

SIXTH SEMESTER DIPLOMA EXAMINATION IN POLYMER
TECHNOLOGY—MARCH, 2013

PLASTIC PRODUCTS

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define stress concentration on plastic products design.
2. What are the factors to be considered, while designing plastic products ?
3. Write the properties of injection moulding grade PVC and polystyrene.
4. Define water harmer on PVC pipe.
5. What is mechanical flocking ?

(5x2=10)

PART—B

(Maximum marks : 30)

II Answer *any five* questions. Each question carries 6 marks.

1. Explain the physical and chemical properties of fillers and their performance on plastic product design.
2. Explain the requirements of injection moulds for plastic products.
3. Explain thermoforming process with an example of product.
4. Classify different types of PVC pipes and write the applications.
5. Name an extruded product made from PET and explain the process.
6. Explain the advantages and disadvantages of plastic gears.
7. Explain the casting of PMMA sheets.

(5x6=30)

PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each question carries 15 marks.)

UNIT – I

- III (a) Explain the processing limitations on plastic product design in injection moulding and extrusion. 8
- (b) Describe the steps involved in the plastic product design. 7

OR

	Marks
IV (a) Explain the rheological behaviour of plastics on product manufacturing.	8
(b) Explain the environmental impact of plastic proliferation.	7
UNIT – II	
V (a) Explain the extrusion blow moulding process with sketches.	8
(b) Write the advantages and disadvantages of rotational moulding. Which materials are suited for rotational moulding ?	7
OR	
VI (a) Explain the production of water tanks with sketches.	8
(b) Explain the components of basic injection machine moulds.	7
UNIT – III	
VII (a) Write a formulation for the production of PVC pipe and explain the parts of PVC pipe die with a neat sketch.	8
(b) Write the cooling methods used in calendaring rolls and explain the production of unsupported sheets by calendaring.	7
OR	
VIII (a) Compare PVC extruder and PE extruder with line diagrams.	8
(b) Explain the production of PVC pipe with typical formulation.	7
UNIT – IV	
IX (a) Explain the features of different types of compression moulds for plastic product with suitable sketches.	8
(b) Explain the methods of flow coating on plastic products.	7
OR	
X (a) Differentiate the processes compression and transfer moulding of plastic products.	8
(b) Explain the theory of lazer marking on plastic products.	7
