

1. Copper reacts with atmospheric air to form \_\_\_\_\_ ①
2.  $1 \text{ mol} = 6.022 \times 10^{23} =$  \_\_\_\_\_ number ①
3.  $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$   
What will be the effect of pressure in this reaction? ①
4. a) Aluminium is produced by mixing alumina with cryolite. What is the function of cryolite here? ①  
b) Aluminium is collected at which electrode? Write the chemical equation of the reaction taking place at this electrode? ②  
c) In this electrolytic cell, the positive charged carbon rod has to be replaced time to time. Why? ①
5. The subshell electronic configurations of some elements are given below.  
A -  $1s^2 2s^2 2p^6 3s^1$   
B -  $1s^2 2s^2 2p^4$   
C -  $1s^2 2s^2 2p^6 3s^2 3p^6$   
D -  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2$   
a) Write the atomic number of the element 'A'? ①  
b) Among these, which one is the inert gas? ①  
c) Among these, which element belongs to first group? ①  
d) Write any two characteristic properties of the element 'D'? ①
6. a) Construct a Galvanic cell using Mg electrode and Cu electrode. Point out anode, cathode and flow of electrons direction. ②  
b) Write the reaction taking place at anode and cathode? ②
7. a) Weather balloons become larger as they ascend to higher altitude. Why? ①  
b) Which gas law can be used to explain this phenomenon. State the law. ②  
c) The volume of air bubble that starts from the bottom of a pond is 2ml and its pressure is 5atm. When it reaches the surface, the pressure is reduced to 1atm. What is its volume? ②