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Roll No.

G84

B. Tech. EXAMINATION, 2020

(Seventh Semester)

(B Scheme) (Main & Re-appear)

(CHE)

CHE407B

POLYMER SCIENCE AND ENGINEERING

Time : 2½ Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions in all. All questions carry equal marks.

1. (a) Discuss Ziegler-Natta catalyst.
(b) Explain Block and graft Polymerisation in detail.
(c) Give applications of HDPE and PP.
2. (a) Give features of Chain and step polymerisation.
(b) Explain free radical polymerisation mechanism in detail with example.
3. Write notes on any *three* of the following :
(a) Emulsion and Suspension Polymerisation
(b) Polymer Additives
(c) Polydispersity
(d) Q-e Scheme.
4. Discuss Cationic and Anionic polymerisation kinetics mechanisms in detail.
5. (a) Discuss the effect of Molecular weight on polymer properties.

- (b) Explain the following :
 - (i) Cryoscopy
 - (ii) Thermal analysis methods for polymers.
- 6. (a) Enumerate on different types of polymer degradation.
- (b) Discuss on rheological response of viscoelastic polymers.
- 7. Explain working principle and applications of the following :
 - (a) Blow Moulding
 - (b) Rotational Casting.
- 8. Write notes on the following :
 - (a) Thermoforming
 - (b) Calendering
 - (c) Blowing agents and Colorants.