YAKEEN NEET 2.0

2026

Thermodynamics & Thermochemistry

Physical Chemistry | Lecture -8

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Topics to be covered

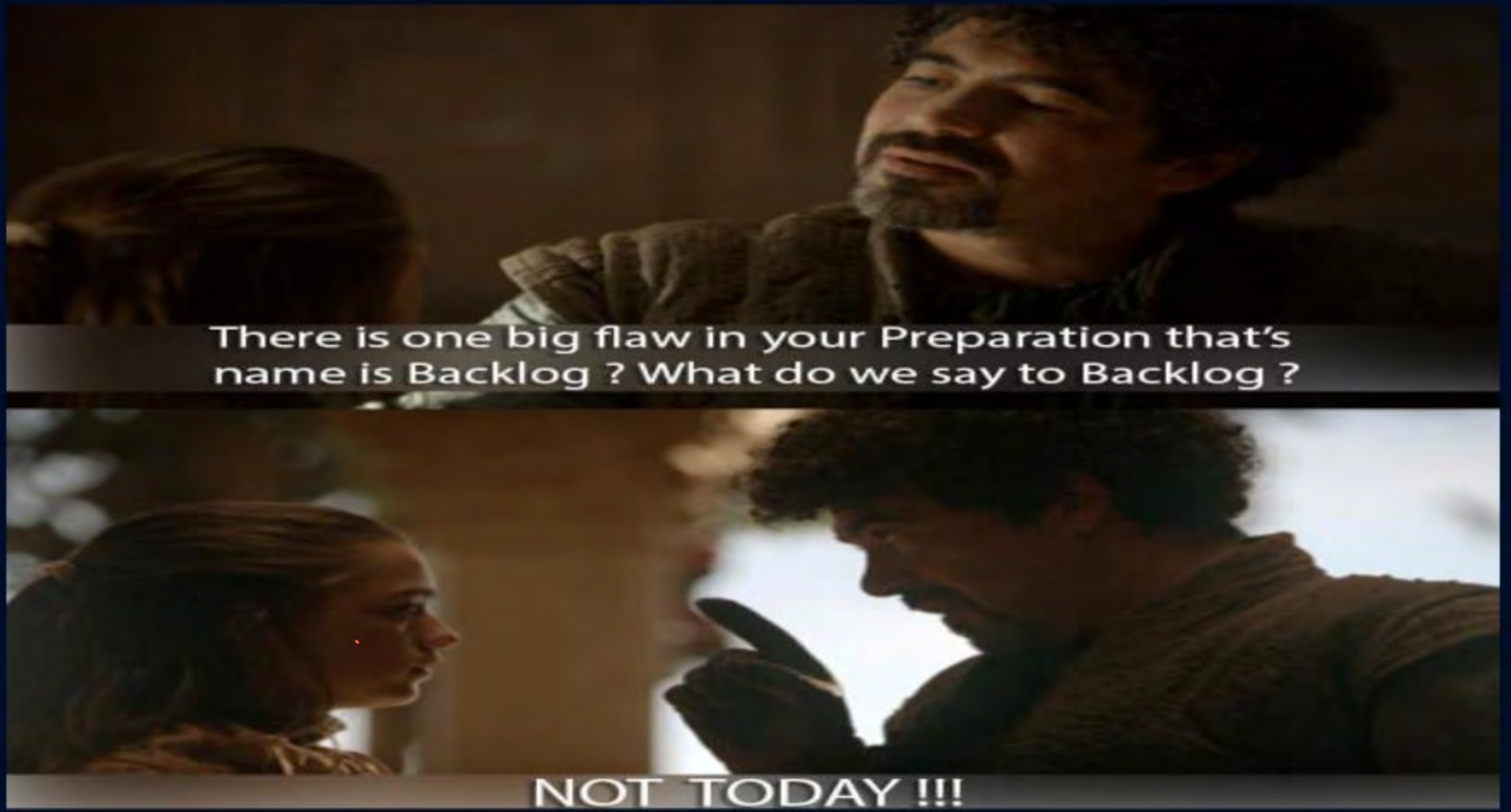
1. Medics Test, Revision of Last Class
2. Different Types of Enthalpies Part-02
3. Magarmach Practice Questions, Home work from Modules,

Rules to Attend Class

1. Always sit in a peaceful environment with headphone and be ready with your copy and pen.
2. Never ever attend a class from in between or don't join a live class in the middle of the chapter.
3. Make sure to revise the last class before attending the next class & always complete your Magarmach Practice Questions.
4. Never ever engage in chat whether live or recorded on the topic which is not being discussed in current class as by doing so u can be blocked by the admin team or your subscription can be cancelled.

