## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

S T	ubje ime:	ect Code: 2162303 Date: 22/10/2016 ect Name: Plastic Process Instrumentation and Process Control 10:30 AM to 01:00 PM Total Marks: 70 etions:	
		<ol> <li>Attempt all questions.</li> <li>Make suitable assumptions wherever necessary.</li> <li>Figures to the right indicate full marks.</li> </ol>	
Q.1	(a) (b)	Explain the block diagram of instrumentation process with neat sketch. Define: Accuracy, Precision, Repeatability, Dead Zone, Reproducibility, range & Drift.	07 07
Q.2	(a) (b)	Explain Open loop & closed loop control system with neat diagrams.  Define and describe static error, systematic error, random error and source of errors.	07 07
	<b>(b)</b>	OR List the types of pressure transducers and explain the diaphragm pressure transducers with neat diagram.	07
Q.3	(a) (b)	What are the different methods of Temperature measurement? Explain about Resistance Thermometer.  Explain about the construction and working of a strain – gauge pressure transducer with the help of a neat sketch. What are the advantages & disadvantages?	07 07
Q.3	(a) (b)	OR What are the different methods of measure Extrudate thickness? Explain about LVDT in detail. Explain Capacitive type Thickness Measurement Method.	07 07
Q.4	(a) (b)	Define process control. Explain about the importance of Process control. Write a short note on Proportional & Proportional Integral controllers.  OR	07 07
Q.4	(a) (b)	What do you mean by Process control and explain need of instrumentation? Write a short note feedforward & cascade control system.	07 07
Q.5	(a)	What are the different parts of Injection molding machine? Explain its functions.	07
	<b>(b)</b>	Write short note on thermocouples.  OR	07
Q.5	(a) (b)	Explain open loop & closed loop transfer function. Write a short note of microprocessor based controllers.	07 07

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