

Format of the First page of a Model Question Paper in A4 size page - SET-B

Sl-No. of Question Paper: 2352

Unique Paper Code : 1141401

Name of the Paper : Polymer Processing and Mould Design

Name of the Course : B. Tech. Polymer Science

Semester : IV

Duration : 3-Hours

Maximum Marks : 75 Marks

F-4

Instruction for candidates

(Write your roll no. on the top immediately on receipt of the question paper)

Attempt five questions in all. Question No. 1 is compulsory.

Draw neat and labeled diagram wherever necessary.

Q.1

- (a) Explain runner layout with suitable example.
- (b) Discuss cold hobbing method to prepare mould.
- (c) Explain air ejection and its significance.
- (d) Discuss the importance of side core in mould.
- (e) Explain the mold cycle in automatic compression molding
- (f) Explain L/D ratio for extruder and relate with its output.
- (g) Describe the reaction injection moulding.
- (h) Describe functions of compression zone in single screw extruder.
- (i) Give the diagram of Nylon and PVC type screw.

(9x3=27)

Q2.

- (a) Discuss the basic characteristic properties required in a material for thermoforming. Give names of materials which fulfill these. Describe the principal of thermoforming process.
- (b) Compare single stage and two stage injection stretch blow molding.
- (c) Discuss the reasons of these defects (i) Short Shots, (ii) Sink Marks, and (iii) Voids.

(5,4,3=12)

Q3.

- (a) Write the name of the spark machining method for various mould making with diagram.
- (b) Discuss double day light mould.
- (c) Name any one processing technique for making each of the following products:-
 - (i) PVC floorings
 - (ii) Disposable cups
 - (iii) Cold cream containers
 - (iv) Bottle caps
 - (v) Suitcases
 - (vi) Plastic statues
 - (vii) Aircraft bodies
 - (viii) PET bottles
 - (ix) Electric switches

(6,3,3=12)

Q4.

- (a) Draw a neat diagram of two stage screw plasticizing injection moulding machine and discuss its advantages over plunger type machine.
- (b) For single screw extruders the diameter of barrel are 90 mm and 120 mm. Calculate their outputs.
- (c) Describe the process of compression moulding machine and give its advantages.

(3,3,6=12)

Q5.

- (a) What is ejection system? Describe the different parts of ejection device? Give advantages and disadvantages of sleeve ejection.
- (b) Discuss the function of bench fitting in mould making.
- (c) Discuss split core and its importance.

(6,3,3=12)

Q.6.

- (a) Describe transfer molding process in details and compare advantage and disadvantage over compression moulding.
- (b) Describe the processing conditions and material selection for insulation cables.
- (c) Discuss the criteria and processing conditions for television cabinet. (4,4,4=12)

Q.7.

Write note on any three

- (a) Mould making materials.
- (b) Extrusion Blow Molding.
- (c) Advantages of local inserts.
- (d) Angled Actuation of split core. (3x4=12)