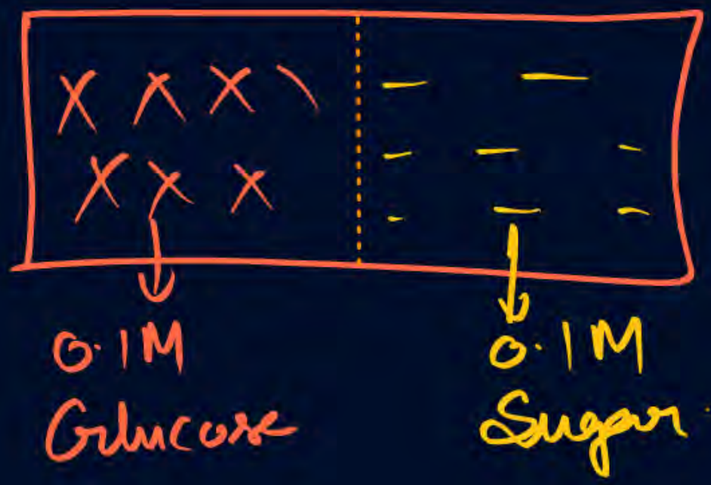
Rules to Attend Class

5. Try to make maximum notes during the class if something is left then u can use the notes pdf after the class to complete the remaining class.
6. Always ask your doubts in doubt section to get answer from faculty. Before asking any doubt please check whether same doubt has been asked by someone or not.


There is one big flaw in your Preparation that's name is Backlog ? What do we say to Backlog ?
NOT TODAY !!!

MEDICS Test

Q1



Statement Correct ?

(a) water flow from Glucose to Sugar

(b) Sugar to Glucose

(c) Glucose flow to sucrose soln.

(d) No net movement across SPM

Q2 Phenol dimerises in benzene.
If observed molar mass of phenol in soln is 120 then degree of dimerisation.

(a) 0.6
(b) 0.43
(c) 0.27
(d) 0.86

$n = 2$

Obs. $M_B = 120$

$i = \frac{\text{Normal } M_B}{\text{Obs. } M_B} = \frac{94}{120}$

$\frac{\alpha}{2} = 1 - \frac{3}{4}$

$\frac{\alpha}{2} = \frac{1}{4}$

$\alpha = \frac{1}{2}$

$\alpha = ?$

$i = 1 - \alpha + \frac{\alpha}{n}$

$i = 1 - \alpha + n\alpha$

C_6H_5OH

$72 + 6 + 16 = 94$

$\frac{90}{120} \approx \frac{3}{4} = 1 - \alpha + \frac{\alpha}{2}$

$\frac{3}{4} = 1 - \frac{\alpha}{2}$

$0.22 = \frac{\alpha}{2}$

Q3 $P_S = 95\%$ of P°

$M_A = 0.3 M_B$

$\frac{W_A}{W_B} = ?$

$P^\circ = 100$

$P_S = 95$

$\frac{P^\circ - P_S}{P_S} = \frac{W_B \times M_A}{M_B \times W_A}$

$\frac{5}{95} = \frac{W_B \times 0.3 M_B}{W_A \times M_B}$

$\frac{W_A}{W_B} = \frac{95 \times 0.3}{5} = \frac{57}{10}$

(a) 3:20

(b) 57:10

(c) 1:5

(d) 4:1

Q.4 A solution of x moles of Sugar ($C_{12}H_{22}O_{11}$) in 100g of water freezes at $-0.2^\circ C$.

As ice separates out, freezing pt. down to $-0.25^\circ C$.

How many grams of ice has separated?

$K_f = 1.86$

(a) 18g

(b) 20g

(c) 80g

(d) 25g

$n_B = x$

$w_A = 100g$

$T_f = -0.2^\circ C$

$T_f' = -0.25^\circ C$

$\Delta T_f = T_f^\circ - T_f' = \dfrac{K_f \times n_B \times 1000}{w_A'}$

$0.25 = \dfrac{1.86 \times x \times 1000}{w_A'}$

$0.2 = \dfrac{1.86 \times x \times 1000}{w_A}$

Q5 64g Sulphur dissolved in 200g of CS_2 raises B.Pt. of solvent by 0.32°C. $T^\circ = 47^\circ C$. $\Delta_{vap} = 80\ cal/g$. Molecular formula of Sulphur

(a) S_8
(b) S_4
(c) S_2
(d) S

$W_B = 64g$

$W_A = 200g$

$\Delta T_b = 0.32\ K = \dfrac{K_b \times W_B \times 1000}{M_B \times W_A}$

$S_x \qquad x = \dfrac{M_B}{G.A.M.\ of\ S}$

$K_b = \dfrac{R\,T^{\circ 2}}{1000\,\Delta_{vap}}$

$= \dfrac{25 \times 320}{3 \times 1000 \times 80 \times 4.2}$

$$\frac{5}{4} = \frac{100}{w_A'}$$

$$w_A' = \frac{400}{5} = 80g$$

ice separates out $= 100 - 80 = 20g$

Next medics test.

