

C 1126

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Name.....

Reg. No.....

SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2021

Polymer Chemistry

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

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.*

*Each question carries 1 mark.*

1. Write the composition of latex.
2. Why articles having undercuts cannot be injection moulded ?
3. Name the co-polymer of acrylonitrile and 1, 3 butadiene.
4. Expand ASTM.
5. What is the range of tensile strength exhibited by elastomers ?
6. What is ductile rupture ?
7. Give an example of thermosetting plastic.
8. Who invented mercerization of cotton ?
9. Name one organic pigment used in plastic industry.
10. Which is the process used for the manufacture of cellophane sheets ?

(10 × 1 = 10 marks)

**Section B**

*Answer at least five questions.*

*Each question carries 4 marks.*

*All questions can be attended.*

*Overall Ceiling 20.*

11. Write a note on latex preservation.
12. How is Ribbed Smoked Sheet prepared ?
13. How is a glove manufactured by latex dipping ?

**Turn over**

14. What is the difference between internal plasticization and external plasticization ?
15. Discuss any *one* classification of fillers used in plastic industry.
16. What information is provided by ISO 527-1 tensile testing of plastics ?
17. Explain mastication.
18. What is Creep ?
19. Discuss the principle of Ostwald's viscometer.
20. List the properties of a plasticizer.
21. What is thermoforming ?
22. Explain the role of antioxidants in plastic industry.

(5 × 4 = 20 marks)

### Section C

*Answer at least four questions.*

*Each question carries 7 marks.*

*All questions can be attended.*

*Overall Ceiling 28.*

23. Explain the general characteristics of different grades of Technically Specified Rubber.
24. With a neat sketch explain compression molding.
25. Discuss the general pattern of a stress strain curve for a polymer.
26. Explain the theory of sulphur vulcanization.
27. Describe calendaring with a diagram.
28. Discuss the mechanism of hindered phenols as antioxidants.
29. Write a note on melt flow index.
30. Explain the importance of carbon black in rubber industry.

(4 × 7 = 28 marks)



**Section D**

*Answer any two questions.*

*Each question carries 11 marks.*

31. With a neat diagram explain the injection molding of plastics.
32. Discuss in detail the ASTM D 638 method of tensile testing of plastics.
33. Explain the following terms involved in latex technology :
  - a) Compounding.
  - b) Dipping.
  - c) Molding.
  - d) Casting.
  - e) Spreading.
34. Discuss with suitable examples the various additives used in plastic industry.

(2 × 11 = 22 marks)