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 $L= (20+10\Theta-2\Theta^2)$ μ 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