↓

Thursday → Thermodynamics → Lec-1 to Lec-4

↓

easy.

Revision of Last Class

QUESTION – (AIIMS 2018, 27 May)

$C_3H_6 + H_2 \rightarrow C_3H_8$ $\quad \Delta H_1 = -124$ kJ ①

$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$ $\quad \Delta H_2 = -2027$ kJ ②

$H_2 + 1/2\ O_2 \rightarrow H_2O$ $\quad \Delta H_3 = -286$ kJ ③

Calculate enthalpy of combustion of propene?

286
124
+162

2027
162
1865

$C_3H_6 + \frac{9}{2}O_2 \rightarrow 3CO_2 + 3H_2O$ (4.5)

(A) –1020 kJ

(B) –2085 kJ

(C) –2020 kJ

(D) None ✓

eq.① + eq.② − eq.③

$C_3H_6 + H_2 + C_3H_8 + 5O_2 \rightarrow C_3H_8 + 3CO_2 + 3H_2O$ (4.5)

$+H_2O$

$H_2 + \frac{1}{2}O_2$

$\Delta H = -124 - 2027 - (-286)$

$= -1865$ KJ

Enthalpy of Hydrogenation

1 mole unsaturated Hydrocarbon + H_2 → 1 mole saturated Hydrocarbon

unsaturated Hydrocarbon → C_nH_{2n} , C_nH_{2n-2}

saturated Hydrocarbon → C_nH_{2n+2}

$C_3H_6 + H_2 \rightarrow C_3H_8$

$C_3H_4 + 2H_2 \rightarrow C_3H_8$

Enthalpy of Hydration

1 mole anhydrous Cmpd. (s) + $H_2O(l)$ ⟶ 1 mole hydrated Cmpd. (s)

no balancing req.

$\Delta H = \Delta H_{Hydration}$

$CuSO_4(s) + 5H_2O(l) \longrightarrow CuSO_4 \cdot 5H_2O(s)$

white → Blue

$Na_2SO_4(s) + 10H_2O(l) \longrightarrow Na_2SO_4 \cdot 10H_2O(s)$

Enthalpy of Solution

1 mole Compd. $_{(s)}$ + $H_2O_{(l)}$ $\longrightarrow$ 1 mole Cmpd (aq.) $\Delta H = \Delta H_{sol^n}$

$NaCl_{(s)} + H_2O_{(l)} \longrightarrow NaCl_{(aq.)}$

Enthalpy of Ionisation

1 mole Cmpd + H_2O $\longrightarrow$ Ions in aq. soln.

$NaCl(s) + H_2O \longrightarrow Na^+(aq.) + Cl^-(aq.)$ $\Delta H = \Delta H_{soln}$

Enthalpy of Allotropic Transformation

1 mole Allotrope ⟶ 1 mole allotrope. $\Delta H = \Delta H_{A.T.}$

P_4(white) ⟶ P_4(Red) $\Delta H = \Delta H_{A.T.}$

C(Diamond) ⟶ C(graphite) $\Delta H = \Delta H_{A.T.}$

QUESTION – (AIIMS 1998)

The heat of combustion of yellow phosphorous is –9.91 kJ and of red phosphorous is –8.78 kJ. The heat of transition of yellow phosphorus to red phosphorus is:

(A) –9.91 kJ

(B) –8.78 kJ

(C) –9.34 kJ

(D) –1.13 kJ

Ans (D)

(1) P_4(yellow) + $5O_2$ → P_4O_{10} $\quad \Delta H_{comb.} = -9.91\ KJ$

(2) P_4(Red) + $5O_2$ → P_4O_{10} $\quad \Delta H_{comb.} = -8.78\ KJ$

P_4(Yellow) → P_4(Red)

eq.(1) − eq.(2) (+ reverse eq.(2))

$\Delta H = -9.91 - (-8.78) = -9.91 + 8.78$

$= -1.13\ KJ$

Enthalpy of Phase Transformation

- **Enthalpy of Fusion: (ΔH_{fusion})**

① 1 mole solid → 1 mole liquid $\Delta H = \Delta H_{fusion}$.

