C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, NOVEMBER - 2018

M.Sc., CHEMISTRY **SEMESTER I**

P18ECH101 – POLYMER CHEMISTRY (ELECTIVE)

Time: Three Hours Maximum: 75 Marks

SECTION - A (5 X 6 = 30 Marks)

Answer **ALL** Questions.

1. a) Write down the structures of the following monomers and repeat units neatly.

   i) Acrylic acid ii) Methyl methacrylate iii) Styrene iv) Acrylonitrile v) Propene.

   (Or)

   b) Discuss bulk polymerisation.

2. a) Discuss the mechanism and kinetics of free radical addition polymerization of vinyl monomers.

   (Or)

   b) Discuss in detail about copolymerisation.

3. a) Explain glass transition temperature and write the relationship between Tg and Tm.

   (Or)

   b) Discuss the molecular weight determination of a polymer by viscosity measurements.

4. a) Explain the preparation and application of poly acrylonitrile and Nafion.

   (Or)

   b) Explain the importance of Natural polymers.

5. a) What are biodegradable polymers? Give its biomedical application.

   (Or)

   b) What are electroluminescent polymers?

SECTION - B (3 X 15 = 45 Marks)

Answer **ANY THREE** Questions.

6. a) Differentiate between thermoplastic and thermosetting polymers.

   b) Explain what are resins, elastomers and fibres.

7. a) Explain the kinetics and mechanism of cationic polymerization.

   b) What are inhibitors and retarders?

8. Explain the molecular weight determinations by osmometry and ultra-centrifuge.

9. Give the application of Starch, Cellulose and chitosan derivatives in detail.

10. Write about poly electrolytes and conducting polymers.

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