balanced chemical equation for both. (2)
- c) Name the following (2)  
i. The mixture of 95% of oxygen and 5% carbon dioxide.  
ii. Two green house gases.
- d) When we open a bottle of carbonated drink, some of the gas comes out with a hissing sound. Why? (2)
- e) Producer gas is a mixture of ----- and ----- (1)

Question 7

- a) State the law of conservation of mass and balance the equation; (2)  
 $Zn + HCl \rightarrow ZnCl_2 + H_2$
- b) Define a catalyst. Write one example each for a negative and a positive catalyst. (2)
- c) What do you observe when phenolphthalein is added to (2)  
i. Sodium hydroxide solution  
ii. Dilute sulphuric acid
- d) Define metal activity series. (3)  
Write an example each for ;  
i. Basic oxide  
ii. Acidic oxide  
iii. Neutral oxide (1)
- e) Define a combination reaction.

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