TEST-B

SOLVED

Time:1 hr. **Max. Marks: 30**

SECTION-A

Tick the correct option:

1. The formation of micelles takes place only above **[1]**

   (i) critical temperature (ii) Melting temperature

   (iii) Kraft temperature (iv) Inversion temperature

2. If 'x' is amount of absorbate, 'm' is amount of adsorbent, which of the following is not related to adsorption process? **[1]**

   (i) $\frac{x}{m} = f(P)$ at constant T (ii) $\frac{x}{m} = f(T)$ at constant P

   (iii) P = f(T) at constant $\frac{x}{m}$ (iv) $\frac{x}{m} = \frac{1}{P \times T}$

3. Gold sol can be prepared by **[1]**

   (i) Hydrolysis of $AuCl_3$ (ii) Oxidation of gold by aqua-regia

   (iii) peptisation of $AuCl_3$ by HCl (iv) Reduction of $AuCl_3$ by formaldehyde solution

Assertion-Reason type Questions:

(i) If assertion and reason both are correct and reason is the correct explanation of assertion.

(ii) If assertion and reason both are correct and reason is not the correct explanation of assertion.

(iii) If assertion is correct and reason is wrong.

(iv) If assertion is wrong and reason is correct.

4. Assertion: Zeolites are sodium aluminosilicates, used as good shape selective catalysts because of their honeycomb-like structure.

   Reason: The catalytic activity and product molecules as well as upon the pores and cavities of the zeolites. **[1]**

5. Assertion: Ammonia in the Haber's process should be prepared in CO free atmosphere.

   Reason: The CO is a poisonous gas. **[1]**

One word /One Sentence type Questions.

6. The enthalpy of physisorption is less _____ than the enthalpy of chemisorption. **[1]**

7. What is critical micelle concentration? **[1]**

SECTION-B

8. Distinguish between physical adsorption and chemical adsorption graphically on the basis of adsorption isobar. **[2]**

9. Write a short note on the following: **[2]**

   (i) de-emulsification

   (ii) Dialysis

10. How will you prepare the following sols in water? **[2]**

    (i) Sulphur sol

    (ii) Hydrated ferric oxide sol

11. What are emulsions? **[3]**

    What are the different types of emulsions?

    Give one example of each.

12. (i) What are the conditions required for a sol to show Tyndall effect? **[3]**

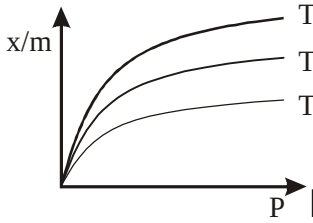
    (ii) What is the role of ZSM-5 in the petroleum industry?

13. You are given the following graph between x/m (extent of adsorption and the pressure at different temperature) **[3]**

    (i) Why does x/m becomes constant at high pressure?

    (ii) Arrange the three temperature in order of increasing value.

    (iii) Define adsorption isotherm.



14. What are enzymes? **[3]**

    What optimum temperature and the pH under which the enzyme catalysis take place?

    Give one example of enzyme catalysis.

15. (i) Give one example of a gel and one example of aerosol. **[1×5]**

    (ii) What do you understand by the term 'activated charcoal'?

    (iii) Give two points to distinguish between lyophilic sol and lyophobic sol.

    (iv) Why do colloidal solutions show Brownian movement?

    (v) What one protective coloids? Give one example.

