

313356

12526

3 Hours / 70 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. Attempt any FIVE of the following :** **10**
- a) Write any two importance of testing.
 - b) Mention any four name of standards.
 - c) Define compressive strength.
 - d) Define thermal conductivity.
 - e) Enlist various electrical properties used for polymer components.
 - f) State importance of weathering test methods.
 - g) Write any two significance of immersion test method.

P.T.O.

- 2. Attempt any THREE of the following : 12**
- a) Explain with example – The need of testing in plastics material analysis.
 - b) Describe with neat figure the generated stress - strain curve.
 - c) Explain with neat sketch of durometer hardness test.
 - d) Describe the test method to measure the dielectric strength of polymer sample with neat figure.
- 3. Attempt any THREE of the following : 12**
- a) Explain with neat figure the bulk density measurement test.
 - b) Describe test specimen, instrument test procedure and factors are affecting the test results for flexural strength test.
 - c) Explain with neat sketch of melt flow index test.
 - d) Explain with neat sketch the refractive index test for polymer sample.
- 4. Attempt any THREE of the following : 12**
- a) Explain with neat sketch the abrasion resistance test method.
 - b) Explain vicat softening point test for polymer materials.
 - c) Explain volume resistivity and surface resistivity to assess insulation quality in materials.
 - d) Explain with neat sketch the environmental stress cracking resistance.
 - e) Elaborate following terms :
 - i) Resistance to fungi
 - ii) Resistance to bacteria

- 5. Attempt any TWO of the following :** **12**
- a) Describe test specimen, instrument, procedure and factors affecting on the test results for tensile strength test.
 - b) Describe principle, significance and working of Thermo Gravimetric Analysis (TGA).
 - c) Explain with neat figure the test to measure the dielectric constant of polymer sample.
- 6. Attempt any TWO of the following :** **12**
- a) Describe with neat sketch, test specimen, instrument, procedure along with factors affecting on the test results for Izod impact strength.
 - b) Describe with neat sketch of following rheological test methods to assess the flow behaviour of materials :-
 - i) Spiral mold test
 - ii) Cup flow test
 - c) Explain UV lamp test with neat figure used for polymer material for outdoor applications.
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