



PAPER: Physical Chemistry (Sp. Theory-I)  
Course Code: CEHM-403 Part-I (Compulsory)

MAX. TIME: 15 Min.  
MAX. MARKS: 10

Signature of Supdt.:

**Attempt this Paper on this Question Sheet only.**

**Please encircle the correct option. Division of marks is given in front of each question.**

**This Paper will be collected back after expiry of time limit mentioned above.**

**Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)**

(i) When gas is weakly adsorbed on the solid surface the rate of reaction depends upon

- (a) Temperature of gas (b) Pressure of gas  
(c) Volume of gas (d) None of these

(ii) Langmuir Adsorption isotherm for single system is

(a)  $Q = \frac{p}{1 + p}$  (b)  $Q = \frac{bp}{1 + dp}$

(c)  $Q = \frac{p}{1 + bp}$  (d)  $Q = bp$

(iii) Tempkin adsorption isotherm is used for the decomposition of

- (a) CO (b) CO<sub>2</sub>  
(c) NH<sub>3</sub> (d) both (a) & (b)

(iv) When the value of h/f is equal to zero then the equation will be

- (a)  $R = K$  (b)  $R = 1$   
(c)  $R_{(Decomposition)NH_3} = O$  (d)  $R_{(Decomposition)NH_3} = Kd$

(v) A type of catalysis in which one of the products formed act as catalyst is called

- (a) Auto - catalysis (b) Enzyme catalysis  
(c) Acid - base catalysis (d) None of these

(vi) The "Inhibition" in which complex formation does not occur is

- (a) Competitive inhibition (b) Un-Competitive inhibition  
(c) Both (a) & (b) (d) None of these

(vii) When gas is strongly adsorbed on the solid surface the order of reaction is

- (a) Zero order reaction (b) 1<sup>st</sup> order reaction  
(c) 2<sup>nd</sup> order reaction (d) 3<sup>rd</sup> order reaction

(viii) In Eiley-Rideal mechanism the number of reactants adsorbed on catalyst surface is

- (a) One (b) Two  
(c) Three (d) Zero

(ix) Vanishing cream is example of

- (a) Water in oil emulsion (b) Oil in oil emulsion  
(c) Oil in water emulsion (d) None of these

(x) By increasing pressure the adsorption of gas

- (a) Increases (b) Decreases  
(c) Remains same (d) None of these



# UNIVERSITY OF THE PUNJAB

Seventh Semester – 2019

Examination: B.S. 4 Years Program

Roll No. ....

**PAPER: Physical Chemistry (Sp. Theory-I)**

**Course Code: CEHM-403 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**

**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q. 2. Answer the following short questions (2x10)**

- (i) What is peptization?
- (ii) What is ultrafiltration?
- (iii) Give three properties of colloids.
- (iv) What is electro Osmosis?
- (v) How coagulation of colloids takes place by persistent dialysis.
- (vi) What is Hardy-Schulze Rule?
- (vii) What are surfactants? Give its classification.
- (viii) Define Auto-catalysis. Give example.
- (ix) What do you mean by adsorption isotherms?
- (x) Why true solution does not show Tyndal Effect.

**Note: Attempt all the following long questions. (3x10)**

- Q. 3.** Explain catalytic reaction of two gases on a solid surface by Eiley-Rideal Mechanism.
- Q. 4.** What is enzyme catalysis? Derive the rate law expression for enzyme catalyzed reaction suffering Uncompetitive inhibition.
- Q. 5.** Explain one method for the determination of molecular weight of the macro molecules.