$1 H_2O(s) \rightarrow 1 H_2O(l)$ $\Delta H = \Delta H_{fusion}$

Enthalpy of Vaporisation = ($\Delta H_{vap.}$)

1 mole liquid ⟶ 1 mole Vapour $\Delta H = \Delta H_{vap}$

$1 H_2O(l) \rightarrow 1 H_2O(g)$ $\Delta H = \Delta H_{vap}$.

Enthalpy of sublimation

Sublimable solids :-

$I_2(s)$, Camphor, $CO_2(s)$ (Dry ice)

Naphthalene, $NH_4Cl(s)$

1 mole solid → 1 mole gas

$\Delta H = \Delta H_{sublimation}$

$1 I_2(s) \rightarrow 1 I_2(g)$ $\Delta H = \Delta H_{sub.}$

$\Delta H_{sub.} = \Delta H_{fusion} + \Delta H_{vap}$

$s \rightarrow l$ ✓

$l \rightarrow g$ ✓

$s + l \rightarrow l + g$

QUESTION – (AIIMS 2007)

ΔH_{fusion} of a substance is 'x' and ΔH_{vap} is y' then $\Delta H_{sublimation}$ will be

(A) x + y

$\Delta H_{sub.} = x + y$

(B) x – y

(C) x/y

(D) y/x

Bond Energy

$N \neq N$

$H-H$ of $\neq 0$

#MIT

① 1 mole diatomic gaseous molecule ⟶ Isolated gaseous atoms $\Delta H = B.E.$

② B.E. formula applies when both reactant & product in gaseous form.

$$xA(g) \rightarrow yB(g)$$

$$\Delta H = \sum x \, B.E_{(Reactants)} - \sum y \, B.E_{(Products)}$$

$1H_2(g) \rightarrow 2H \quad \Delta H = B.E._{H_2(g)}$

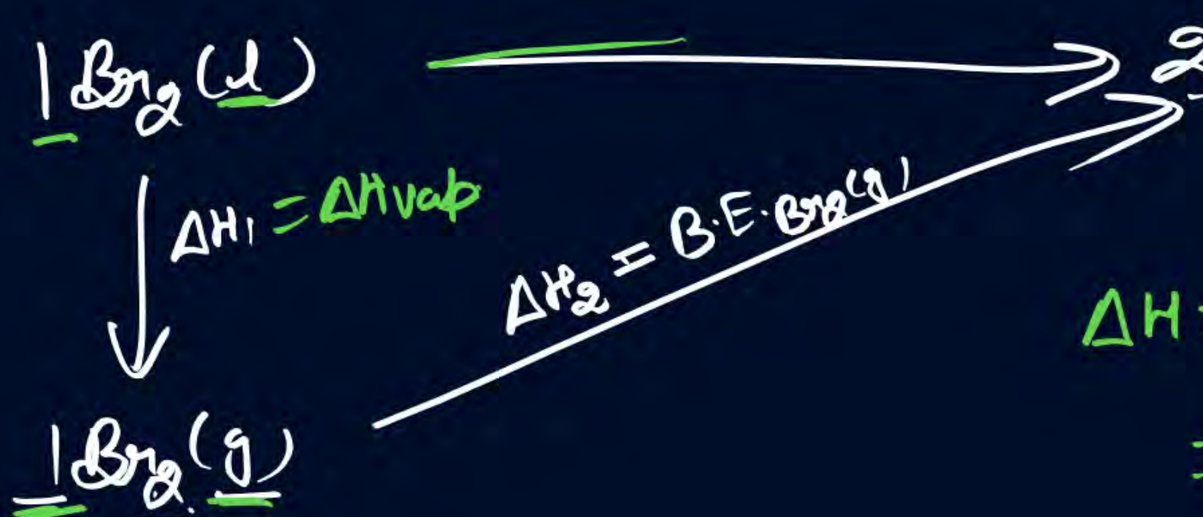
$1Cl_2(g) \rightarrow 2Cl \quad \Delta H = B.E._{Cl_2(g)}$

