17548

16172

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

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

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Abbreviations used convey usual meaning.

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

Marks

1. Attempt any FIVE of the following: **20**

a) List four functions of ASTM and BIS.

b) Describe with a diagram bulk density measurement test of a plastic material.

c) (i) Describe test procedure for brittleness temperature measurement. 3

(ii) What is the significance of the test? 1

d) Define the terms :

(i) Surface resistivity and

(ii) Volume resistivity

e) Describe carbon arc lamp test for plastic materials.

P.T.O.

Marks

f) Explain cup test for thermosets with a diagram.

g) Define 'Oxygen index'. Explain its importance.

2. Attempt any TWO of the following: **16**

a) (i) Draw a labelled diagram of a test specimen for flexural test. 3

(ii) Describe its test procedure. 5

b) Describe test procedure and effect of test variables for heat deflection temperature measurement of a plastic.

c) (i) Define haze. 1

(ii) Explain with a diagram, the test method for measurement of haze. 7

3. Attempt any TWO of the following: **16**

a) (i) Explain with a diagram the testing of dielectric strength of a plastic 6

(ii) State the factors, which can affect the results. 2

b) Describe with a diagram, the test procedure for exposure of a plastic to U.V. lamp.

c) Describe flammability test in vertical and horizontal position for a plastic material.

4. Attempt any TWO of the following: **16**

a) (i) Describe TGA test with a figure of thermogram. 6

(ii) State applications of TGA. 2

b) Explain the following:

(i) Rockwell hardness test

(ii) Durometer hardness test

c) (i) Define specular gloss. 1

(ii) Explain with a diagram, the procedure for measurement of specular gloss. 7

Marks

5. Attempt any TWO of the following: **16**

a) (i) Explain with a diagram, the method to test dielectric constant of a plastic. 6

(ii) State factors, which affect results of the test. 2

b) (i) What does the abbreviation, ESCR. stand for? 1

(ii) Describe the test specimen and method to check ESCR of a plastic. 5

c) (i) Describe drop impact test.

(ii) State test variables and limitations.

6. Attempt any FOUR of the following: **16**

a) Explain need and importance of testing.

b) (i) State importance of 'arc resistance' of a plastic. 1

(ii) Draw a diagram of arc resistance tester. 3

c) Explain the test for measurement of stain resistance of a plastic.

d) Describe spiral mold test for thermosets.

e) Explain quick burst test for a rigid plastic pipe.

f) Write test procedure for MFI with a sketch.

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