CBCS SCHEME

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BAU402

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024
Mechanical Measurement and Metrology

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With a block diagram, explain generalized measurement system.	10	L1	CO1
	b.	Briefly explain different types of errors.	10	L2	CO1
		OR			
Q.2	a.	Briefly explain the following terms with examples: (i) Accuracy (ii) Hysteresis (iii) Sensitivity (iv) Repeatability	10	L2	CO1
	b.	Illustrate the working of piezoelectric transducer with a neat sketch.	10	L2	CO1
		Module – 2			
Q.3	a.	With a schematic diagram, explain imperial standard yard, line and end standard.	10	L1	CO2
	b.	Classify and explain different types of fits with neat sketches.	10	L2	CO2
		OR			
Q.4	a.	Compare hole basis and shaft basis system with the help of neat sketches.	10	L2	CO2
	b.	With a neat sketch, explain international prototype meter.	10	L2	CO2
		Module – 3			
Q.5	a.	Illustrate the working principle of a LVDT with the help of a neat sketch.	10	L1	CO3
	b.	Elaborate the working principle of a Zeiss ultra-optimeter.	10	L2	CO3
		OR			
Q.6	a.	Illustrate the working principle of a sine bar and how this can be used to measure taper angle of a bar.	10	L2	CO3
	b.	With a neat sketch, explain clinometers.	10	L1	CO3
		Module – 4			
Q.7	a.	With a neat sketch, explain proxy breaks dynamometer.	10	L2	CO4
	b.	Illustrate the working of analytical balance with necessary equations.	10	L2	CO4
		OR			
Q.8	a.	Illustrate the working of a ultrasonic flow meter with the help of neat sketch.	10	L1	CO4
	b.	Illustrate the working principle of a eddy current dynamometer with the help of a neat sketch.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain the law of thermocouple and illustrate the working principle of optical pyrometer.	10	L1	CO5
	b.	Elaborate the working principle of a Coordinate Measuring Machine (CMM).	10	L1	CO5
		OR			
Q.10	a.	With a neat sketch, explain McLeod gauge.	10	L2	CO5
	b.	Illustrate the working principle of a ionization gauge.	10	L2	CO5

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