

Code No: 156DK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year II Semester Examinations, August/September - 2024****BASICS OF SENSORS TECHNOLOGY**

(Common to EEE, ECE)

Time: 3 Hours**Max. Marks: 75**

- Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What is RTD? List out the applications of it. [2]
- b) What is a potentiometer? Give its advantages and disadvantages. [3]
- c) What is the Piezoelectric effect? [2]
- d) Name and briefly describe common thermocouple types. [3]
- e) What is relative velocity? [2]
- f) What is the difference between Translational and Rotational velocity? [3]
- g) What is an industrial consistency meter? [2]
- h) Give specific gravity scales used in Petroleum Industries. [3]
- i) What is a master sensor? [2]
- j) Define Variable Frequency Drive. [3]

PART – B**(50 Marks)**

2. Compare and contrast the capacitive and resistive sensors in terms of working principle and applications. [10]
- OR**
3. How do reluctance variation sensors detect changes in position or displacement? Explain with an example. [10]
 4. Explain the thermoelectric effect and how it utilized in thermocouples. [10]
- OR**
5. How does cold junction compensation work in thermocouple circuits, and why is it necessary? Elaborate. [10]
 6. Explain the vibrating probe method in density measurement applications. [10]
- OR**
7. Explain the various methods to measure translational velocity. [10]
 8. Explain how the two-float viscometer is used for measuring the consistency of fluids. [10]
- OR**
9. Discuss common methods for measuring humidity. [10]

10. Describe the factors to consider when interfacing pressure sensors for various applications. [10]

OR

11.a) Provide an example application where force sensors are commonly interfaced.

b) How does pressure sensor interface? Explain briefly. [5+5]

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