



XI-SCI : Chemistry  
Adsorption and colloids,

DATE:

TIME: 1 hour 30  
minutes

MARKS: 25

SEAT NO:

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**Note:-**

1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

**Section A**

**Q.1 Select and write the correct answer.**

**(4)**

1. Smoke is a colloidal dispersion of  
A) gas in liquid      B) liquid in gas  
C) liquid in solid      D) solid in gas
2. Which of the following will show Tyndall effect?  
A) Aqueous solution of soap below critical micelle concentration      B) Aqueous solution of soap above critical micelle concentration  
C) Aqueous solution of sodium chloride      D) Aqueous solution of sugar
3. Which of the following characteristics is not correct for physical adsorption?  
A) Adsorption increases with increase in temperature      B) Adsorption is spontaneous  
C) Both enthalpy and entropy of adsorption are negative      D) Adsorption on solid is reversible
4. In the following reaction,  $\text{H}_2\text{O}_2(\text{aq}) \xrightarrow{\text{I}^-} \text{H}_2\text{O}(\text{l}) + \frac{1}{2} \text{O}_2(\text{g})$ .  $\text{I}^-$  is  
A) heterogeneous catalyst      B) homogeneous catalyst  
C) enzyme catalyst      D) acid catalyst

**Q.2 Answer the following.**

**(3)**

1. How does the precipitation of colloidal smoke take place in Cottrell precipitator?
2. Write an equation for Freundlich adsorption isotherm.
3. Based on the type of dispersed phase, what type of colloid is micelles?

**Section B**

**Attempt any Four**

- Q.3 State the properties of colloidal dispersion. **(2)**
- Q.4 Write a note on : Macromolecular colloids. **(2)**
- Q.5 Zeolites are shape specific catalyst. Justify. **(2)**
- Q.6 Define adsorption. Why students can read blackboard written by chalks? **(2)**
- Q.7 What are homogeneous catalysis? Give two examples **(2)**
- Q.8 Draw a labelled diagram : Dialysis **(2)**

**Section C**

**Attempt any Two**

- Q.9 Explain micelle formation in soap solution. (3)
- Q.10 Define and explain Brownian movement. (3)
- Q.11 Write Hardy-Sukze rules. (3)

**Section D**  
**Attempt any One**

- Q.12 Explain in brief Electrophoresis diagrammatically. What are its applications? (4)
- Q.13 Explain graphically Freundlich adsorption isotherm. (4)