$1O_2(g) \rightarrow 2O \quad \Delta H = B.E._{O_2(g)}$

$1N_2(g) \rightarrow 2N \quad \Delta H = B.E_{N_2(g)}$

$1Br_2(l) \longrightarrow 2Br(g)$

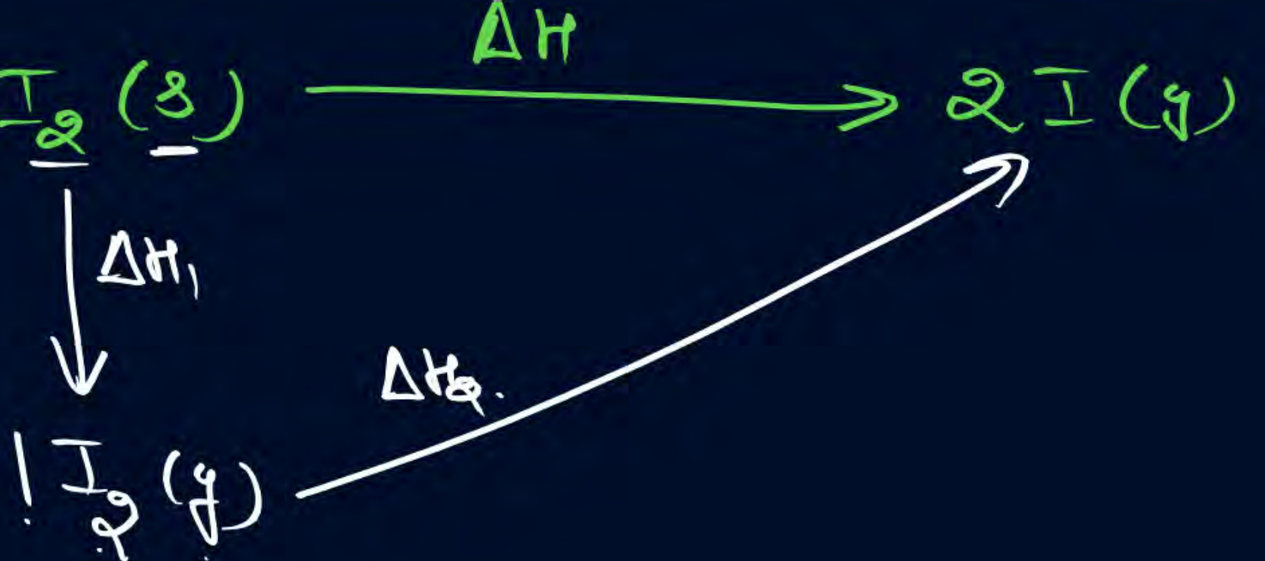
Q



$\Delta H = \Delta H_1 + \Delta H_2$

$= \Delta H_{vap} + B.E_{Br_2(g)}$

Q



$\Delta H = \Delta H_1 + \Delta H_2$

$= \Delta H_{sub.\ of\ I_2} + B.E._{I_2(g)}$

QUESTION – (NEET 2020 Covid)

At standard conditions, if the change in the enthalpy for the following reaction is $-109\ kJ\ mol^{-1}$.

$$H_2(g) + Br_2(g) \rightarrow 2HBr(g)$$

Given that bond energy of H_2 and Br_2 is 435 kJ mol^{-1} and 192 kJ mol^{-1}, respectively, what is the bond energy (in kJ mol^{-1}) of HBr?

(A) 736

(B) 518

(C) 259

(D) 368 ✓

$\Delta H = -109 = (1 \times 435 + 1 \times 192) - (2 \times B.E._{HBr})$

$-109 = 627 - 2 \times B.E._{HBr}$

$2 B.E_{HBr} = 627 + 109 = 736$

$B.E_{HBr} = \frac{736}{2} = 368\ KJ$

QUESTION – (NEET 2018)

The bond dissociation energies of X_2, Y_2 and XY are in the ratio of 1 : 0.5 : 1. ΔH for the formation of XY is –200 kJ mol^{-1}. The bond dissociation energy of X_2 will be:

(A) 200 kJ mol^{-1}

(B) 100 kJ mol^{-1}

(C) 400 kJ mol^{-1}

(D) 800 kJ mol^{-1}

$$\frac{1}{2}X_2(g) + \frac{1}{2}Y_2(g) \longrightarrow 1XY(g)$$

$x \quad \frac{x}{2} \quad x$

$$\Delta H = -200 = \left[\frac{1}{2}\times x + \frac{1}{2}\times\frac{x}{2}\right] - [1\times x]$$

$$= \frac{x}{2} + \frac{x}{4} - x = \frac{2x + x - 4x}{4} = -\frac{x}{4}$$

$$+\frac{x}{4} = +200$$

$$x = 800$$

Enthalpy of Atomisation

MIT

① 1 mole. Solid or liquid or gas → Isolated gaseous atoms $\Delta H = \Delta H_{atmstn.}$

$1Br_2(l) \rightarrow 2Br(g)$ $\Delta H = \Delta H_{atmstn.}$

$1I_2(s) \rightarrow 2I(g)$ $\Delta H = \Delta H_{atmstn.}$

$1CH_4(g) \rightarrow 1C(g) + 4H(g)$

$\Delta H = \Delta H_{atmstn.}$ of $CH_4(g)$

$1\,C_3H_8(g) \longrightarrow 3C(g) + 8H(g)$ $\Delta H = \Delta H_{atmstn\ of\ C_3H_8(g)}$

