Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC 2ND Semester Examination – July- 2011

Subject code: X21903

Subject Name: Mechanical Measurement &Metrology

Date:16/07/2011 **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 Tyler Hobson Surface roughness meter with neat sketch	**07**
	(b)	Explain the process of calibration of linear measuring instrument using slip gauge with suitable example	**07**
Q.2	**(a)**	Explain elements of Measurement. Explain them in brief	**07**
	(b)	What is the use of telescopic gauge? Explain its constructional features and applications in the industries.	**07**
		OR	
	(b)	Why sign bar is not suitable to measure angle more than 45^0? Derive an equation to prove the same	**07**
Q.3	**(a)**	Explain two wire method to find effective diameter of screw thread.	**07**
	(b)	Describe rolling test to find error in gear with suitable example.	**07**
		OR	
Q.3	**(a)**	Draw neat sketch of screw thread gauge and explain in detail with suitable example.	**07**
	(b)	Describe any different test of alignment to be performed on lathe machine with neat sketch.	**07**
Q.4	**(a)**	Describe dynamic characteristics of measuring instruments in detail	**07**
	(b)	Describe different types of pressure measuring instruments in brief	**07**
		OR	
Q.4	**(a)**	Explain different instruments used to measure speed.	**07**
	(b)	Explain working principle of rope brake dynamometer with neat sketch	**07**
Q.5	**(a)**	Explain working principle of thermocouple with neat sketch	**07**
	(b)	Describe manometers with neat sketch	**07**
		OR	
Q.5	**(a)**	Explain working principle of pyrometer with neat sketch	**07**
	(b)	Explain different types of errors in measuring instruments.	**07**

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