

# Self Assessment Paper

## General Instructions:

Answers to this paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this paper is the time allowed for writing the answers.

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

The intended marks for questions or parts of questions are given in brackets [ ].

## Section I

*Attempt all the Questions from this Section*

### Question 1

- (a) Name the following: [5]
- The type of reactions alkenes undergo
  - An element having highest electronegativity.
  - An alkali, which is deliquescent in nature.
  - Second member of alkene series.
  - The acid which is used in the preparation of a non-volatile acid.
- (b) State relevant observations for the following: [5]
- Lead nitrate crystals are heated in a hard glass test tube.
  - Ferrous sulphate crystals come in contact with concentrated sulphuric acid.
  - Magnesium strip is dropped in dilute hydrochloric acid.
- (c) Give reasons why? [5]
- Hydrocarbons are excellent fuels.
  - Liquid ammonia is used as refrigerant in ice plants.
  - Alkali metals are good reducing agent.
  - Carbon tetrachloride does not conduct electricity.
  - Iron is rendered passive with fuming nitric acid.

- (d) Choose the correct answers from the options given below : [5]
- (i) An alkaline earth metal :
- (a) Potassium
  - (b) Calcium
  - (c) Lead
  - (d) Copper
- (ii) The acid present in the sting of bees is :
- (a) Lactic acid
  - (b) Formic acid
  - (c) Malic acid
  - (d) Uric acid
- AI** (iii) During the electrolysis of acidified water which of the following takes place :
- (a) Oxygen is released at anode
  - (b) Oxygen is released at cathode
  - (c) Hydrogen is released at anode
  - (d) Sulphur dioxide is released at anode
- (iv) The IUPAC name of acetylene is :
- (a) Propane
  - (b) Propyne
  - (c) Ethene
  - (d) Ethyne
- (v) Formation of chloroform from methane and chlorine is an example of—
- (a) Addition
  - (b) Dehydration
  - (c) Substitution
  - (d) Elimination
- (e) Choosing only words from the following list write down the appropriate words to fill in the blanks below : [5]  
[anions, anode, cathode, cations, electrode, electrolyte, nickel, voltmeter.]  
To electroplate an article with nickel requires an (i) \_\_\_\_\_ which must be a solution containing (ii) \_\_\_\_\_ ions. The article to be plated is placed on the (iii) \_\_\_\_\_ of the cell in which the plating is carried out. The (iv) \_\_\_\_\_ of the cell is made from pure nickel. The ions which are attracted to the negative electrode and discharged are called (v) \_\_\_\_\_.
- (f) Write balanced chemical equations for the following : [5]
- (i) Sodium hydroxide is added to copper sulphate solution
  - (ii) Lead nitrate solution is added to sodium chloride solution.
  - (iii) Magnesium sulphate solution is mixed with barium chloride solution.
- AI** (iv) To get an unsaturated hydrocarbon from an alcohol.
- (v) Silver nitrate solution is added to sodium chloride solution.
- (g) Draw the structural formula for the following compounds : [5]
- (i) But-2-ene
  - (ii) Ethanol
  - (iii) 2, 2-dimethylpentane
  - (iv) Propanal
  - AI** (v) An isomer of butane

- (h) Give one word or phrase for the following : [5]
- The tendency of an atom to attract electrons to itself when combined in a compound.
  - Formation of ions from molecules.
  - A definite number of water molecules bound to some salts.
  - The property of spontaneously giving up water of crystallization to the atmosphere.
  - Process which protects iron from rusting, it is coated with a thin layer of zinc.

## Section II

(40 Marks)

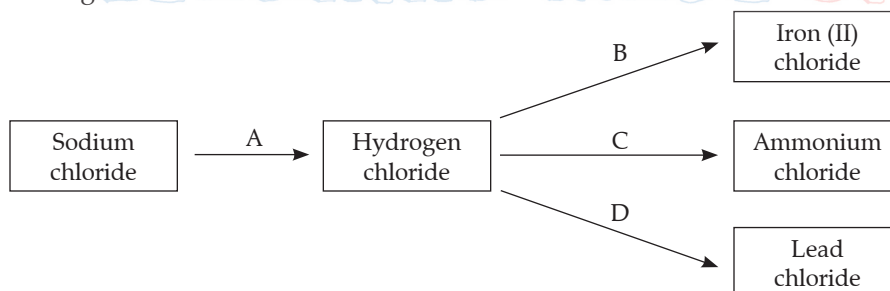
Attempt *any four* questions from this Section

## Question 2

- AI** (a) (i) Write the equations for the formation of ammonia by the action of water on magnesium nitride. [5]
- How is ammonia collected?
  - Why is ammonia not collected over water?
  - Which compound is normally used as a drying agent for ammonia?
  - How would you distinguish between  $Zn^{2+}$  and  $Pb^{2+}$  ions using ammonium hydroxide solution?
- (b) M is a metal above hydrogen in the activity series and its oxide has the formula  $M_2O$ . This oxide when dissolved in water forms the corresponding hydroxide which is good conductor of electricity. In the above context answer the following : [5]
- What kind of combination exists between M and O?
  - How many electrons are there in the outermost shell of M?
  - Name the group to which M belongs.
  - State the reaction taking place at the cathode.
  - Name the product at the anode.

