

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1935

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Unique Paper Code : 6092012402

Name of the Paper : Polymer Processing and Technology

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

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. **All** questions carry **15** marks each and **all** parts have equal marks.
 3. Attempt **Four** questions in all.
 4. Question No. **1** is compulsory.
 5. Draw neat and labelled diagram wherever necessary
 6. Attempt **all** parts together.
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1. (a) Explain the reasons for the variation of thickness in products formed by thermoforming process.
(b) Why is continuous extrusion blow molding not recommended for large blow molded parts?
(c) Write a short note on reciprocating screw.
(d) Compare the L/D ratio of injection molding screw with the extruder mentioning significance.
(e) Explain the purpose of preplasticizing unit.
 2. (a) Write the principle & processing parameters used in transfer molding with a schematic diagram. Also mention the precautions taken while making a part with this technique.
(b) Describe a technique for forming a part with an outer coating and a different inner material using rotomolding.
(c) What are the advantages and disadvantages of a flash-type mold-closure system in compression molding?

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3. (a) Illustrate injection molding cycle for a reciprocating screw injection molding machine with schematic representation.
(b) Compare single screw extruder and twin-screw extruders in terms of their features and performance.
(c) What are the plugging variables in plug-assisted system in thermoforming?
4. (a) Illustrate Nylon type screw with suitable diagram.
(b) Explain how polyethylene is cross-linked in a rotomolding operation.
(c) Explain offset die schematically and how coating thickness can be controlled.
5. Write short note on **any five**:
 - (a) Twin sheet forming
 - (b) Defects in compression molded products
 - (c) Torpedo
 - (d) Defects in rotational molded articles
 - (e) Bridging in extrusion
 - (f) Platisols and organisol