

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER 2013****Subject Code: 162302****Date: 29-11-2013****Subject Name: Plastic Structure Property and Relationship****Time: 02:30 pm to 05:00 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 about Hydrogen Bonding and its effect on the properties of polymer. **07**
(b) Explain about Tacticity and its effect on the properties of polymer. **07**
- Q.2** (a) Explain about effect of Plasticizer and Molecular weight on Tg of polymer. **07**
(b) Explain How the structure of polymer affects the chemical properties of polymer? **07**
- OR**
- (b) Explain about effect of additives on the mechanical properties of polymer. **07**
- Q.3** (a) Explain How the Linearity, branching and cross-link of polymer structure affect the properties of polymer? **07**
(b) Discuss effect of Oxygen on polymer properties. **07**
- OR**
- Q.3** (a) Discuss about Bond strength and its effect on thermal stability of polymer. **07**
(b) (i) Why PVC is self –extinguishing? Explain **07**
(ii) Discuss effect of crystallinity on polymer structure.
- Q.4** (a) Discuss about C-H bond and its effect on properties of polymer. **07**
(b) Discuss about structure and properties of Polyamide. **07**
- OR**
- Q.4** (a) What is Tg? List and Explain factors affecting Tg. **07**
(b) Discuss effect of Chlorine (Cl) on polymer properties. **07**
- Q.5** (a) Discuss about structure and properties of PTFE. **07**
(b) Compare: Crystalline Polymer with Amorphous Polymer **07**
- OR**
- Q.5** (a) Write chemical structure of Polycarbonate(PC).Why PC is transparent?Explain **07**
(b) Discuss about structure and properties of Polyacetal. **07**
