O.P.Code:16ME326	R16	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Supplementary Examinations June-2024

METROLOGY & MEASUREMENTS

(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Define Maximum, Minimum Metal limits and Maximum, Minimum clearances with the help of neat sketches.	CO1	L1	6M
	b	Distinguish unilateral and bilateral tolerance system.	CO1	L4	6M
		OR			
2	a	Explain selective assembly.	CO1	L1	6M
	b	List out types of assembly systems? Elaborate interchangeability.	CO1	L6	6M
		UNIT-II			
3	a	Discuss about care of Snap Gauge, Screw Pitch Gauge, Feller Gauge	CO2	L6	6M
	b	Describe the principle involved in Michelson interferometer with a line diagram.	CO2	L1	6M
		OR			
4	a	Name the two types of ideal indicators, draw a simple diagram of dial indicator.	CO2	L2	6M
	b	Explain BIS symbols for indication of surface finish.	CO2	L1	6M
		UNIT-III			
5	a	Give details about three wire method of measuring effective diameter of screw threads.	CO3	L1	6M
	b	What are the errors and its causes in screw threads?	CO3	L1	6M
		OR			
6	a	Describe measurement of effective diameter with two wire method with neat sketch	CO3	L1	6M
	b	Evaluate (i) Outer diameter. (ii) Effective diameter. (iii) Core diameter. (iv) Pitch diameter.	CO3	L5	6M
		UNIT-IV			
7	a	Describe the principle of bonded and un bonded strain gauges.	CO4	L1	6M
	b	List the essential characteristics required for the backing material of a bonded strain gauge.	CO4	L1	6M
		OR			
8	a	Define strain rosette? Depending on the arrangement of strain gauges, list out strain rosettes.	CO4	L1	6M
	b	Elaborate Rectangular strain gauge rosette	CO4	L6	6M
		UNIT-V			
9	a	Define pyrometer? With neat sketch elaborate total radiation pyrometer	CO5	L1	6M
	b	What is formula for dead weight tester? Discuss the Dead Weight gauge in detail.	CO5	L1	6M
		OR			
10	a	Define manometer? Elaborate the U- tube Manometer in detail.	CO5	L6	6M
	b	List out common piezoelectric material? Sketch Piezoelectric pressure transducer with parts.	CO5	L1	6M

***** END *****