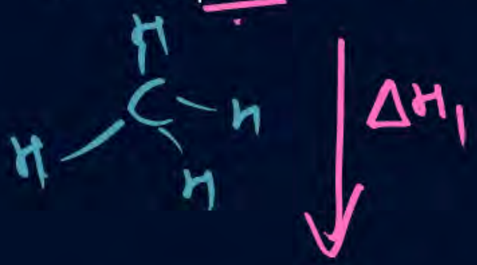
ΔH_{vap}

$H_2O(l) \rightarrow H_2O(g)$

$\Delta H_{cond} = -\Delta H_{vap}$

$O=O$

$1CH_4(g) + 2O_2(g) \longrightarrow 1CO_2(g) + 2H_2O(l)$ $\Delta H = ?$

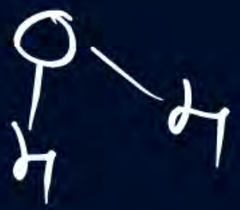


ΔH_1

ΔH_2

$1CO_2(g) + 2H_2O(g)$

$O=C=O$



$\Delta H = \Delta H_1 + \Delta H_2$

$\Delta H = [4 \times B.E_{C-H} + 2 \times B.E_{O=O}] - [2 \times B.E_{C=O} + 4 \times B.E_{O-H}]$

$+ 2 \times \Delta H_{cond}$

$1C_3H_8(g) + 5O_2(g) \longrightarrow 3CO_2(g) + 4H_2O(\underline{l})$ $\Delta H = ?$

ΔH_1

$O=O$

$\Delta H_2 \xrightarrow{H\times\Delta H_{cond.}} 3CO_2(g) + 4H_2O(g)$

$\Delta H = \Delta H_1 + \Delta H_2$

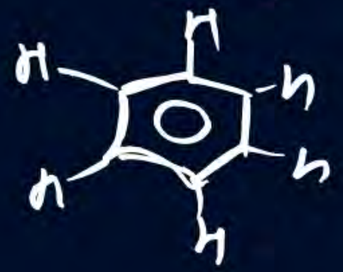
$= \left[2 \times B.E_{C-C} + 8 \times B.E_{C-H} + 5 \times B.E_{O_2}\right] - \left[6 \times B.E_{C=O} + 8\, B.E_{O-H}\right]$

$+ \; 4 \times \Delta H_{condensation}$

Q $C_6H_6(l) + \frac{15}{2}O_2(g) \xrightarrow{\Delta H} 6CO_2(g) + 3H_2O(l)$

ΔH_1 ↓

$C_6H_6(g) + \frac{15}{2}O_2(g)$



ΔH_2 ↓

$6CO_2(g) + 3H_2O(g)$ — ΔH_3 → $3H_2O(l)$

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

$\Delta H_1 = \Delta H_{vap}\ C_6H_6(l)$

$\Delta H_2 = [6 \times B.E_{C-C} + 6 \times B.E_{C-H} + \frac{15}{2} \times B.E_{O_2}$

$- [12 \times B.E_{C=O} + 6 \times B.E_{O-H}]$

$\Delta H_3 = 3 \times \Delta H_{cond.}\ of\ H_2O(g)$

QUESTION

The enthalpy of atomization of $PH_3(g)$ is +954 kJ/mol and that of P_2H_4 is +1.488 MJ/mol. The bond energy of the P–P bond is

A 318 kJ/mol

B 372 kJ/mol

C 216 kJ/mol

D 534 kJ/mol

QUESTION – (AIIMS 2015)

The enthalpy changes for the following processes are listed below:

$Cl_2(g) \rightarrow 2Cl(g)$, 242.3 kJ mol^{-1} **$I_2(g) \rightarrow 2I(g)$, 151.0 kJ mol^{-1}**

$ICl(g) \rightarrow I(g) + Cl(g)$, 211.3 kJ mol^{-1} **$I_2(s) \rightarrow I_2(g)$, 62.76 kJ mol^{-1}**

Given that the standard states for iodine and chlorine are $I_2(s)$ and $Cl_2(g)$, the standard enthalpy of formation for $ICl(g)$ is:

A. +16.8 kJ mol^{-1}

B. +244.8 kJ mol^{-1}

C. –14.6 kJ mol^{-1}

D. –16.8 kJ mol^{-1}

QUESTION – (AIIMS 2012)

AB, A_2 and B_2 are diatomic molecules. If the bond enthalpies of A_2, AB and B_2 are in the ratio 1 : 1 : 0.5 and enthalpy of formation of AB from A_2 and B_2 is – 100 kJ mol^{-1}. What is the bond energy of A_2 ?

