

HEAT OF DISPLACEMENT

1. What is the meaning of heat of displacement?

Heat _____ when _____ of _____ is _____ from its
_____ solution by _____ metal

2. In an experiment, 25 cm^3 of 0.2 mol dm^{-3} of silver nitrate solution was reacted with 0.7 g copper powder. The copper powder used is more than what is required. The reaction produced a rise in temperature of 3.5°C .

[Density of solution : 1.0 g cm^{-3} ; specific capacity aqueous solutions ; $4.2\text{ J g}^{-1}\text{ }^\circ\text{C}^{-1}$]

a) Calculate the increase of temperature

_____ $^\circ\text{C}$

b) What is the amount of heat released in the reaction?

$Q = (\quad) (\quad) (\quad) = \quad \text{J} = \quad \text{kJ}$

c) Calculate the number of mol of silver ion, Ag^+

_____ $\times$ _____ = _____ mol

d) Write the chemical equation of the reaction

_____ + _____ $\rightarrow$ _____ + _____ (_____)

e) Construct an ionic equation for the reaction

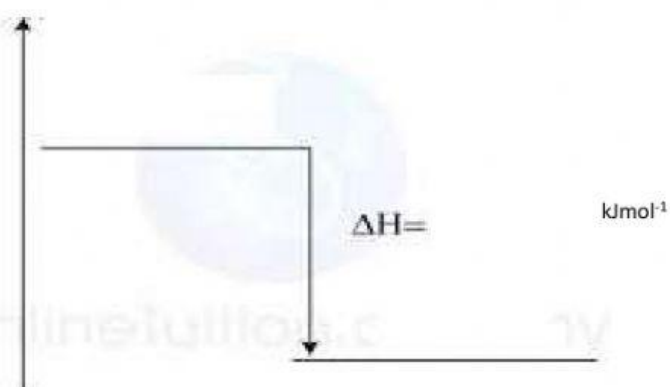
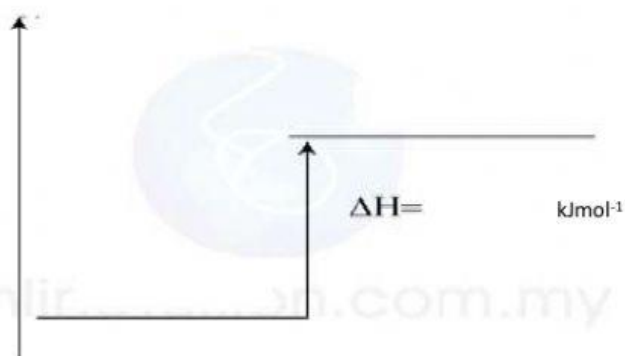
_____ + _____ $\rightarrow$ _____ + _____

f) Calculate the heat of displacement for this experiment

$\Delta H = \text{_____} = \quad \text{kJ mol}^{-1}$

g) Tick at the right energy level diagram. Complete the energy level diagram.

(write 0 for the blank box that not chosen)



- i) State one of the observation for this experiment instead of the increasing of the temperature

solution change to

solution