

B. TECH. SEM - III (CHEMICAL ENGG.) 2014 COURSE) (CBCS)

: SUMMER - 2018

SUBJECT: PHYSICAL CHEMISTRY

Day: Wednesday
Date: 23/05/2018

S-2018-2226

Time: 02.30 PM TO 05.30 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable **CALCULATOR** is allowed.
- 4) Draw neat and labeled diagrams **WHEREVER** necessary.

Q.1 a) Write note on carbon free radicals. (05)

b) Define and explain Homolysis and Heterolysis. (05)

OR

Q.1 What are different type of organic reactions? Explain them with suitable example. (10)

Q.2 Give the mechanisms of Friedel craft alkylation and acylation. (10)

OR

Q.2 Give the reagents used in synthesis of the following chemicals starting from benzene. (10)

- i) Toluene ii) Nitrobenzene

Q.3 Give the various types of transitions involved in electronic spectroscopy with one example in each case. (10)

OR

Q.3 Define and explain the following terms: (10)

- i) Auxochrome ii) Red shift

Q.4 Explain the adsorption theory of catalysis. (10)

OR

Q.4 Explain and illustrate the following: (10)

- i) Negative catalysis ii) Enzyme catalysis

Q.5 Discuss conditions which are necessary for the formation of a hydrogen bonding. (10)

OR

Q.5 What are Vander Waal's forces? What is the origin of Vander Waal's forces? (10)

Q.6 Write note on emulsion and microemulsions. (10)

OR

Q.6 Explain different mechanism of adhesion with suitable example. (10)