

Marking Scheme: Three questions carry 10 marks each. Each question has 3 sub-parts. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.

Question 1

- A. Differentiate between combination and decomposition reactions with example
- B. Balance the following chemical equations:
 - a. Fe + H₂O \longrightarrow Fe₃O₄ + H₂

 - c. $HNO_3 + Ca(OH)_2 \longrightarrow Ca(NO_3)_2 + H_2O$
- C. Explain exothermic and endothermic reactions with example.

Question 2

A. Translate following statements into chemical equations and then balance them:

- a. Hydrogen gas combines with nitrogen to form ammonia
- b. Hydrogen sulphide gas burns in air to give water and sulphur dioxide.
- c. Aluminium reacts with hydrochloric acid to give aluminium chloride and hydrogen gas.
- B. Identify the type of reaction for the following:
 - a. CaO + $H_2O \longrightarrow Ca(OH)_2$
 - b. Fe + CuSO₄ \longrightarrow FeSO₄ + Cu
 - c. 2Pb(NO₃)₂ → 2PbO + 4NO₂ + O₂
- C. Define following terms:
 - a. Corrosion b. Rancidity

Question 3

- A. Explain electrolysis of water with equations occurring at cathode and anode.
- B. Identify the substances that are oxidised and that are reduced in the following reactions:
 - a. $4Na + O_2 \rightarrow 2Na 2 O$ b. $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$

C. Substance X is used for white washing; it reacts with CO_2 to form limestone (Y). Identify X and Y. Also, give balanced equation involved.

X + CO₂ ------> Y