C 80171 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, MARCH 2020

(CUCBCSS—UG)

Polymer Chemistry

PC 6B 02 (E1)—POLYMER PROCESSING AND TECHNOLOGY

Time : Three Hours Maximum : 80 Marks

Part A

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

1. What is cordite ?
2. Give any *one* application of cellulose acetate.
3. Name the moulding technique used for the continuous moulding of thermoplastics into articles having uniform cross section.
4. What are laminates ?
5. Name the material used as filler tyre industry.
6. What is the function of antioxidants in plastic processing ?
7. Name the mechanical properties that can be tested in a Universal Testing Machine.
8. What is crepe rubber ?
9. What is the limitation of using sulphur as a vulcanizing agent ?
10. Give an example for a blowing agent in rubber processing.

(10 × 1 = 10 marks)

Part B

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

11. What is the function of plasticizers in polymer processing ?
12. Explain fatigue in polymers.
13. How is impact strength of a polymer measured ?
14. What are the different types of natural rubber ?

Turn over

15. Write a brief note on accelerators used during latex compounding.
16. What are extenders ?
17. What is mastication ?
18. List the advantages of Technically Specified Rubber.
19. What are the methods adopted for the preservation of rubber latex ?
20. List the advantages of peroxide cure over sulphur cure.
21. Write a note on inorganic and organic colourants used in plastic industry.
22. What is parison ?

(10 × 2 = 20 marks)

Part C

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

23. Explain the major advantages and disadvantages of an internal batch mixer.
24. Describe the tests for determining the hardness of rubber.
25. Explain the different methods used for the concentration of rubber latex.
26. Discuss the criteria for latex compounding.
27. Write a note on polymer film casting with a neat sketch.
28. Compare the use of aryl amines and hindered phenols as antioxidants in rubber industry.
29. Illustrate the various steps in transfer moulding.
30. Discuss the importance of Melt Flow Index.

(5 × 6 = 30 marks)

Part D

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

31. Explain the mechanism of sulphur and non sulphur vulcanization.
32. With a neat sketch explain extrusion moulding of plastics.
33. Discuss in detail the synthesis and properties of important types of rayon derived from cellulose.
34. Explain the principle, working and advantages of Universal Testing Machine.

(2 × 10 = 20 marks)