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Reg. No.:					

# **Question Paper Code: 95704**

## B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

#### Fifth Semester

### Mechanical Engineering

#### 19UME504- MEASURMENT AND INSTRUMENTATION

	19UME:	504- MEASURMENT	AND INSTRUMENT	IAHON		
		(Regulation	ons 2019)			
Dura	tion: Three hours			Maximum: 100 I	Marks	
		Answer ALI	Questions			
		PART A - (10 x	1 = 10 Marks)			
1.	The degree of closeness of the measured value of a certain quantity with its true value is known as					
	(a) Accuracy	(b) Precision	(c) Standard	(d) Sensitivity		
2.	The following is a lin	ne standard of measure	ment		CO1- U	
	(a) Measuring tape	(b) Slip gauge	(c) Micrometer	(d) End bars		
3.	The following is not	used to measure angles	S		CO2- U	
	(a) Bevel protectors	(b) Calibrated levels	(c) Clinometers	(d) Optical fl	ats	
4.	Which of the followi	ng is not used in makir	ng of sine bars?		CO2- U	
	(a) High carbon	(b) High chromium	(c) Corrosion resista	nt steel (d) Al	uminium	
5.	Which of the follow method?	ving is a contact type	of automated inspec	etion	CO3- U	
	(a) Inspection probe	(b) Laser scanning	(c) Electric field	(d) All of the	above	
6.	What is the accuracy	of present day co-ordi	nate measuring machi	ne?	CO3- U	
	(a) 10 microns	(b) 5 microns	(c)2 microns	(d) 1 micron		
7.	Odometer is used to	measure			CO4- U	
	(a) Threshold odours		(b) Composition o	of gases		
	(c) Suspended solids	in a gas	(d) Distances			
8.	Output of a bimetalli	c element will be	·		CO4- U	
	(a) Strain	(b) Pressure	(c) Displacement	(d) Voltage		

9.	A ty	pical data acquisiti	on system consis	sts of		COI- U
	(a) o	op amps	(b) sensors	(c) rectifiers	(d) transisto	rs
10	Trai	nsducer produces a				CO1- R
	(a) p	proportional current	t	(b) proportional voltage		
	(c) p	proportional resista	nce	(d) proportional power		
			PART – B	$(5 \times 2 = 10 \text{ Marks})$		
11	Def	ine the term reliabil	lity.			CO1- U
12	List	any four angular m	neasuring instrum	nents.		CO2- U
13	List	the various geomet	trical checks mad	le on machine tools.		CO3- U
14	Wha	at is the working pr	inciple behind st	rain gauges?		CO4- U
15	Exp	lain the basic requi	rements of the tra	ansducer?		CO4- U
			PART –	C (5 x 16= 80 Marks)		
16	(a)	Describe the struckers explain.	-	alized measuring system and	d CO1-U	(16)
	(b)	Discuss the different eliminated?	Or erent types of	errors and how they can be	e CO1-U	(16)
17	(a)	Explain with a no measurement.	eat sketch how a	a micrometer is used for linea	r CO2-U	(16)
	(b)	Evaloin in dotail	Or the verious m			(16)
	(b)	profile of a spur g		ethods used for checking the ting.	e CO2-0	(16)
18	(a)	• •		of three co-ordinate measuring advantages of CMM.	g CO3-U	(16)
	(b)	Describe in detail vision system.		on and application of Machine	e CO3-U	(16)
19.	(a)	Explain the neat methods of measure	•	ction and working of any two	o CO4-U	(16)
	(b)	Discuss the worki		ourdon tube pressure gauge.	CO4-U	(16)

20. (a) Describe the different criteria for selection of sensors for a CO5-U particular application. (16)

Or

(b) Describe with neat block diagram describe about the digital data, CO5-U acquisition System. (16)