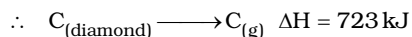
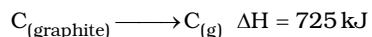
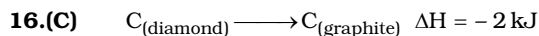
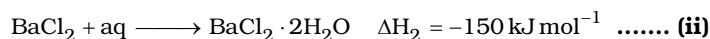


**Daily Tutorial Sheet-2**

**Level-1**

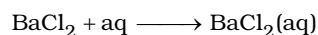


**17.(C)** By definition



Adding equation (i) and (ii)

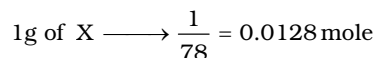
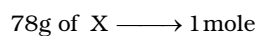
$$\Delta H_3 = \Delta H_1 + \Delta H_2$$



Heat of solution of  $\text{BaCl}_2 = 200 + (-500) = 50 \text{ kJ}$

**19.(C)**  $\text{O}_2$  is present in its standard state.

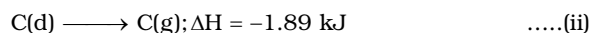
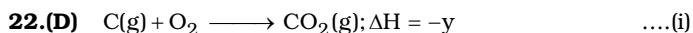
**20.(B)**  $\Delta H = \frac{\text{Heat released}}{\text{mole}}$



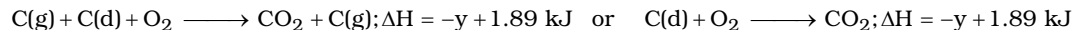
$$\Delta H_{\text{fusion}} = \frac{160}{1000 \times 0.0128} = 12.48 \text{ kJ / mol}$$

**21.(C)** Fact

Bond dissociation energy in polyatomic molecule is average of all bond energies. But in diatomic molecule dissociation energy is equal to bond energy.



Adding equations (i) and (ii), we get :



Hence, the combustion of graphite is less than diamond by 0.945 kJ.

**23.(D)** Graphite is a standard state of carbon and  $\text{CH}_3\text{OH}$  in liquid state is also standard state.



$$121.34 + 106.96 - (\text{I} - \text{Cl}) = 17.57$$

$$121.34 + 106.96 - 17.57 = (\text{I} - \text{Cl})$$

Bond dissociation  $(\text{I} - \text{Cl}) \text{ bond} = 210.73 \text{ J / mol}$

**25.(B)** By definition

**26.(A)** In formation of  $\text{H}_2\text{O}(\text{g})$ , some energy is required to convert  $\text{H}_2\text{O}(\text{l})$  into  $\text{H}_2\text{O}(\text{g})$ , so less energy is released in the formation of  $\text{H}_2\text{O}(\text{g})$ .

$$\therefore \Delta H_2 > \Delta H_1$$

- 27.(C)**  $10 \text{ m mole } \text{NH}_4\text{OH} + 10 \text{ m mole } \text{HCl} \Rightarrow x \text{ kJ}$  heat is released  
 $\therefore$  For 1 mole  $\Rightarrow 100 x \text{ kJ}$  heat is released  
 $\therefore \Delta H = -100x \text{ kJ/mol}$   
 For 1 mole  $\text{NaOH} + 1 \text{ mole } \text{HCl}$ ,  $\Delta H = y \text{ kJ/mol}$   $\therefore$  Heat of dissociation of  $\text{NH}_4\text{OH} = -100x - y$
- 28.(C)** The heat of neutralisation of strong acid and strong base is constant because it is infact heat of formation of water by  $\text{H}^+$  and  $\text{OH}^-$ . Its value is almost equal to  $-57.3 \text{ kJ}$ .
- 29.(A)**  $\text{HCl}$  is more stable than  $\text{HF}$ .
- 30.(C)** Standard heat of formation of substance is the amount of heat evolved or absorbed when one mole of substance is formed from its elements in their standard states.  
 $\therefore$  Graphite is the standard state of carbon and hydrogen is found in form of  $\text{H}_2$ .  
 $\therefore$  Standard heat of formation of methane is  $\text{C}(\text{graphite}) + 2\text{H}_2(\text{g}) \longrightarrow \text{CH}_4(\text{g})$