

Student ID

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
EndTermExamination
B.Tech. [II Year]/[III sem.]/[2013-2014]

Course Name: Unit processes in organic synthesis

Course Code: CHE304

Max Marks: 40

Time: 03.00 hr

Instructions:

1. Attempt all sections.
2. Attempt any **four** questions from Section B

Section A

(10 Marks)

Q 1.

- (i) Which of the following can be used to represent the rate of reaction?
 - a. g/L
 - b. g/mol
 - c. g*min/mol
 - d. mol/L*min
- (ii) Natural Rubber is a polymer of
 - a. Butadiene
 - b. Ethylene
 - c. Styrene
 - d. Isoprene
- (iii) What is the range of infra-red radiations?
- (iv) What is 'Living Polymerization Technique'?
- (v) What is the unit of hardness?

Q 2. (i) Write about thin layer chromatography?

(ii) Define SN1 and SN2 nucleophilic substitution reaction

Section B

(20 Marks)

Q 3 Write short note on:

- (i) Number average and Weight average molecular weights
- (ii) Degree of polymerization

Q 4 What is spectroscopy? Explain UV-visible spectroscopy.

Q 5 Define catalysis and their mechanism. What do you understand by homogeneous and heterogeneous catalysis, discuss with examples.

Q 6 Compare

- (i) Order and Molecularity of reactions
- (ii) Electrophilic and Nucleophilic reactions

Q 7 What do you mean by the order of reaction? Explain first order and second order of reaction. Discuss how reaction rates are dependent on temperature.

Section C

(10 Marks)

Q 8. What is polymerization? Discuss in detail about free radical and ionic polymerization.