B.Tech.(Chemical Engineering) Seventh Semester (C.B.S.)

Elective - II : Catalysis

P. Pages : 1 **NRT/KS/19/3803**

Time : Three Hours * 0 0 8 4 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. **Any five** questions.
3. Diagrams and chemical equations should be given whenever necessary.
4. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Discuss the scope of lipases as biocatalyst giving relevant examples. **8**

b) Explain the specificity of enzymes. **8**

2. a) Discuss the factors to be considered for catalyst effectiveness factor for a differential trickle-bed-reactor. **8**

b) Give details of fluidized bed reactor components. What are the industrial applications of fluidized bed reactor. **8**

3. Give details of various adsorption theories in developing the active sites. **16**

4. a) Discuss in detail the steps of catalytic reactions. **8**

b) Explain the process of enzymatic milk coagulation. **8**

5. a) What are molecular sieves? Explain the applications of molecular sieves. **8**

b) Discuss the methods for determination of pore volume in catalyst. **8**

6. a) Explain sol gel method for catalyst preparation. **8**

b) Give details of alkylation of propane dimers to gasoline by palladium based system and nickel based system. **8**

7. a) What do you understand by enzyme cofactor? Explain the function of cofactor. **8**

b) Discuss the synthesis data for L-ascorbic acid form D-Glucose. Explain how 4 step route is reduced to single step by adopting proper catalyst. **8**

8. Write a note on **16**

i) Greener brightening agent

ii) BET Equation

iii) Denaturation of biopolymer.

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