(b) Discuss the benefits and challenges of using thermal bonding for plastics and rubbers?

(6,4)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5598 **J**

Unique Paper Code : 6092012402

Name of the Paper : Polymer Processing Technology

Name of the Course : **B. Sc. (H) Polymer Science**

Semester : IV

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. Attempt any six questions.
3. Draw neat and labelled diagram wherever required.

1. What materials can be extruded? Discuss film formation by single screw extruder with suitable diagram. (10)

2. What are the key stages of the injection molding process? Discuss the factors like temperature, pressure, and cooling time affect the process and also discuss some common defects that can occur in injection-molded parts. (10)

3. (a) What is compression molding? Discuss the materials are commonly used in compression molding.

   (b) Write short notes on reaction engineering moulding. (6,4)

4. What are the different types of blow molding processes? How do factors like air pressure,

temperature, and mold design affect the blow molding process? What are some common defects that can occur in blow-molded parts? (10)

5. What types of materials are commonly used in rotational molding? How do material properties affect the rotational molding process? Discuss the some considerations for selecting materials for rotationally molded parts? (10)

6. What are the common defects that can occur in thermoformed products? How can these defects be prevented or minimize? Illustrate the factors that affect the quality and consistency of thermoformed products. (10)

7. (a) What are the different types of welding processes used for plastics? How do the welding parameters affect the joint quality?