Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER - III • EXAMINATION - WINTER • 2013

Su	bject	code: 731001 Date: 26-11-2013	
Su	bject	Name: Low Temperature measurement and Instrumentation	
Ti	me: 1	0.30 am – 01.00 pm Total Marks: 70	
In	struc	tions:	
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	Explain in detail about significance of measurement and instrumentation. What do you mean by static and dynamic characteristics of instruments? Discuss in detail.	07 07
Q.2	(a) (b)	Short note on calibration of Transducers. Classify the transducers in detail. State the Physical Laws.	07 07
	(I -)	OR	07
	(b)	Discuss in detail with neat sketch about Temperature sensors.	07
Q.3	(a) (b)	Short note on calibration of Liquid level measuring instruments. Discuss in detail with neat sketch about cryogenic liquid level measuring technique.	07 07
		OR	
Q.3	(a)	Discuss in detail with neat sketch about density measurement technique using radiation.	07
	(b)	List down the various methods of cryogenic fluid flow measurement. Also Discuss in brief about Laminar flow and turbulent flow.	07
Q.4	(a)	Short note on variable area flow meters.	07
	(b)	Discuss in detail with neat sketch about Turbine flow meters. OR	07
Q.4	(a)	Discuss in detail with neat sketch about vacuum measurement techniques.	07
	(b)	Discuss in detail with neat sketch about the concept thermometry for low temperature. Classify all the technique in brief.	07
Q.5	(a)	Short note on fibre optics sensors	07
	(b)	How Electric noise is measured? Discuss the technique in brief.	07
o -		OR	
Q.5	(a)	Discuss in detail with neat sketch about Ultrasonic Non-destructive testing methods.	07
	(b)	What do you mean by Non-destructive testing? Discuss the concept in brief. Classify all the types of Non-destructive testing in brief.	07
