

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2012

(CCSS)

Chemistry Main (Elective)

CH6 B20 (E4) – CHEMISTRY AND TECHNOLOGY OF POLYMERS

Time : Three Hours

Maximum : 30 Weightage

I. Answer *all* the questions. Each question carries a weightage of $\frac{1}{4}$. This section

1. Give an example of natural fibre.
2. _____ is an example of cross linked polymer.
3. Nylon-6 is prepared from _____
4. Name a free radical initiator _____
5. Resins differ from plastic, as resins have
 - (a) high molecular weight
 - (b) low molecular weight
 - (c) high tacticity
 - (d) are highly cross linked
6. Hard and brittle polymers have
 - (a) high modulus
 - (b) low modulus
 - (c) no modulus _____
 - (d) moderate modulus
7. Crystalline structure of polymer are studied by
 - (a) UV spectroscopy
 - (b) X-ray diffraction
 - (c) light scattering
 - (d) viscosity measurement
8. Hollow articles can be made by
 - (a) blow moulding
 - (b) injection moulding
 - (c) compression moulding
 - (d) calendaring
9. Butyl rubber is prepared from isoprene and _____
10. Give an example of plasticizer.
11. The back bone of silicones consist of _____ linkages.
12. Polyurethane is prepared from _____ and glycol.

(12 x $\frac{1}{4}$ = 3 weightage)

Turn over

II. Answer all questions. Each carries a weightage of 1 :-

13. What is SBR.
14. Explain the preparation of a composite.
15. Describe how tear resistance of a polymer is tested
16. What are fillers. Mention their importance.
17. What is calendaring.
18. Mention any two methods of preparation of synthetic rubber.
19. What is Zeigler-Natta catalyst.
20. Describe the synthesis PTFE
21. What are foams. Give their importance.

(9 x 1 = 9 weightage)

III. Answer any *five* questions. Each carries a weightage of 2 :-

22. What are silicones. Mention its importance.
23. Describe the difference between block and graft copolymer.
24. Explain step growth polymerization with an example.
25. Discuss the different configurations possible in polymers.
26. Describe how glass transition temperature is measured.
27. Write a note on compounding.
28. Describe the different methods of spinning used in industry.

(5 x 2 = 10 weightage)

IV. Answer any *two* questions. Each carries a weightage of 4 :-

29. With examples describe the different kinds of ionic polymersation.
30. Distinguish between M_n and M_w and describe how they are measured.
31. Discuss the synthesis, properties and applications of (a) polyurethane (b) PMMA and (c) engineering plastics.

(2 x 4 = 8 weightage)