

17548

21718

3 Hours / 100 Marks

Seat No.

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

Marks

- 1. Answer any FIVE of the following: 20**
- a) Explain the test method for measurement of specific gravity of a plastic sheet.
 - b) Explain stress-strain curve for different plastic materials.
 - c) Define Vicat softening temperature. Describe the test procedure for measurement of it.
 - d) Draw a labelled diagram of parallel beam glossmeter.
 - e) Explain with a diagram the dielectric constant measurement test of plastic product.
 - f) Describe test procedure for resistance of plastic to fungi.
 - g) Explain cup test for thermoset with a diagram.

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- 2. Answer any TWO of the following:** **16**
- a) Explain tensile test method for plastic material using test specimen and test procedure.
 - b) (i) Explain with a labelled diagram the test for exposure of plastic to u.v. lamp. 6
(ii) Why is the test conducted? 2
 - c) (i) Explain with a diagram the oxygen index test for plastic material. 6
(ii) What does the 'oxygen index' represent? 2
- 3. Answer any FOUR of the following:** **16**
- a) Write test procedure for acetone immersion test of plastic material. What will the test indicate?
 - b) Define the term 'specification'. Explain its importance.
 - c) Explain with a diagram the test method for measurement of thermal conductivity of a plastic material.
 - d) Describe the terms surface and volume resistivity.
 - e) Explain the test procedure for resistance of plastic to bacteria.
 - f) Explain spiral mold test for thermoset with a diagram.
- 4. Answer any TWO of the following:** **16**
- a) (i) Explain with a diagram the testing of dielectric strength of a plastic material. 6
(ii) State any four factors which affects the test results. 2
 - b) Describe apparatus used, test specimen and test procedure for compression test of a plastic material.
 - c) (i) Define haze. Draw schematic figure of a haze meter.
(ii) Describe test procedure for measurement of haze for a plastic material.

- 5. Attempt any FOUR of the following:** **16**
- a) What do the abbreviations ASTM, BIS and ISO stands for?
List any four functions of ASTM.
 - b) Define 'Creep'. Explain its significance.
 - c) Define heat deflection temperature. Write the test procedure for measurement of it.
 - d) Draw a well labelled DSC thermogram for a polymer.
 - e) Explain the terms: gloss and luminous transparency of a plastic material.
 - f) Explain quick burst strength test for a rigid pipe.
- 6. Attempt any TWO of the following:** **16**
- a) (i) Explain with a diagram the arc resistance test of plastic material. 6
 - (ii) Explain significance of arc resistance. 2
 - b) Explain environmental stress-cracking resistance test for a plastic material with a diagram of test sample, specimen holder and test assembly.
 - c) Explain with a diagram, the flammability for a plastic in verticle position.
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