

Code No: 156DK**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, February/March - 2022****BASICS OF SENSORS TECHNOLOGY****(Common to EEE, ECE, CSE, IT)****Time: 3 hours****Max. Marks: 75****Answer any five questions****All questions carry equal marks**

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- 1.a) With a neat block diagram, explain the general input output configuration of measurement system.
b) What is a sensor? Classify different types of sensors and give applications of it. [8+7]
- 2.a) Explain how Eddy current sensors are used for analog determination of distance and/or position of electrically conductive objects.
b) What are variable capacitive sensors? Explain the function of a capacitive sensor in a robot end effectors. [8+7]
- 3.a) With a neat diagram, explain in detail about the bridge circuit to provide cold junction compensation.
b) What is potentiometer and explain about the resistive potentiometers in detail? [8+7]
- 4.a) What is meant by Piezoelectric effect? Explain properties of piezoelectric material.
b) Explain the magneto elastic load cell with corresponding block diagram. [8+7]
- 5.a) With a neat diagram, explain the working principle of Stroboscope.
b) Explain the method of density measurement using Strain gauge load cell. [8+7]
- 6.a) With a neat diagram, explain in detail about Rotating Vane Consistency Meter.
b) Explain in detail about differential pressure densitometer. [8+7]
- 7.a) With a neat diagram, explain in detail about capillary viscometer.
b) Explain in detail about capacitor microphones. [8+7]
- 8.a) With a neat sketch illustrate any two methods used for calibration of flow meters using liquids.
b) Write a short note on:
i) Calibration of sensors
ii) Variable frequency drive. [8+7]