

Marking Scheme: Questions carry 10 marks each. Questions have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.

## Question: 1

- A. Name the following:
  - a. The metal used in hydrogenation of oils.
  - b. The metal which reacts with steam liberating hydrogen and reaction is reversible.
  - c. The metallic compound used as a catalyst in Bosch process.
- B. Hydrogen is combustible gas and non-supporter of combustion. Explain.
- C. Give the reasons for the following:
  - a. In Bosch process- the final products are passed through caustic potash (KOH) solution.
  - b. The reaction of chlorine and hydrogen sulphide is deemed a redox reaction.  $\rm Cl_2 + H_2S \rightarrow 2HCl + S$

## Question: 2

- A. How would you obtain following from hydrogen:
  - a. A neutral liquid(water)
  - b. A basic gas(ammonia)
- B. Give three properties of hydrogen.
- C. Give equation of the laboratory preparation of hydrogen with diagram.

## Question: 3

- A. Give a balanced chemical equation for the electrolysis of water. Why distilled water is not used for the electrolysis of water?
- B. Complete and balance the following equations;
  - a.  $ZnO + H_2 \rightarrow$
  - b. Zn + NaOH  $\rightarrow$
- C. Give the balanced equations for the following conversions:
  - a. water gas to hydrogen
  - b. iron (III) oxide to iron