2/11

2503N1096

Candidate's Seat No :_____

M.Sc. Sem.-3 Examination

501

Polymer Science

March-2025

Time : 2-30 Hours] **[Max. Marks : 70**

QUESTION – 1 Write the following

(i) Define polymer processing. How MFI and K value play important role in selection of polymer grade for processing? **7 MARKS**

(ii) Write short note on i) Masterbatch ii) Powder concentrates **7 MARKS**

OR

(i) Explain the blow molding process. Enlist industrially important products prepared by this. **7 MARKS**

(ii) Describe different types of extruders used in extrusion process. Give their advantages. **7 MARKS**

QUESTION – 2 Write the following

(i) Define transfer moulding. Describe plunger type and pot type transfer moulding. **7 MARKS**

(ii) Define thermoforming. Describe different types of thermoforming process **7 MARKS**

OR

(i) Describe the design peculiarities of pressure forming. **7 MARKS**

(ii) Differentiate between single screw and twin screw extruders. **7 MARKS**

QUESTION – 3 Write the following

(i) Describe the processing techniques of thermosetting plastics. **7 MARKS**

(ii) Describe hand layup and spray up technique with suitable diagram. Give applications. **7 MARKS**

OR

(i) Write short note on SMC & DMC. Give their advantages and application. **7 MARKS**

(ii) Describe pulltrusion process with schematic diagram. Give its advantages, disadvantages and application. **7 MARKS**

QUESTION – 4 Write the following

(i) Explain how the mixing and compounding of rubber is achieved? **7 MARKS**

(ii) Explain the manufacturing of hose, and conveyor belts. **7 MARKS**

(P.T.O)

OR

(i) Discuss the steps involved in compression moulding and transfer moulding of thermosetting plastics, including the materials used and typical applications. **7 MARKS**

(ii) Describe spun bonding and melt-blowing process. **7 MARKS**

QUESTION – 5 Attempt any seven out of twelve. **14 MARKS**

1. Differentiate between cull and flash.
2. What do you mean by moulding cycle.
3. Define back pressure and its importance
4. Define annealing and quenching.
5. Define L/D ratio.
6. What is Sprue Gate and where it is located?
7. Differentiate between accelerator and cross-linker.
8. When the screw speed of an extruder increases the melt shear rate decreases. (True/False)
9. Burn marks appear when tool lacks venting (True/False)
10. The transition zone in injection screw builds up the pressure in the melt. (True/False)
11. Expand BOPP.....
12. TQPP stands for .....

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