DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Semester Examination – Nov/Dec - 2018

Branch: Electrical Engg. **Sem.:-III**
Subject with Subject Code:- Measurement & Instrumentation (BTEEC304) **Marks:60**
Date:- 07-12-2018 **Time:- 3Hr.**

Instructions to the Students

1. Each question carries 12 marks.
*2. Attempt **any five** questions of the following.*
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

Q1. a)Describe Direct & Indirect methods of Measurement 6M

b) Define the Terms: 1. Repeatability 2. Reproducibility 3. Accuracy 6M

Q2. a)Describe the construction, working of PMMC instrument 6M

b) Explain Instrument Transformer - CT & PT 6M

Q3. a) Explain working & application Q-Meter 6M

b) Classify & explain different methods of measuring Low, Medium & High resistances 6M

Q4. a) Coil of 300 MI Voltmeter has resistance 500 ohm & inductance 0.8 Henry. The Instrument read correctly at 50 Hz ac supply and takes 100mA at Full Scale deflection. Analyze the percentage error in the instrument reading when it is connected to 200v DC Supply. 6M

b) Draw & Explain the Block diagram of Digital Voltmeter 6M

Q5. a) With the help of neat diagram explain the operation of LVDT 6M

b) Explain Thermocouple & RTD with its applications 6M

Q6. a) Explain different types of Recorders 6M

b) Two wattmeter connected to measure the input to a balanced three phase circuit indicates 2000W & 500W respectively. Find the Power Factor of the circuit. 6M

i) When the both readings are positive
ii) When the latter readings is obtained after reversing the connections to the current coil of the first instrument.

OR

c) Draw & Explain the block diagram of Digital Storage Oscilloscope (DSO) 6M

*** End ***

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*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2019

Course: B. Tech Electrical **Sem: III**

Subject Name: Measurement and Instrumentation **Subject Code: BTEEC304**

Max Marks: 60 **Date: 30/05/2019** **Duration: 3 Hr.**

Instructions to the Students:

1. *Solve **ANY FIVE** questions out of the following.*
2. *The level question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	What is error in measurement? Write in brief types of errors.	CO1	
B)	Explain types of various standards used in the electrical measurement.	CO1	
C)	Give classification of various analog measuring instruments.	CO1	
			12
Q.2	**Solve the following.**		
A)	Write about instrument transformers & their application in the extension of instrument range.	CO1	
B)	Write a note on electrodynamometer type single phase wattmeter.	CO2	
Q. 3	**Solve the following.**		**12**
A)	State different methods of measuring low, medium and high resistances. Explain Meggar method in detail.	CO2	
B)	Derive the balancing condition for Maxwell inductance bridge with neat diagram of bridge.	CO2	
Q.4	**Solve Any Two of the following.**		**12**
A)	With neat block diagram explain Ramp type digital voltmeter.	CO2	
B)	Write a note on electronic multimeter.	CO2	
C)	What is the use of power analyzer? Explain its working.	CO2	
Q. 5	**Solve the following.**		**12**
A)	Explain the transducer used for measurement of linear displacement.	CO3	
B)	Write a note on methods of data transmission.	CO3	

Q. 6 Solve the following. **12**

A) Explain in detail digital storage oscilloscope with its applications. CO3

B) Write a short note on X-Y recorders. CO3

***** End *****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103

Winter Semester Examination – December - 2019

Branch: Electrical Engineering **Sem.:- III**
Subject: - Measurement &Instrumentation (BTEEC304) **Marks: 60**
Date: - 17/12/2019 **Time: - 3 Hr.**

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

(Marks)

Q.1. **a)** Explain static and dynamic characteristics of measuring instruments **(6)**
b) What is Error? Explain the different types of errors? **(6)**

Q.2. **a)** Draw and explain of MI instrument and derive the equation for damping torque? **(6)**
b) The inductance of moving iron ammeter is given by following expression $L = (20+10\Theta-2\Theta^2)\ \mu H$ where, Θ is deflection in radians. The spring constant is 24×10^{-6} Nm/rad. Calculate the values of deflection for a current 5A. **(6)**

Q.3. **a)** Explain the method used for measurement of Low Resistance? **(6)**
b) Which Bridge is preferred for measurement of unknown Inductance having Quality factor > 10 explain in detail? **(6)**

Q.4. **a)** Explain the operation of Ramp type DVM with the help of block diagram and Waveform? **(6)**
b) Explain the operation of digital frequency meter with the help of block diagram? **(6)**

Q.5. **a)** Explain the construction and working of linear variable differential transformer (LVDT)? **(6)**
b) Explain temperature measuring instrument and its type in detail? **(6)**

Q.6. **a)** Write short notes on X-Y Recorder. **(6)**
b) Explain the Digital storage Oscilloscope? **(6)**

Paper End