

313356

24225

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (5) Abbreviations used are their usual meanings.

Marks

1. Attempt any FIVE :

10

- (a) Define destructive and non-destructive testing.
- (b) Define density. State its unit.
- (c) Define stress and strain.
- (d) Define thermal conductivity.
- (e) Define dielectric strength.
- (f) State dissipation factor.
- (g) Enlist four tests which measure the chemical properties of polymer material.

2. Attempt any THREE :

12

- (a) Define specification and standard. State the full form of ASTM, BIS, IS and ISO.
- (b) Explain with neat figure the general stress-strain curve.
- (c) Describe vicat softening point test with neat figure.
- (d) Explain with neat figure the dielectric constant measurement test.



- 3. Attempt any THREE :** **12**
- (a) Describe test procedure for abrasion resistance test with neat figure.
 - (b) Describe heat distortion temperature test with neat figure.
 - (c) Describe with neat sketch, the test procedure of Refractive index.
 - (d) Describe immersion test with neat figure.
- 4. Attempt any THREE :** **12**
- (a) Explain with neat figure the bulk density measurement method.
 - (b) Explain with neat figure the procedure for dart impact test.
 - (c) Explain with neat figure the spiral mold test.
 - (d) Describe test procedure for melt flow index test with neat figure.
 - (e) Describe environmental solvent cracking resistance test with neat figure.
- 5. Attempt any TWO :** **12**
- (a) Explain with neat figure the test procedure for compressive strength test.
 - (b) Describe test procedure for Differential Scanning Calorimeter (DSC) measurement test with neat figure.
 - (c) Explain with neat sketch the test procedure for tensile strength test, also write specimen details & factors affecting on the test.
- 6. Attempt any TWO :** **12**
- (a) Explain with neat sketch the test method for flexural strength test, also mention specimen detail, instrument and factors affecting on the same.
 - (b) Explain with neat figure the arc resistance test for polymer material.
 - (c) Explain with neat figure the test method for exposure of polymers to UV lamp.
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