14CHU19A

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2019
(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 Explain addition Polymerisation reaction.
2 What are natural polymers?
3 What is end group analysis?
4 Write the formula to determine molecular weight by number average method.
5 Explain electrical conductivity of polymers.
6 Write down the preparation of polyesters.
7 Mention any two importants of natural polymers.
8 Mention any two applications of PVC.
9 Define colourent with example.
10 What are initiators?

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a Write the mechanism of radial polymerization.
OR
b Discuss briefly about classification of polymers.

12 a How will you determine the number average molecular weight of polymers?
OR
b Discuss Mark. How link relationship?

13 a Write note on glass transition temperature of polymer.
OR
b Write note on chemical resistance of polymer.

14 a Write down the characteristic applications of polyethylene.
OR
b Mention the structure of cellulose and cellulose acetate.

15 a Write note on stabilizers.
OR
b Discuss bio-degradable plastics.

SECTION - C (30 Marks)
Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16 Explain the mechanism of co-ordination polymerization process with the help of Ziegler-Natta catalyst.

17 Calculate the molecular weight of polymer by light scattering method.

18 Explain primary and secondary bond forces in polymers.

19 Write down the preparation and uses of following:
(i) Polyamides (ii) Polycarbonates (iii) Polyformaldehyde.

20 Write brief note on stereo regularity of polymers with example.