

Total No. of Questions : 8]

**PE2702**

SEAT No. :

[Total No. of Pages : 2

[6583]-252

**T.E. (Robotics & Automation)**

**SENSOR TECHNOLOGY**

**(2019 Pattern) (Semester - V) (311504(A))**

*Time : 2½Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Assume suitable data, if necessary.

**Q1) a)** Write a various characteristics of thermistors. [9]

**b)** What is absolute and relative temperature? Explain it necessary. [8]

OR

**Q2) a)** Explain with a neat sketch Resistance temperature detector. [9]

**b)** Explore thermo-electric effects. [8]

**Q3) a)** Discuss latest developments in position sensors. [9]

**b)** Explain working principle of piezo resistive accelerometers. [8]

OR

**Q4) a)** Compare performance of capacitive and inductive sensor. [9]

**b)** Elaborate on shock and vibration sensor. [8]

**Q5) a)** Why load cell are needed? Explain its working. [9]

**b)** What are quartz sensors? Explain its applications. [9]

OR

**Q6) a)** How to measure force? Discuss few methods to measure force. [9]

**b)** Compare metal strain guage to semiconductor strain guage. [9]

**P.T.O.**

- Q7) Write short note on :** [18]
- a) Thermal detector [6]
  - b) Motion sensor [6]
  - c) Biosensors [6]

OR

- Q8) Write short note on :** [18]
- a) Nanotechnology enabled sensors [6]
  - b) Application of sensors in an automobile [6]
  - c) Phototransistors [6]

