22551

23124

3 Hours / 70 Marks Seat No. | | | | | | | | |

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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

(a) Enlist any four engineering plastics.

(b) State any two properties of plastic materials to be considered for commodity applications.

(c) Define thermosetting plastics.

(d) State any four design limitations.

(e) Enlist any four materials processed in injection moulding.

(f) Define long term testing of plastics.

(g) Define fatigue of plastics.

2. Attempt any THREE of the following : **12**

(a) Enlist any four thermosets with their two properties of each.

(b) State any four properties of plastic materials to be considered in engineering applications.

(c) Explain the importance of appearance and tolerance in designing.

(d) Explain with neat figure the compression moulding.

3. Attempt any THREE of the following : **12**

(a) State the selection criteria of plastic materials used to storage of heated liquid.

(b) Explain the factors to be considered for designing inside sharp corners of plastic product.

(c) Enlist four advantages and four limitations of rotomoulding process.

(d) Describe the test method for measurement of creep failure of plastic.

4. Attempt any THREE of the following : **12**

(a) Suggest and explain the method to avoid the U.V. degradation of plastic product.

(b) Explain the procedure for cost estimation of bearings made up of nylon-6.

(c) Compare flow moulding and rotomoulding with respect to product thickness and production rate.

(d) Explain impact test for plastic products.

(e) Explain the general fracture behaviour of plastics.

5. Attempt any TWO of the following : **12**

(a) Draw neat labelled sketch of structural foam. List its four properties and four applications.

(b) Explain the design features for following :

(i) Gate size and location

(ii) Tapers or draft angles

(c) Explain with neat figure the isochronous and isometric curve for plastics.

6. Attempt any TWO of the following : **12**

(a) Explain mechanical and electrical properties to be considered for design of plastic product.

(b) Describe with neat figure the extrusion process for plastic product.

(c) Explain pseudo-elastic design method for plastics.
