

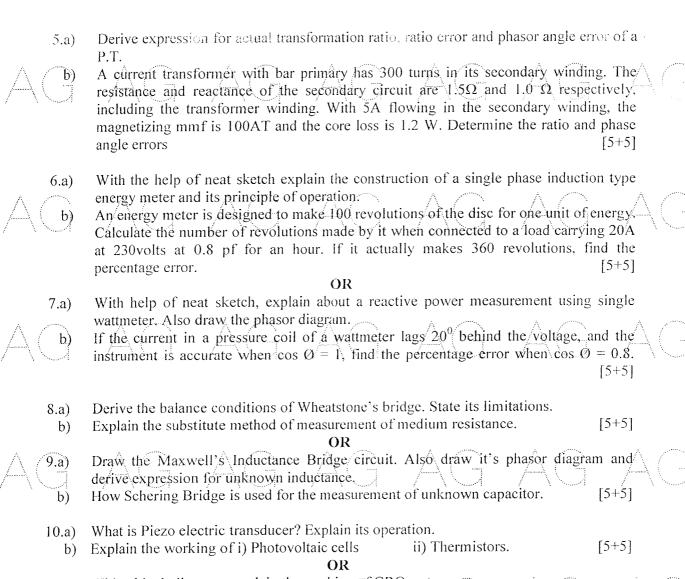
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Code	Mo. 126 / H	R13
Code No: 126AH JAWAHARLAL NEHRU TECHNOLG GICAL UNIVERSITY HYDERABAD		
	B. Tech III Year II Semester Examinations, May -	
	A ELECTRICAL AND ELECTRONICS INSTRUMENT	
$A(\tau)$	(Electrical and Electronics Engineering)	
Time	:: 3 hours	Max. Marks: 75
		17 12 1
Note	: This question paper contains two parts A and B.	
	Part A is compulsory which carries 25 marks. Answer all ques	
	consists of 5 Units. Answer any one full question from each unit	. Each question carries
$A \nearrow $	10 marks and may have a, b, c as sub questions.	
<u> </u>		
F A Statistic	PART - A	
		(25 Marks)
1.a)	List different types of static errors of a measuring instrument	[2]
b)	Calculate the value of the multiplier resistance on the 100 V rai	
0)	that uses a 100 mA meter movement with an internal resistance o	f 100Ω . [3]
\wedge	What do you mean by standardization?	$\triangle \bigcirc \bigcirc$
/_d)	What is a potentiometer and mention applications of it?	
e)	Justify: "Dynamometer type instrument is used as a wattmeter"	[2]
f)	Why lag adjustment is provided in induction type single phase en	
g)	Define dissipation factor?	[2]
h)	Explain the concept of the loss of charge method used in	
A 2000	resistance.	[3]
\triangle ($\frac{1}{12}$	Explain how to use a bonded resistance wire strain gauge. List the factors to be considered while selecting a transducer for a	given application [2]
/ / \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	List the factors to be considered white selecting a manadacet tot a	[3]
		[~]
	PART - B	
		(50 Marks)
()	De le de la constitue for a Mi instrument and montion for	annlinations. A con-
$\left(\begin{array}{c} 2.a \\ 1.a \end{array}\right)$	Develop the torque equation for a MI instrument and mention few A moving coil instrument having internal resistance of 50 s) indicates full scale
. 7\9	deflection with a current of 10 mA. How can it be made to work	k as (i) a voltmeter to
	read 100 V on full scale (ii) an ammeter of 1 A, on full scale?	[5+5]
	OR	[]
3.a)	Derive the equations for force and torque of an electrostatic instru	ments.
b)	Why is damping required for an electromechanical measuring	instrument? Explain
A sems	various damping systems,	_∧
Δ ($\dot{\rightarrow}$	$\Delta (A \Delta (A$	
/ \\4.a)	Draw the circuit diagram of a basic slide wire D.C. potentiometer.	
b)	A slide wire potentiometer of 150 cm in length has a resistance of	of 150 Ω , the working
	battery has an e.m.f of 4.2 volts and negligible internal resistance	ce. The galvanometer
	resistance is 20 Ω . The standard cell has an e.m.f of 1.018V and	
	1.5 Ω . The rheostat in the circuit is adjusted so that the standard of Ω . Find the register as of the rho	
A 275	the slide wire contact set at 101.8cm. Find the resistance of the rhe	$\begin{array}{ccc} costat? & [5+5] \\ & & \end{array}$
AA(-i)		

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(11.a) With a block diagram, explain the working of CRO.

Explain the method of measuring displacement using LVDT with a suitable diagramand State the advantages and disadvantages of LVDT. [5+5]

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