14CHU19A

PSG COLLEGE OF ARTS & SCIENCE

(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2018

(Fifth Semester)

Branch- **CHEMISTRY**

CORE ELECTIVE -1 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 Mention trade name of any two polymers.
2 Define addition polymerization process.
3 What is ebullioscopy analysis?
4 Define degree of polymerization.
5 Define thermal stability of polymer.
6 What is coherence energy?
7 Mention any two applications of polyethylene.
8 Write down the preparation of PVC.
9 What are flame retardants?
10 Differentiate between inhibitors and initiators with one example for each.

SECTION - B (25 Marks!

Answer **ALL** Questions

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

11 a Explain mechanism anionic polymerization process.

OR

b Write a note on classification of polymers.

12 a How is molecular weight of a polymer is determined by osmometry method?

OR

b Discuss Mark-Howlink relationship.

13 a Write a note on glass transition temperature of polymer.

OR

b Mention the primary and secondary bond forces involving in polymer.

14 a Explain the application and draw the structure of cellulose.

OR

b Write down the preparation of (i) Poly amides (ii) Poly carbonates.

15 a Explain the mechanism of degradation.

OR

b Write note on bio-degradable plastics.

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

16 Write the mechanism involving in Ziegler - Natta catalyst.

17 How will you determine the molecular weight of polymer by ultra centrifugation?

18 Write a note on thermal stability and electrical conductivity of polymer.

19 Illustrate the types, preparation and uses of polypropylene.