

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 162303****Date: 15/05/2012****Subject Name: Plastics Process Instrumentation & Process Control****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 the functional elements of an instrument with block diagram. **07**
(b) Explain strain gauge with neat sketch. **07**

- Q.2** (a) Explain various static characteristics of an instrument in brief. **07**
(b) With neat sketch explain diaphragm pressure transducer. **07**

OR

- (b) Explain watt meter method for measurement of power. **07**

- Q.3** (a) Write short note on thermocouples. **07**
(b) Explain Eddy Current Tachometer with suitable sketch. **07**

OR

- Q.3** (a) With suitable diagram explain Radiation Pyrometer. **07**
(b) Explain Capacitive type Thickness Measurement Method. **07**

- Q.4** (a) Write a short note on PID Injection pressure control. **07**
(b) Explain process control technique during mold filling & packing phase. **07**

OR

- Q.4** (a) What is meaning of On-Machine monitoring. Explain On-Machine monitoring for Injection molding process. **07**
(b) With suitable sketch explain open loop control system of screw travel speed in injection molding. **07**

- Q.5** (a) Explain in brief - Barrel temperature measurements & Melt temperature measurements in extrusion process. **07**

- (b) Make a comparison sheet for various pressure transducers used in extrusion process. **07**

OR

- Q.5** (a) Explain Radiation method for Extrudate thickness measurement. **07**

- (b) Explain On-Off temperature control & Proportional temperature control with suitable graphs. **07**