

## Master Math for JEE Main & JEE Advanced

Crash Courses designed specifically for students who want to improve their percentile & score in upcoming JEE Main & JEE Advanced exam. **Tap on the banners to know more.**

For JEE Main 2020 April



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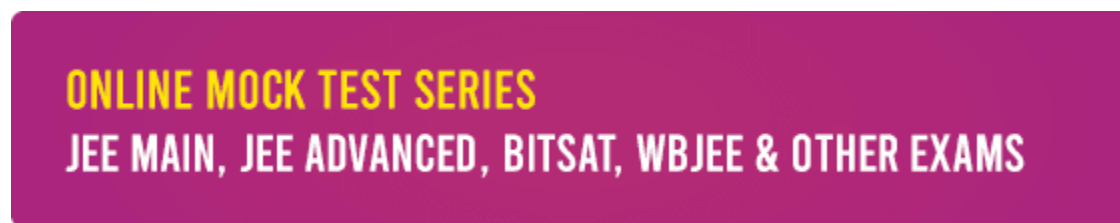
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## JEE Mains 2020 Jan Chapter wise Question Bank

## Chemical Equilibrium

Q1

Calculate  $\Delta_f H^\circ$  (In kJ/mol) for  $C_2H_6(g)$ , if  $\Delta_c H^\circ [C_{(graphite)}] = -393.5$  kJ/mol,

$\Delta_c H^\circ [H_2(g)] = -286$  kJ/mol and

$\Delta_c H^\circ [C_2H_6(g)] = -1560$  kJ/mol

$C_2H_6(g)$  के लिये  $\Delta_f H^\circ$  (kJ/mol में) परिकल्पित कीजिये, यदि  $\Delta_c H^\circ [C_{(ग्रेफाइट)}] = -393.5$  kJ/mol,

$\Delta_c H^\circ [H_2(g)] = -286$  kJ/mol तथा

$\Delta_c H^\circ [C_2H_6(g)] = -1560$  kJ/mol

7<sup>th</sup> Jan Evening

Sol

(-85.00)



$$2 \times (-393.5) + 3 \times (-286) - (-1560) = -85 \text{ kJ/mol}$$

Q2

**Assertion:** pH of water increases on increasing temperature.

**Reason:**  $H_2O \rightarrow H^+ + OH^-$  is an exothermic process.

- (1) Both assertion and reason are correct and reason is correct explanation of assertion.
- (2) Both assertion and reason are correct and reason is not correct explanation of assertion.
- (3) Assertion is true & reason is false.
- (4) Both assertion and reason are incorrect.

8<sup>th</sup> Jan Evening

Sol

(4)

Theory Based :

Q3

For  $\text{Br}_2(\ell)$

Enthalpy of atomisation =  $x$  kJ/mol

Bond dissociation enthalpy of bromine =  $y$  kJ/mole

then

(1)  $x > y$

(2)  $x < y$

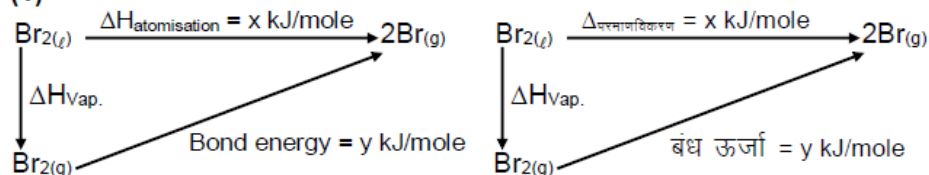
(3)  $x = y$

(4) Relation does not exist

9<sup>th</sup> Jan Morning

Sol

(1)



$$\Delta H_{\text{atomisation}} = \Delta H_{\text{vap}} + \text{Bond energy}$$

Hence  $x > y$

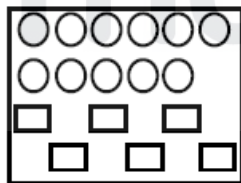
$$\Delta H_{\text{परमाणुतिकरण}} = \Delta H_{\text{vap}} + \text{बंध ऊर्जा}$$

इस प्रकार  $x > y$

Q4

Reactant A represented by square is in equilibrium with product B represented by circles. Then value of equilibrium constant is

वर्ग द्वारा प्रदर्शित अभिकारक A वृत्तों द्वारा प्रदर्शित उत्पाद B के साथ साम्य में है। तब साम्य नियतांक का मान है।



(1) 1

(2) 2

(3) 3

(4) 4

9<sup>th</sup> Jan Evening

Sol

(2)

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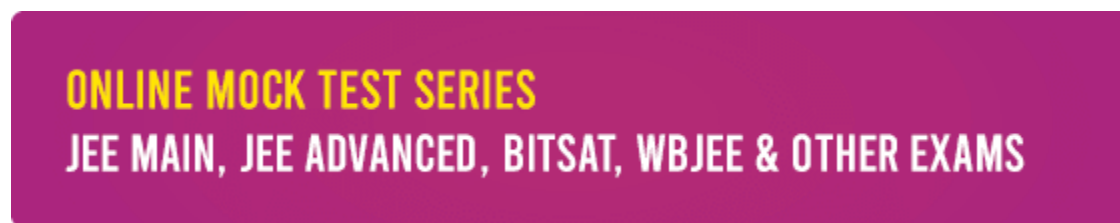
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