

M.Sc. DEGREE EXAMINATION, MARCH/APRIL 2019.

SECOND SEMESTER

MATERIAL SCIENCE AND NANOTECHNOLOGY

Paper – III : POLYMER PROCESSING, COMPOSITES AND HEAT RESISTANT POLYMERS

Time : Three hours

Maximum : 75 marks

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page.

1. Write the fillers used in resin formulations.
2. Discuss oxidative degradation of polymer.
3. Discuss single screw extrusion process.
4. Write about spinnerets.
5. Write the difference between filler and reinforcement.
6. Write the properties of polyester.
7. Write about the need of heat resistant polymers.
8. Discuss the properties of polyphenylene.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. Discuss the importance of internal and external plasticizers in polymers and Write about softeners used in polymers.

Or

10. Write about photo stabilizers and nucleating agents What is the equipment used for compounding the fabricator.
11. Explain the process of plunger type injection moulding with diagram.

Or

12. Discuss extrusion blow moulding process with diagram.

13. Write the classification of composites and matrix materials.

Or

14. Write the fabrication of composite by compression moulding and reaction injection moulding.

15. Write the preparation and properties of poly sulfones and polyimides.

Or

16. Write the preparation and properties of poly benzimidazole and poly bismaleimides

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