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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER B.TECH DEGREE EXAMINATION, JULY 2017

Course Code: EE208

Course Name: MEASUREMENTS AND INSTRUMENTATION (EE)

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions. Each carries 5 marks.

1		What are the different dynamic characteristics of measuring instruments.	(5)
2		Explain the measurement of insulation resistance by loss of charge method.	(5)
3		Write short notes on phasor measurement unit.	(5)
4		Explain the measurement of flux in a ring specimen.	(5)
5		Explain the working of a Vernier potentiometer with figure.	(5)
6		Explain the applications of CRO.	(5)
7		Explain about the analog data acquisition system.	(5)
8		Explain the flow measurement using ultrasonic transducer.	(5)

PART B

Answer any two questions. Each carries 10 marks.

9		With neat sketch, describe the constructional details of PMMC type instruments.	(10)
10	a)	Explain the general requirements for ammeter shunts.	(5)
	b)	Explain any two errors that occur in electrodynamometer type wattmeter and its compensation.	(5)
11		Explain the construction, theory and working of induction type energy meter.	(10)

PART C

Answer any two questions. Each carries 10 marks.

12		Draw the phasor diagram of a current transformer. Derive the expressions for ratio and phase angle errors.	(10)
13	a)	Explain the effect of the following on various errors of current transformer i) Power factor of secondary winding burden ii) Change of primary winding current.	(5)
	b)	Explain the measurement of rotational speed using proximity sensors.	(5)
14	a)	Explain any one method for the determination of hysteresis loop.	(6)
	b)	Write short note on iron loss in a magnetic material.	(4)

PART D

Answer any two questions. Each carries 10 marks.

15		Explain in detail the block diagram of a general purpose CRO.	(10)
16	a)	Explain how frequency can be measured using Wien's bridge.	(5)
	b)	Explain the measurement of any non-electrical quantity employing load cell.	(5)
17	a)	Explain the working principle of strain gauge.	(5)
	b)	Explain the measurement of velocity using transducers.	(5)

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