

22350

11819

3 Hours / 70 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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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) Define destructive and nondestructive testing.
 - b) Draw neat labelled sketch of tensile test specimen.
 - c) Define Heat Deflection Temperature (HDT).
 - d) State significance of TGA.
 - e) Define dielectric constant of plastic material.
 - f) Enlist any four solvents used for immersion test of plastic materials.
 - g) Enlist any four staining reagents.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain with neat figure the bulk density measurement test for plastic material.
 - b) Identify the factors and its effect on apparatus and compressive strength of plastic.
 - c) Explain with neat figure the spiral mould test for thermoset.
 - d) Describe with neat figure the test procedure for measurement of haze by haze meter.
- 3. Attempt any THREE of the following:** **12**
- a) State the full form of ASTM, IS, ISO and BIS. List four functions of any one of the above.
 - b) Explain with neat figure the dart impact test for plastic film.
 - c) Describe the apparatus and test procedure for measurement of vicat softening point of plastic material.
 - d) Explain with neat figure the measurement of dielectric strength of plastic material.
- 4. Attempt any THREE of the following:** **12**
- a) Explain abrasion resistance test for plastic specimen.
 - b) Describe oxygen index test for plastic material with neat figure.
 - c) Explain with neat figure the arc resistance test for plastic material.
 - d) Explain volume resistivity and surface resistivity with respect to insulating material.
 - e) Describe the environmental stress cracking resistance test.

- 5. Attempt any TWO of the following: 12**
- a) Draw and explain stress-strain curves of plastic materials based on their different properties.
 - b) Explain with neat figure the test for measurement of thermal conductivity of plastic material.
 - c) Suggest and describe the test for measurement of specular gloss of plastic material with neat figure.
- 6. Attempt any TWO of the following: 12**
- a) Suggest and describe hardness test for measurement of hardness of soft and hard material.
 - b) Describe the test for measurement of melt flow index (MFI) of plastic material with neat figure and state its significance.
 - c) Explain with neat figure the exposure of plastics to u.v. lamp test.
-