

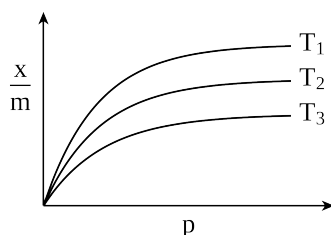
NEET SURFACE CHEMISTRY — ADSORPTION — PYQS

Max. Marks: 32

Questions: 8

Section A (MCQ) — 8 questions

- Q.1** Shown below are adsorption isotherms for a gas 'X' at temperatures T_1 , T_2 and T_3 :



p and $\frac{x}{m}$ represent pressure and extent of adsorption, respectively. The correct order of temperatures for the given adsorption is :

[NEET (UG) 2022 (Phase 2)]

- (1) $T_1 = T_2 > T_3$ (2) $T_1 > T_2 > T_3$
 (3) $T_3 > T_2 > T_1$ (4) $T_1 = T_2 = T_3$

Scan or tap for the full solution 

- Q.2** Which one of the following characteristics is associated with adsorption? [NEET 2016 (Phase 1)]

- (1) ΔG and ΔH are negative but ΔS is positive.
 (2) ΔG and ΔS are negative but ΔH is positive.
 (3) ΔG is negative but ΔH and ΔS are positive.
 (4) ΔG , ΔH and ΔS all are negative.

Scan or tap for the full solution 

- Q.3** Which of the following statements is correct for the spontaneous adsorption of a gas? [AIPMT 2014]

- (1) ΔS is negative and, therefore, ΔH should be highly positive.
 (2) ΔS is negative and, therefore, ΔH should be highly negative.
 (3) ΔS is positive and, therefore, ΔH should be negative.
 (4) ΔS is positive and, therefore, ΔH should also be highly positive.

Scan or tap for the full solution 

- Q.4** In Freundlich adsorption isotherm, the value of $\frac{1}{n}$ is

[AIPMT 2012 (Prelims)]

- (1) between 0 and 1 in all cases
 (2) between 2 and 4 in all cases
 (3) 1 in case of physical adsorption
 (4) 1 in case of chemisorption.

Scan or tap for the full solution 

- Q.5** If x is amount of adsorbate and m is amount of adsorbent, which of the following relations is not related to adsorption process? [AIPMT 2011 (Prelims)]

- (1) $x/m = f(p)$ at constant T
 (2) $x/m = f(T)$ at constant p
 (3) $p = f(T)$ at constant (x/m)
 (4) $\frac{x}{m} = p \times T$

Scan or tap for the full solution 

- Q.6** The Langmuir adsorption isotherm is deduced using the assumption [AIPMT 2007]

- (1) the adsorption sites are equivalent in their ability to adsorb the particles
 (2) the heat of adsorption varies with coverage
 (3) the adsorbed molecules interact with each other
 (4) the adsorption takes place in multilayers

Scan or tap for the full solution 

- Q.7** A plot of $\log(x/m)$ versus $\log p$ for the adsorption of a gas on a solid gives a straight line with slope equal to [AIPMT 2006]

- (1) $\log K$ (2) $-\log K$ (3) n (4) $1/n$

Scan or tap for the full solution 

- Q.8** Which is not correct regarding the adsorption of a gas on surface of a solid? [AIPMT 2001]

- (1) On increasing temperature adsorption increases continuously.
 (2) Enthalpy and entropy change is negative.
 (3) Adsorption is more for some specific substance.
 (4) It is a reversible reaction.

Scan or tap for the full solution 

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8			
Ans.	3	4	2	1	4	1	4	1			