UNIVERSITY OF THE PUNJAB

Seventh Semester 2017
Examination: B.S. 4 Years Programme

Roll No. .....

PAPER: Physical Chemistry (Sp. Theory-I)
Course Code: CHEM-403

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet provided.

SUBJECTIVE

Section I

Q.2- Attempt all Short questions **(2x10=20)**

(a) How a catalyst effect the energy of activation?
(b) What is catalytic poisoning?
(c) What are promoters? Give examples.
(d) Differentiate between gel and emulsion.
(e) Describe a method for purifying colloidal solution?
(f) What is electrophoresis?
(g) What is the effect of surface area on adsorption?
(h) Define heterogeneous catalysis and give examples.
(i) Write any two postulates of Langmuir adsorption isotherm.
(j) Differentiate between physical and chemical adsorption.

Section II

Attempt all questions: **(3 x10)**

Q. No. 3

(a) What is adsorption? Discuss adsorption phenomena. (4)

(b) Explain Michaelis-Menton mechanism for enzyme catalysis. (6)

Q. No. 4

(a) What are sols? Give its types. (3)

(b) Discuss the kinetic properties of sols in detail. (7)

Q. No. 5

(a) Name different methods for molar mass determination of colloids, explain one method in detail. (5)

(b) Discuss heterogeneous kinetics of single system reactions. (5)

UNIVERSITY OF THE PUNJAB

Seventh Semester 2018
Examination: B.S. 4 Years Programme

Roll No. .....

PAPER: Physical Chemistry (Sp. Theory-I) **TIME ALLOWED: 2 hrs. & 30 mins**
Course Code: CEHM-403 **MAX. MARKS: 50**

Attempt this Paper on Separate Answer Sheet provided.

Q. 2 Attempt all questions: (2x10=20)

a) What is meant by enzyme inhibition?
b) What do you mean by critical micelle concentration (CMC).
c) What is emulsification? Explain.
d) Write two points of difference between colloid and sols.
e) Name different types of sols.
f) Define electropersis with examples.
g) Define autocatalysis.
h) Differentiate between gels and emulsions.
i) What do you mean by colloidal dispersion?
j) What is the effect of surface area on adsorption?

Q. 3 (a) Explain Langmuir-Hinshelwood mechanism to study inorganic reactions. (6)

(b) Discuss heterogeneous kinetics of single system reactions. (4)

Q. 4 (a) How the particle size of sols is determined? Explain. (5)

(b) What are Adsorption Isotherms? Explain. (5)

Q. 5 (a) Discuss peroperties of suspensions in detail. (6)

(b) Explain Michaelis menion mechanism for enzyme catalysis. (4)

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 propertics 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.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program : Seventh Semester – Fall 2021

Roll No. .....

Paper: Physical Chemistry (Sp. Theory-I) Course Code: CEHM-403 Time: 3 Hrs. Ma

Q.1. Answer the following short questions: (15x2=30

a) What is Thixotrophy phenomenon?

b) What do you mean by critical micelle concentration (CMC)

c) How tyndall effect is observed? What is emulsification?

d) Define Zeta potential.

e) Name different types of sols.

f) Differentiate between electrophoresis and electrosmosis.

g) Differentiate between physical and chemical adsorption.

h) Define enzyme catalysis with a suitable example.

i) Write any two postulates of Langmuir adsorption isotherm.

j) What is the effect of surface area on adsorption.

k) What is homogeneous catalysis. Write two examples?

l) Enzymes as catalysts are specific in nature, justify.

m) What is meant by enzyme inhibition?

n) Write two points of difference between colloids and sols.

o) What do you mean by colloidal dispersion.

Answer the following questions. (3x10=30

Q. No. 02.

a) Name different methods for molar mass determination of colloids. Explain one method in detail.

b) Discuss heterogeneous kinetics of single system reactions.

Q. No. 03.

a) Explain different properties of colloids.

b) Explain in detail Eley Rideal mechanism.

Q. No. 04.

a) What are colloids and how they are prepared & purified.

b) Explain Michaelis- Menton mechanism for enzyme catalysis.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Seventh Semester – Spring 2022

Paper: Physical Chemistry (Sp. Theory-I) Course Code: CEHM 403

Roll No. .....

Time: 3 Hrs. Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: (15x2=30)

a) What is meant by enzyme inhibition?
b) What do you mean by critical micelle Concentration (CMC)
c) How Tyndall effect is observed? What is emulsification?
d) Write two points of difference between colloids and sols.
e) Name different types of sols.
f) Differentiate between Electrophoresis and Electrosmosis.
g) Define autocatalysis.
h) Define enzyme catalysis with a suitable example.
i) What do you mean by colloidal dispersion.
j) What is the effect of surface area on adsorption.
k) What is Thixotrophy phenomenon?
l) Write any two postulates of Langmuir adsorption isotherm.
m) Define Zeta potential.
n) What is homogeneous catalysis. Write two examples?
o) Enzymes as catalysis are specific in nature, justify.

Properties
-true solution not
Brownin movemen
-Brownin movement
Particle size
-> Thermal energy
the molecules
motion
-> colloidal partic
increase size
velocity decreas
-> medium viscosi
increase velocity
decrease

Answer the following questions.

Q. No. 02. a) Explain Langmuir Hinshelwood mechanism to study organic and inorganic reactions. (06)

b) Discuss heterogeneous kinetics of double system reactions. (04)

Q. No. 03.

a) Discuss the preparation and purification of sols. (05)

b) What is adsorption. Discuss Langmuir adsorption isotherm. (05)

Q. No. 04.

a) What are colloids? Discuss Kinetic properties of Sols. (06)
b) Explain Michaelis- Menton mechanism for enzyme catalysis. (04)

-> Stability explain the system
-> determine molecular weight of particle
-> useful for studing transport
Colloidal.