Printed Pages: 02 **Sub Code: ROE035**

Paper ID: | 9 | 0 | 1 | 3 | **Roll No.** | | | | | | | | | | |

B. TECH
(SEM III) THEORY EXAMINATION 2017-18
POLYMER SCIENCE AND TECHNOLOGY

Time: 3Hours ***Max. Marks: 70***

Note: Attempt all Sections. Assume missing data, if any.

SECTION A

1. Attempt *all* questions in brief: 2 x 7 = 14

a. Give the preparation of Buna – N and its one application.
b. What is polymer composite?
c. Write short notes on coordination polymerization,
d. Define plasticizers.
e. Give two optical properties of polymer.
f. Define the term polymer fracture.
g. Write the application of silicon rubber

SECTION B

2. Attempt any *three* of the following: 3 X 7 = 21

a. Discuss the preparation, properties and application of Teflon and PVC
b. Write the mechanism of formation of PMMA by anionic polymerization.
c. What do you understand by isotactic chain and syndiotactic chain?
d. Discuss the mechanism of Zeigler-Natta polymerization. write the structure of stereo-regular polypropylene.
e. What are initiators? Show the generation of free radicals by the decomposition of Benzoyl peroxide and persulphate.

SECTION C

3. Attempt any *one* part of the following: 1 X 7 = 7

(a) Write notes on the following
  (i) Epoxy resins
  (ii) Urea-formaldehyde resins.
(b) What are composite polymer? Give in brief the applications of composite polymers.

4. Attempt any *one* part of the following: 1 X 7 = 7

(a) Differentiate between addition and condensation polymerization.
(b) Write short notes on conducting polymers.

5. Attempt any *one* part of the following: 1 X 7 = 7

(a) Explain the Kinetics of cationic polymerization,
(b) What are high performance polymers? Give the structure, properties and application of Fluoro polymers.

6. Attempt any *one* part of the following: 1 X 7 = 7

(a) What is natural rubber? Write its limitation. Discuss the vulcanization of rubber.
(b) Explain the mechanism of co-ordination polymerization.

7. Attempt any *one* part of the following: 1 X 7 = 7

(a) Discuss the application of polymers in space and sport field.
(b) What do you understand by Linear polyethylene (HDPE) and nylon 6.