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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV(New) • EXAMINATION - WINTER 2016

Subject Code: 2142503 Date:18/11/2016

Subject Name: Metrology and Measurement

Time:02:30 PM to 05:00 PM Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

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Q.1		Short Questions	14
	1	Write down any One function of Micrometer.	
	2	Write down any One function of Slip gauge.	
	3	Write down any One function of Bevel Protractor.	
	4	Write down any One function of Sine Bar.	
	5	Write down any One function of Outside caliper.	
	6	Write down any One function of Telescopic Gauge.	
	7	Write down any One function of Radiation Pyrometer.	
	8	Write down any One function of Thermometer	
	9	Write down any One function of Stroboscope.	
	10	Write down any One function of Thermo Couple	
	11	Write down any One function of Tomlinson Surface recorder.	
	12	Write down any One function of V-Block.	
	13	Write down any One function of Profilometer.	
	14	Write down any One function of Dial Indicator.	
Q.2	(a)	Enlist various linear measuring instruments.	03
	(b)	Explain various types of errors in measurement.	04
	(c)	Explain the Generalized measurement system with neat sketch.	07
		OR	
	(c)	Explain the working principle of Vernier Caliper with neat sketch.	07
Q.3	(a)	Enlist various Angular measuring instruments.	03
	(b)	Explain the Accuracy and Precision with neat sketch.	04
	(c)	Explain the working of sine bar with neat sketch.	07
		OR	
Q.3	(a)	Enlist various surface roughness measuring instruments.	03
	(b)	Explain the working of Thermo Couple with neat sketch.	04
	(c)	Explain working of Taylor Hobson Talysurf with neat sketch.	07
Q.4	(a)	Enlist various Temperature measuring instruments.	03
	(b)	Draw various types of threads with thread angles.	04
	(c)	Write Short note on Tool Maker's Microscope.	07
		OR	
Q.4	(a)	Enlist various Speed measuring instruments.	03
	(b)	Enlist the types instrumental errors	04
	(c)	Explain the Gear tooth vernier caliper with neat sketch.	07
Q.5	(a)	Enlist the types of comparators.	03
	(b)	Explain the function of dynamometer.	04
	(c)	Write short note on Parkinson's Gear Tester with neat sketch.	07
		OR	
Q.5	(a)	Enlist different types of Gears.	03
	(b)	Explain the Screw thread gauge with neat sketch.	04
	(c)	Explain the measurement of effective diameter by Two wire method.	07