

APRIL/MAY 2019

**MCH14A — ADVANCED POLYMER
CHEMISTRY**

Time : Three hours

Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL questions.



- (a) What are resins? How are they prepared? Give their uses.

Or

- (b) Differentiate linear, branched and cross linked polymers. Illustrate with examples.

2. (a) Discuss the polymerization of propylene using Zeigler-Natta catalyst.

Or

- (b) Write a note on Kinetic chain length.

3. (a) Explain gel permeation chromatography method.

Or

- (b) Discuss the mechanical properties of polymers.
4. (a) Explain the role of ion-exchange resin in demineralization of water.

Or

- (b) Explain the preparation, properties and applications of TEFLON.
5. (a) Discuss different biodegradable polymers with examples.

Or

- (b) Give a detailed account of five retardant polymers.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. (a) Explain solution polymerization technique with examples.
- (b) Differentiate between thermoplastics and thermosetting polymers.
7. Discuss the kinetics and mechanism of cationic and anionic polymerizations.
8. Explain osmotic pressure and viscosity method for the determination of molecular weight of polymers.

9. What are natural polymers? Describe the application and structures of starch and chitosan derivatives.

10. Explain the following

- (a) Electroluminescent polymers
- (b) Polymer composites
- (c) IPN interpenetrating network polymers.

