School of Engineering
Department of Electrical Electronics and Communication Engineering
Mid Term Examination

Exam Date: 27 Sep 2023
Time : 90 Minutes
Marks : 50

Sem VII - BEE01T4001 - Sensors and Actuators
Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1) Classify sensor according to their measurement.   K2 (2)

2) Justify the comment: "All sensors are transducer but all transducers are not sensor"   K1 (3)

3) Explain the terms: Hysteresis, saturation and repeatibility   K2 (4)

4) Illustrate advantages of Virtual Instrumentation System Techniques?   K2 (6)

5) Identify difference between electronic and mechanical sensors, their advantages and disadvantages   K3 (6)

6) A Quartz piezoelectric crystal having a thickness of 2mm and voltage sensitivity of 0.055 Vm/N is subjected to a pressure of $1.5MN/m^2$. Calculate the voltage output. If the permittivity of quartz is $40.6 * 10^{-12} F/m$. Calculate the charge sensitivity.   K3 (9)

7) Categorize pyroelectric sensor for different level of energy of a laser   K4 (8)

8) Draw the equivalent circuit for a pyroelectric sensor and its working principle.   K4 (12)

OR

Differentiate between capacitive and inductive sensor.   K4 (12)