(A) 200 kJ mol^{-1}

(B) 100 kJ mol^{-1}

(C) 300 kJ mol^{-1}

(D) 400 kJ mol^{-1}

QUESTION

The heats of combustion of carbon and carbon monoxide are –393.5 and –283.5 kJ mol^{-1}, respectively. The heat of formation (in kJ) of carbon monoxide per mole is

A 676.5

B – 676.5

C – 110.5

D 110.5

QUESTION

The combustion of benzene (l) gives $CO_2(g)$ and $H_2O(l)$. Given that heat of combustion of benzene at constant volume is -3263.9 kJ mol^{-1} at 25°C; heat of combustion (in kJ mol^{-1}) of benzene at constant pressure will be (R = 8.314 JK^{-1} mol^{-1})

A 4152.6

B –452.46

C 3260

D –3267.6

QUESTION

The heat evolved in the combustion of glucose $C_6H_{12}O_6$ is –680 kcal/mol. The mass of CO_2 produced, when 170 kcal of heat is evolved in the combustion of glucose is

A 45 g

B 66 g

C 11 g

D 44 g

Home work from modules

Prarambh → Q46 to Q53

Prabal → Q13, 25

Magarmach Practice Questions (MPQ)

QUESTION

$\Delta H^\circ_{comb.}$ C(graphite) = –x kJ/mol

$\Delta H^\circ_{comb.}$ $H_2(g)$ = –y kJ/mol

$\Delta H^\circ_{comb.}$ $CH_4(g)$ = –z kJ/mol

Find $\Delta H^\circ_{formation}$ of CH_4?

QUESTION – (AIIMS 2014)

What is the enthalpy change for, $2H_2O_2(l) \rightarrow 2H_2O(l) + O_2(g)$ if heat of formation of H_2O_2 (l) and H_2O (l) are –188 and –286 kJ/mol respectively?

A. –196 kJ/mol

B. +948 kJ/mol

C. +196 kJ/mol

D. –948 kJ/mol

QUESTION – (AIIMS 2011)

Enthalpy of combustion of CH_4, C_2H_6 and C_3H_8 are –210.8, –368.4 and –526.2 kcal mol^{-1} respectively. Enthalpy of combustion of hexane can be predicted as

A. –840 kcal mol^{-1}

B. –684 kcal mol^{-1}

C. – 1000 kcal mol^{-1}

D. None of these

QUESTION – (AIIMS 2010)

Enthalpy of formation of HF and HCl are –161 kJ and –92 kJ respectively. Which of the following statements is incorrect?

A HCl is more stable than HF.

B HF and HCl are exothermic compounds.

C The affinity of fluorine to hydrogen is greater than the affinity of chlorine to hydrogen.

D HF is more stable than HCl.

QUESTION

When one mole of monoatomic ideal gas at TK undergoes adiabatic change under a constant external pressure of 1 atm changes volume from 1 litre to 2 litre. The final temperature in kelvin would be:

A $\frac{T}{2^{2/3}}$

B $T+\frac{2}{3\times0.0821}$

C T

D $T-\frac{2}{3\times0.0821}$

QUESTION – (AIIMS 2008)

What will be the heat of formation of methane, if the heat of combustion of carbon is '–x' kJ heat of formation of water is '–y' kJ and heat of combustion of methane is 'z' kJ?

(A) $(-x-y+z)$ kJ

(B) $(-z-x+2y)$ kJ

(C) $(-x-2y-z)$ kJ

(D) $(-x-2y+z)$ kJ

QUESTION

Which of the following reactions defines ΔH°_f?

A $C_{(diamond)} + O_2(g) \rightarrow CO_2(g)$

B $\frac{1}{2}H_2(g) + \frac{1}{2}F_2(g) \rightarrow HF(g)$

C $N_2(s) + 3H_2(g) \rightarrow 2NH_3(g)$

D $CO(g) + \frac{1}{2}O_2(g) \rightarrow CO_2(g)$

QUESTION – (NCERT Exemplar)

During complete combustion of one mole of butane, 2658 kJ of heat is released. The thermochemical reaction for above change is:

A $2C_4H_{10}(g) + 13O_2(g) \rightarrow 8CO_2(g) + 10H_2O(l)$ $\Delta_cH = -2658.0\ kJ\ mol^{-1}$

