

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2018
(Fifth Semester)

Branch – **CHEMISTRY**

CORE ELECTIVE – I : POLYMER CHEMISTRY

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 x 2 = 20)

- 1 What are natural polymers? Give example.
- 2 Mention the advantages and disadvantages of Bulk Polymerization.
- 3 What is Ziegler – Natta catalyst? Give its structure.
- 4 Give the principles of cryoscopy.
- 5 What is glass transition temperature?
- 6 What is LDPE?
- 7 What is CPVC? Give its application.
- 8 Write down the structure and uses of polyurethane.
- 9 What is polymer degradation?
- 10 What are antioxidants? Give example.

SECTION - B (25 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Give anionic polymerization with suitable example.
OR
- b Explain bulk polymerization technique.
- 12 a Write down the ebullioscopy method in determining the molecular weight of the polymer.
OR
- b Write down the membrane osometry method of molecular weight determination.
- 13 a Write short notes on flame resistance of the polymer.
OR
- b Write short notes on chemical resistance of the polymer.
- 14 a Give the preparation and applications of Polypropylene.
OR
- b Write note on biodegradable polymers.
- 15 a Write about geometric isomerism of polymers.
OR
- b Explain the types of degradation.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Explain the emulsion polymerization technique.
- 17 Explain the ultracentrifugation in the determination of molecular weight.
- 18 What are the factors affecting glass transition temperature.
- 19 Write down the preparation, types and applications of polyethylene.
- 20 Explain ring opening polymerization.