## Question 3

- (a) Refer to the flow chart diagram below and give balanced equations with conditions if any for the following conversions A to D. [4]



- (b) Give one equation each to show the following properties of sulphuric acid: [3]
- Dehydrating property
  - Acidic nature
  - As a non-volatile acid.
- (c) (i) What would you observe when copper is heated with concentrated nitric acid in a hard glass tube? Write an equation to justify your answer. [2]
- (ii) What is the property of nitric acid which allows it to react with copper? [1]

## Question 4

- (a) A compound made up of two elements X and Y has an empirical formula  $X_2Y$ . If the atomic weight of X is 10 and that of Y is 5 and the compound has a vapour density 25, find the molecular formula. [5]
- (b) State the inference drawn from the following observations : [5]
- On carrying out the flame test with a salt P a brick red flame was obtained. What is the cation in P?

- (ii) A gas Q turns moist lead acetate paper silvery black. Identify the gas Q.
- (iii) pH of liquid R is 10. What kind of substance is R ?
- (iv) Salt S is prepared by reacting dilute sulphuric acid with copper oxide.
- (v) A salt M on treatment with concentrated sulphuric acid produces a gas which fumes in moist air and gives dense fumes with ammonia. Identify M.

**Question 5**

- AI** (a) Mr. Ramu wants to electroplate his key chain with Nickel to prevent rusting. For this electroplating : [5]
- (i) Name the electrolyte.
  - (ii) Name the cathode.
  - (iii) Name the anode.
  - (iv) Give the reaction at the cathode.
  - (v) Give the reaction at the anode.
- (b) (i) Explain the bonding in methane molecule using electron dot structure. [5]
- (ii) Compare the compounds carbon tetrachloride and sodium chloride with regard to solubility in water and electrical conductivity.

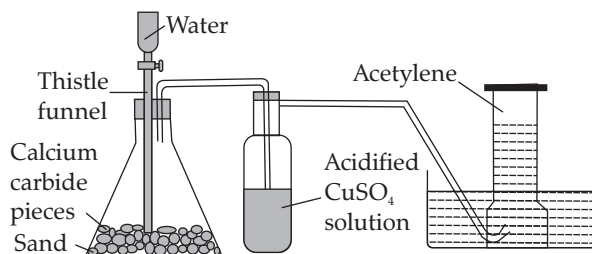
**Question 6**

- (a) (i) What is meant by a group in the periodic table? [4]
- (ii) Within a group where would you expect to find the element with  
(A) the greatest metallic character?  
(B) the largest atomic size?
- (iii) State whether the ionization potential decreases on going down a group.
- (iv) How many elements are there in period 2?
- (b) Rewrite the following sentences by using the correct symbol > (greater than) or < (less than) in the blanks given : [2]
- (i) The ionization potential of potassium is \_\_\_\_\_ that of sodium.
  - (ii) The electronegativity of iodine is \_\_\_\_\_ that of chlorine.

- AI** (c) Give reasons why? [4]
- (i) Ionic compounds do not conduct electric current in the solid state.
  - (ii) Electrolysis is an example of a redox reaction.
  - (iii) For the preparation of hydrochloric acid, hydrogen is not directly absorbed in water.
  - (iv) Tap water is not used to prepare a solution of silver nitrate in the laboratory.

**Question 7**

- (a) [5]



**Laboratory preparation of acetylene**

- (i) Write the equation to explain the reaction taking place in the above diagram?
- (ii) Give the function of acidified copper sulphate solution.
- (iii) Give a reaction in which acetylene gas is prepared by synthesis reaction.
- (iv) Compare the reaction of acetylene with bromine water and liquid bromine.
- (v) What happens when acetylene is heated in copper tube at 600°C?

- AI** (b) Define the term "Catenation". [1]
- (c) Fill in the blanks with the choices given in brackets :
- (i) Conversion of ethene to ethane is an example of \_\_\_\_\_ (hydration/hydrogenation)
  - (ii) The commonly used catalyst for conversion of ethene to ethane is \_\_\_\_\_ (nickel/iron/cobalt).
  - (iii) The product formed when ethene gas reacts with water in the presence of sulphuric acid is \_\_\_\_\_ (ethanol/ethanal/ethanoic acid)
  - (iv) \_\_\_\_\_ burns with a non-luminous flame. (butane/methane/acetylene). [4]

Finished Solving the Paper ?  
Time to evaluate yourself !  
<https://qrqo.page.link/yNmJf>

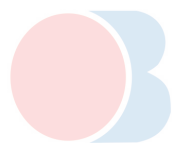

OR

SCAN THE CODE



For elaborate Solutions

**OSWAAL COGNITIVE LEARNING TOOLS**



**OSWAAL BOOKS**  
LEARNING MADE SIMPLE