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## CBCS SCHEME

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## Third Semester B.E. Degree Examination, July/August 2021 **Mechanical Measurements and Metrology**

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

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ctic	1	a.	What is incusarement. Brief the significant	(05 Marks)
pra		b.	Explain the concept of Accuracy and Precision with a suitable example.	(05 Marks)
nal		C.	Differentiate the Line standard with End standards.	(05 Marks)
as 1		d.	A bar has to be calibrate having an actual length of 800.0006mm. It is used in the	e calibrate
eq		u.	on two bars A and B, each having the length of 400mm. When compared with	he bar the
eat			length of A and B bars was found to be shorter by 0.0003mm. In comparing the	har A was
es.			length of A and B bars was found to be shorter by 0.0005 min. In comparing the	(05 Marks)
oag ill b			bound 0.0005mm longer than B. Find the actual length of A and B.	(US Marks)
g blank pages. = 50, will be treated as malpractice.				
blar 50	2	a.	Define the following: i) Sensitivity ii) Calibration iii) Threshold	
gu 8			iv) Hysteresis v) Error.	(10 Marks)
aini 42+		b.	With a neat sketch, explain the International Prototype meter.	(10 Marks)
ems				
ne r	3	a.	List the important characteristics of a Comparator.	(05 Marks)
n th		b.	With a neat sketch, explain the working of any one type of Mechanical Comparato	or.
es c		0.		(10 Marks)
lin		C.	Write a note on Angle gauges.	(05 Marks)
oss		٠.		
ul ci	4	a.	Explain the principal of LVDT used in Electrical comparator.	(10 Marks)
ona d /c	7	b.	With a neat sketch, explain the working of an Solex Pneumatic Comparator.	(10 Marks)
liag an		υ.	With a fical sketch, explain the working of an object to see the	•
On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Any revealing of identification, appeal to evaluator and /or equations written eg, $42+8=50$ , will be	_	-	Explain the Primary and Secondary transducers.	(05 Marks)
dra alu	5	a.	Explain the Filliary and Secondary transducers.	(10 Marks)
illy o ev		b.	Explain the mechanical type pressure sensitive elements.	(05 Marks)
lsoi al te		C.	List the advantages of Electrical transducers.	(05 Marks)
upu				(10 Mowles)
con 1, al	6	a.	With a neat sketch, explain the working of a Clinometer.	(10 Marks)
ers, tior		b.	Explain the principles of Auto collimator.	(05 Marks)
swe		C.	Write a note on Optical flats.	(05 Marks)
r an				
our ide	7	a.	With a neat sketch, explain the platform balance.	(10 Marks)
ig y		b.	The state of the s	(10 Marks)
letir Iling		0.	2.17.11.11	
mpl	8	a.	Write a note on the following: i) Ultra - Violet recorder ii) Servo recorder.	(10 Marks)
y re	O	b.	1 1 1 D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(10 Marks)
On		U.	With a near sketch, explain the Trong state ag-	
1. 2.	0		Explain the Hole basis and Shaft basis system.	(05 Marks)
te :	9	-	contains the large and Docition tolerance?	(05 Marks)
Ž		b.	What is the meaning of Geometric tolerance and rosition tolerance.	(10 Marks)
tant		C.	With a neat sketch, explain the Optical pyrometer.	(10 1.141115)
Important Note: 1.				
Im	10	) E	xplain the following with respect to Strain measurements:	
		a.		(20 Mlva)
		d	Strain gauge materials e. Methods of strain measurements.	(20 Marks)