R18

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]

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