Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING - SEMESTER - IV-EXAMINATION - WINTER 2015

Subject Code: 3342305	Date:	11/12/2015
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Subject Name: Process Instrumentation Maintenance

Time: 02:30 PM TO 5:00 PM Total Marks: 70

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- 1. Attempt all questions.
- 2. Make Suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- 4. Use of programmable & Communication aids are strictly prohibited.
- 5. Use of only simple calculator is permitted in Mathematics.
- 6. English version is authentic.

Q.1		Answer any seven out of ten.	14
C	1.	Define: 1) calibration 2) fidelity	
	2.	Define: 1) sensitivity 2) accuracy	
	3.	Define: 1) Precision 2) Repeatability	
	4.	Define: 1) Servo-mechanism 2) Regulator	
	5.	Define: 1) wear 2) corrosion	
	6.	Write the freezing point and boiling points of Kelvin and Rankien temperature scales.	
	7.	Define: 1) Range 2) Resolution	
	8.	List various solid lubricants.	
	9.	Define 1) control system 2) close loop control system	
	10.	Draw neat and labeled block diagram of close loop control system.	
Q.2	(a)	List various errors in instrument and explain any two. OR	03
	(a)	Draw block diagram of instrumentation system.	03
	(b)	With neat sketch, explain construction, working, advantages and disadvantages of LVDT.	07
		OR	
	(b)	With neat sketch, explain construction, working, advantages and disadvantages of RTD.	07
	(c)	With block diagram, explain open loop control system OR	04
	(c)	Write short note: PLC	04
Q.3	(a)	Describe wear reduction techniques.	03
		OR	
	(a)	Explain types of wear.	03

	(b)	Write advantages and disadvantages of D.C servomotor. OR	03
	(b)	Write advantages and disadvantages of A.C servomotor.	03
	(c)	List various types of maintenances and Explain any TWO. OR	04
	(c)	Explain various fault finding methods.	04
	(d)	Explain maintenance of an Injection moulding machine. OR	04
	(d)	Explain maintenance of an extruder.	04
Q.4	(a)	Describe various corrosion prevention techniques. OR	03
	(a)	Define accident. How we can prevent accidents? Explain.	03
	(b)	List various types of corrosion. Explain any one in detail. OR	04
	(b)	Explain maintenance of hydraulic & pneumatic systems.	04
	(c)	With neat sketch, explain construction, working, advantages and disadvantages of thermocouple.	07
Q.5	(a)	List various personal protective equipments and explain any two.	04
	(b)	Write the maintenance procedure of moulds.	04
	(c)	Discuss management responsibilities for safety.	03
	(d)	Write short note: "lubrication methods" ***********************************	03