

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – WINTER • 2014****Subject Code: 172305****Date: 29-11-2014****Subject Name: Plastics Testing and Instrumental Analysis****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain in details the Basic concepts of testing-specifications and Standards for perform the testing of plastics. **07**
- (b) Define Proportional Limit, Secant Modulus & Yield Point. Show and explain the stress-strain behavior of various types of plastic material. **07**
- Q.2** (a) What is flexural strength? What are the factors influence the flexural strength of plastic material? Provide brief steps for performing flexural test. **07**
- (b) Write short notes on **07**
- | | |
|-----------|--------------------------|
| 1. Strain | 2. Modulus of Elasticity |
| 3. Stress | 4. Toughness |
- OR**
- (b) Write short notes on **07**
- a) Creep b) Stress Relaxation c) Compression Test
- Q.3** (a) Define tensile strength? What are the factors influence the tensile strength of plastic material? Provide brief steps for performing tensile test. **07**
- (b) Define MFI. Explain how this test is carried out for plastics material along With its significance? **07**
- OR**
- Q.3** (a) Define VSP. Explain how this test is carried out for plastics material along With its significance? **07**
- (b) Explain all factors that affecting the Impact Strength of plastic material. **07**
- Q.4** (a) Define HDT and explain the test procedure and its significance of the test. **07**
- (b) Define Glass transition temperature (Tg) and explain factors affecting Tg. **07**
- OR**
- Q.4** (a) Define and explain the term Arc Resistance. Explain procedure to Determine Arc Resistance of Plastics with neat sketch. **07**
- (b) Define Thermal Conductivity? How do you determine it for plastics by Guarded hot plate method? **07**
- Q.5** (a) Explain the Term Hardness. List the Hardness Tests used for Plastics. Explain Rockwell Hardness Test. **07**
- (b) Explain Flammability test for non rigid plastic & Oxygen index test **07**
- OR**
- Q.5** (a) Explain Thermo-mechanical Analysis in details with an example. **07**
- (b) Explain Accelerated Weathering test with an example. **07**