B $C_4H_{10}(g) + 13/2O_2(g) \rightarrow 4CO_2(g) + 5H_2O(g)$ $\Delta_cH = -1329.0\ kJ\ mol^{-1}$

C $C_4H_{10}(g) + 13/2O_2(g) \rightarrow 4CO_2(g) + 5H_2O(l)$ $\Delta_cH = -2658.0\ kJ\ mol^{-1}$

D $C_4H_{10}(g) + 13/2O_2(g) \rightarrow 4CO_2(g) + 5H_2O(l)$ $\Delta_cH = +2658.0\ kJ\ mol^{-1}$

QUESTION – (AIIMS 2004)

How much energy is released when 6 moles of octane is burnt in air? Given ΔH°_f for $CO_2(g)$, H_2O (g) and C_8H_{18} (l) respectively are -490, -240 and +160 J/mol.

(A) – 6.2 kJ

(B) – 37.4kJ

(C) 35.5 kJ

(D) – 20.0 kJ

QUESTION – (NCERT Exemplar)

The pressure-volume work for an ideal gas can be calculated by using the Expression $w = -\int_{V_i}^{V_f} p_{ex} dV$. The work can also be calculated from the pV plot by using the area under the curve within the specified limits. When an ideal gas is compressed (a) reversibly or (b) irreversibly from volume V_i to V_f, choose the correct option.

A w (reversible) = w (irreversible)

B w (reversible) < w (irreversible)

C w (reversible) > w (irreversible)

D w (reversible) = w (irreversible) + $p_{ex}\Delta V$

QUESTION – (NCERT Exemplar)

On the basis of thermochemical equations (a), (b) and (c), find out which of the algebraic relationships given in options (A) to (D) is correct.

(a) $C_{(graphite)} + O_2(g) \rightarrow CO_2(g)$; $\Delta_r H = x\ kJ\ mol^{-1}$

(b) $C_{(graphite)} + \frac{1}{2} O_2(g) \rightarrow CO(g)$; $\Delta_r H = y\ kJ mol^{-1}$

(c) $CO(g) + \frac{1}{2} O_2(g) \rightarrow CO_2(g)$; $\Delta_r H = z\ kJ\ mol^{-1}$

A $z = x + y$

B $x = y - z$

C $x = y + z$

D $y = 2z - x$

QUESTION* – (NCERT Exemplar)

For an ideal gas, the work of reversible expansion under isothermal condition can be calculated by using the expression $w = -nRT\ln\frac{V_f}{V_i}$. A sample containing 1.0 mole of an ideal gas is expanded isothermally and reversibly to ten times of its original volume, in two separate experiments. The expansion is carried out at 300 K and at 600 K respectively. Choose the correct option.

A Work done at 600 K is 20 times the work done at 300 K.

B Work done at 300 K is twice the work done at 600 K.

C Work done at 600 K is twice the work done at 300 K.

D $\Delta U = 0$ in both cases.

QUESTION – (NEET 2015)

The heat of combustion of carbon to CO_2 is –393.5 kJ/mol. The heat released upon formation of 35.2 g of CO_2 from carbon and oxygen gas is:

A. +315 kJ

B. –630 kJ

C. –3.15 kJ

D. –315 kJ

QUESTION – (AIPMT 2012)

Standard enthalpy of vaporization $\Delta_{vap}H°$ for water at 100°C is 40.66 kJ mol^{-1}. The internal energy of vaporization of water at 100°C (in kJ mol^{-1}) is:
(Assume water vapour to behave like an ideal gas)

(A) + 37.56

(B) – 43.76

(C) + 43.76

(D) + 40.66

QUESTION – (AIPMT 2011)

Consider the following processes:

	ΔH(kJ/mol)
$1/2\ A \rightarrow B$	+150
$3B \rightarrow 2C + D$	–125
$E + A \rightarrow 2D$	+350

For $B + D \rightarrow E + 2C$, ΔH will be:

A. 525 kJ/mol

B. –175 kJ/mol

C. –325 kJ/mol

D. 325 kJ/mol

QUESTION – (AIPMT 2010)

The following two reactions are known:

$Fe_2O_3(s) + 3CO(g) \rightarrow 2Fe(s) + 3CO_2(g)$; $\Delta H = -26.8$ kJ

$FeO(s) + CO(g) \rightarrow Fe(s) + CO_2(g)$; $\Delta H = -16.5$ kJ

The value of ΔH for the following reaction

$Fe_2O_3(s) + CO(g) \rightarrow 2FeO(s) + CO_2(g)$ **is:**

A) + 6.2 kJ

B) + 10.3 kJ

C) – 43.3 kJ

D) – 10.3 kJ

THANK YOU