









### Question 6

(a)

- i. Name the process in which water gas is used for the manufacture of hydrogen.
  - ii. Give the balanced chemical equation for the large-scale preparation of hydrogen from water gas.
  - iii. How are carbon dioxide and carbon monoxide removed from hydrogen produced?
- [5]

(b)

- i. What is a redox reaction? Explain with the help of an example.
  - ii. In the equations given below, state whether the substance underlined is oxidised or reduced?
    1.  $\underline{\text{S}} + \text{O}_2 \rightarrow \text{SO}_2$
    2.  $\underline{\text{C}} + \text{H}_2\text{O} \rightarrow \text{CO} + \text{H}_2$
    3.  $\text{H}_2\text{S} + \underline{\text{Cl}_2} \rightarrow 2\text{HCl} + \text{S}$
    4.  $\underline{\text{PbO}} + \text{C} \rightarrow \text{Pb} + \text{CO}$
    5.  $\underline{\text{Fe}_2\text{O}_3} + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$
- [5]

### Question 7

- (a) 20 dm<sup>3</sup> of oxygen is contained in a vessel at a pressure of 200 atmosphere. Another empty vessel of similar capacity is connected to it. Calculate the common pressure of gas in both vessels. [2]
- (b) A gas occupies 200 cm<sup>3</sup> at a temperature of 27°C and 720 mm of Hg. Find its volume at 3°C and 740 mm of Hg. [5]
- (c) Explain the terms:
- i. Solution
  - ii. Solute
  - iii. Solvent
- [3]