

B.Tech Sem – VIII (2007 Course) (Chemical Engg.) : WINTER

- 2017

SUBJECT : ELECTIVE – II - CATALYSIS

Day : **Wednesday**

Date : **22/11/2017**

W-2017-2645

Time : **02.30 PM TO 05.30 PM**

Max. Marks : 80

N.B.

- 1) **Q.1 and Q.5 are COMPULSORY.** Out of the remaining attempt any **TWO** questions from each Section.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Answers to both the sections should be written in **SEPARATE** answer book.
 - 4) Assume suitable data if necessary.
-

SECTION – I

- Q.1**
- a) Explain “Autocatalysis” with suitable examples. **(05)**
 - b) How solid catalyst is prepared? Give example. **(05)**
 - c) Write a note on “Catalyst Deactivation”. **(04)**
- Q.2** Explain in detail “Catalytic Cracking” **(13)**
- Q.3**
- a) What is mean by catalyst forming? Explain in detail. **(07)**
 - b) Write a detail note on “Properties and Characteristics of Industrial Catalyst” **(06)**
- Q.4**
- a) What is mean by promoters and inhibitors? Explain with example. **(07)**
 - b) How catalyst is classified? **(06)**

SECTION – II

- Q.5**
- a) Explain “Chemisorption” with suitable example. **(06)**
 - b) What is the role of heat transfer and mass transfer in kinetic modeling? **(06)**
 - c) Give different types of laboratory reaction with example. **(02)**
- Q.6**
- a) Explain elementary steps and mechanism for catalytic reaction. **(08)**
 - b) Write a note on “Microkinetics”. **(05)**
- Q.7**
- a) Derive the relation for diffusion coefficient in porous media. **(07)**
 - b) Explain internal and external effectiveness factors for solid catalyst. **(06)**
- Q.8**
- a) Give all the details of laboratory catalytic reactors and explain with suitable example. **(07)**
 - b) Write a detail note on “Catalytic Membrane Reactors”. **(06)**

* * *