Scheme – I

Sample Question Paper

Program Name : **Diploma in Plastic Engineering**
Program Code : **PS**
Semester : **Third**
Course Title : **Plastic Processing Techniques**
Marks : **70**

22353

Time: 3 Hrs.

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following. **10 Marks**

a) Define extrusion.

b) List out any four moulding materials used in blow moulding.

c) Define hot gas welding process.

d) Draw a labeled sketch of corona discharge method.

e) State the needs of solvent cleaning method.

f) State any four applications of foam.

g) State any two important properties of polyurethane foam.

Q.2) Attempt any THREE of the following. **12 Marks**

a) Describe the pipe extrusion method with a labeled sketch.

b) Describe the continuous extrusion method with a labeled sketch.

c) Explain the hot plate welding method with a neat labeled sketch.

d) Explain the open and closed cell foams with a labeled sketch.

Q.3) Attempt any THREE of the following. **12 Marks**

a) Describe the wire and cable coating method with a labeled sketch.

b) Select the process for manufacturing for a sheet of 0.4mm thick and 300 mm wide with calcium carbonate filler and polypropylene plastics. Justify your answer.

c) Describe the stretch blow moulding process with sketch.

d) Describe the friction welding method with sketch.

Q.4) Attempt any THREE of the following. 12 Marks

a) Select the suitable process for the manufacture of a granule of 3mm diameter and 4mm long with polyethylene waste material. Justify your answer.

b) Explain the plastics moulding compound selection procedure and required material properties for the production of a shampoo bottle with justification.

c) Select the material and process for manufacture of 5 litre oil can with labeled sketch and justification.

d) Select the suitable process for the sealing of film of 0.10mm thick and 20mm wide. Justify your answer with sketch.

e) Select the process for bonding polyethylene lid to the polyethylene container. Justify your answer with sketch.

Q.5) Attempt any TWO of the following. 12 Marks

a) Describe the vacuum metallizing process and electrolytic plating process.

b) Select the suitable method to improve the bondability of moulded polypropylene shampoo bottle of 200 ml capacity with its lid. Justify your answer.

c) Select the material and process for manufacture of auto interior seating with justification.

Q.6) Attempt any TWO of the following. 12 Marks

a) Suggest methods for the coating of car bumper and headlamp bezels. Also suggest the plastic material to coat these objects. Justify your answer.

b) Suggest a method for the production of a 1 kg carry bag with 0.01mm thickness. Also suggest a plastic material for the production of same application.

c) Select the material, processing parameters and process for the manufacture of 900ml lubricant containing can with justification and labeled sketch.

Scheme – I

Sample Test Paper - I

Program Name : **Diploma in Plastic Engineering**
Program Code : **PS**
Semester : **Third**
Course Title : **Plastic Processing Techniques**
Marks : **20**

22353

Time: 1 Hour

Instructions:

(1) All questions are compulsory.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data if necessary.

(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. **08 Marks**

a) Define extrusion. State any two applications of extrusion.

b) Draw a labelled sketch of hopper and barrel of an extruder.

(c) State two important functions of breaker plate and screen pack.

(d) State any four plastic materials used in blow moulding process.

(e) Define blow ratio and hoop ratio.

f) State any four applications of blow moulding process.

Q.2 Attempt any THREE. **12 Marks**

a) Describe the working of an extruder.

b) Compare any four points between corotating and counterrotating twin screw extruder.

c) List out any two defects observed in extrusion process. Suggest their causes and remedies.

d) Describe the principle of blow moulding with a labelled sketch.

e) Explain the effect of process parameters on the quality of blow moulded product.

f) Select the material and process for manufacture of a 2 litre container with justification and labelled sketch.

Scheme – I

Sample Test Paper - II

Program Name : **Diploma in Plastic Engineering**
Program Code : **PS**
Semester : **Third**
Course Title : **Plastic Processing Techniques**
Marks : **20**

22353

Time: 1 Hour

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. **08 Marks**

a) State the types of foam and define them with labeled sketch.

b) State any two important properties of polyurethane foam.

c) State the need of solvent cleaning method.

d) Draw a labeled sketch of flocking method.

e) State the purpose of finishing process.

f) Define adhesive and adherend.

Q.2 Attempt any THREE. **12Marks**

a) Describe the working of high frequency welding.

b) Describe the ultrasonic welding process with a labeled sketch.

c) Describe the dip coating method.

d) Explain the flame treatment method.

e) Explain the method of manufacturing of polystyrene foam.

f) State any four important properties of polystyrene foam.