

- b. Consider the following hydrogen halides, HF, HCl, HBr and HI
 (i) Briefly explain why hydrogen fluoride is much less volatile than hydrogen chloride. [1%]

- (ii) What you would see when a test tube filled with hydrogen chloride gas is exposed in moist air. [1%]

3. A galvanic cell under standard conditions is represented below.

Given:

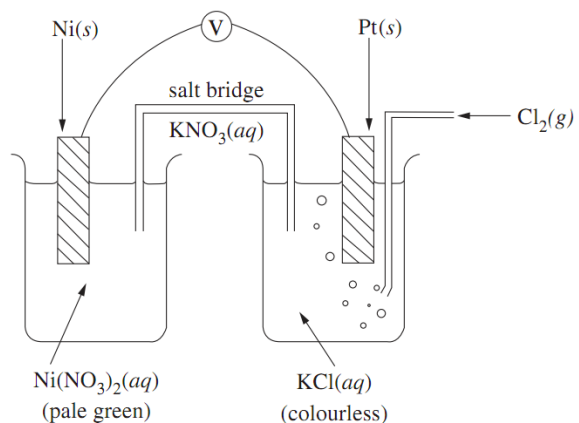
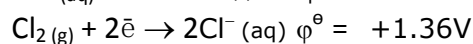
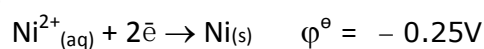
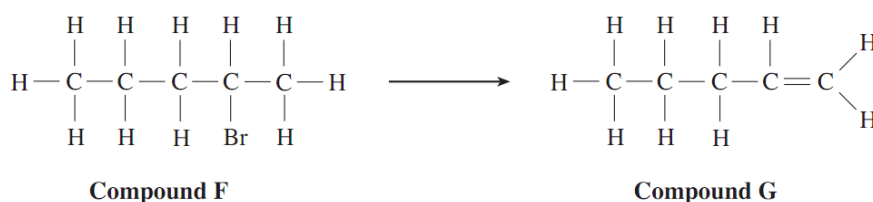


Fig 1

- a. On the diagram, clearly show the direction of electron flow. [1%]
 b. Write a cell diagram for the electrochemical cell shown in Fig. 1. [1%]

- c. Calculate the e.m.f of the cell, $E^{\ominus}_{\text{cell}}$. [2%]

4. Under certain conditions, Compound G can be made from Compound F.



- a. State the reagent and condition required in above conversion. [1%]

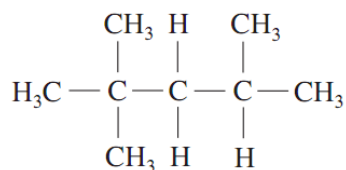
- b. Give the displayed formula of an isomer of Compound G that can also be formed from compound F in this reaction. [1%]

- c. Describe, giving necessary reagents and observations, how you would detect the presence of bromine in Compound F. [2%]

5.

a. Give the IUPAC name of Compound A. [1%]

Ans:



Compound A

b. Write displayed formula of compounds B and C in the space provided. [1% \times 2]

Molecular formula of organic compound	Description of reaction	Displayed formula
B, $\text{C}_3\text{H}_6\text{O}_2$	It is colorless liquid with fruity smell. It is hydrolysed to methanoic acid and ethanol in the presence of dilute acid.	
C, $\text{C}_3\text{H}_8\text{O}$	It is soluble in water and gives positive result with iodine and sodium hydroxide solution.	

c. Suggest what color change might be observed when bromine liquid is treated with but-2-ene. [1%]

6.

a. When copper (II) oxide is heated with ammonia gas. Write the chemical equation of the reaction takes place. [2%]

b. Classify aluminium oxide, Al_2O_3 as basic oxide, amphoteric oxide or acidic oxide. [1%]

c. Potassium superoxide, KO_2 reacts with water to form oxygen gas and potassium hydroxide. Write balanced chemical equation for the reaction takes place. [1%]

