D 40068 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2018

(CUCBCSS—UG)

Polymer Chemistry

PC 6B 01—POLYMER CHEMISTRY—I

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all** *questions.*
Each question carries 1 *mark.*

1. Give the structure of PS.
2. Who invented nylon ?
3. Give an example for natural polymer.
4. Give structure of teflon.
5. What is a polyamide ?
6. Which is the first synthetic rubber ?
7. What is meant by liquid resin.
8. Name two biodegradable polymers.
9. Give an example for thermosetting polymer.
10. What is weight average molecular weight ?

(10 × 1 = 10 marks)

Part B

Answer any **ten** *questions.*
Each question carries 2 *marks.*

11. What is a graft copolymer ?
12. What is SBR, give two uses ?
13. How are polyurethanes prepared ?
14. What are flame retardants ?
15. What are fillers, give examples ?
16. Write on polymer additives.
17. What are high temperature polymers ?
18. What is creep ?

Turn over

19. Distinguish between addition and condensation polymers.
20. What are speciality polymers ?
21. What is meant by recycling of plastics ?
22. What are conducting polymers ?

(10 × 2 = 20 marks)

Part C

Answer any **five** *questions.*
Each question carries 6 *marks.*

23. How will you use TGA to study polymer degradation.
24. Give the important uses of polymers in medical field.
25. Write short note on morphology of crystalline polymers.
26. What is viscous flow, rubber like elasticity and visco elasticity ?
27. Draw a graph to show the relation between Tg, Tm and MW of polymers.
28. What are engineering plastics ?
29. What are the different types of PE, give difference between them ?
30. Explain thermal, oxidative and photochemical degradations of polymers.

(5 × 6 = 30 marks)

Part D

Answer any **two** *questions.*
Each question carries 10 *marks.*

31. Discuss the preparation, properties and applications of any three commercial polymers
32. Compare free radical, ionic and coordination polymerizations.
33. Explain ultracentrifugation.
34. Derive expression for kinetics of stepwise polymerisation.

(2 × 10 = 20 marks)