

B.Tech II Year I Semester (R15) Supplementary Examinations June 2017

SENSORS & TRANSDUCERS

(Electronics and Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What are the sensors and transducers?
 - (b) Describe the classification of sensors according to emerging sensor technology.
 - (c) Name the different types of capacitive sensors.
 - (d) State optic axis.
 - (e) Explain Helium low temperature thermometer.
 - (f) What is Seebeck effect?
 - (g) What is Magnetostriction?
 - (h) What are synchros?
 - (i) What are MEMS?
 - (j) What are the parameters monitored for optimization of aerospace sensors.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 What are the statistical characteristics of sensors (measuring systems)?

OR

- 3 Write in detail about the Resistance Strain Gauge.

UNIT – II

- 4 Briefly describe the inductive sensors.

OR

- 5 Briefly describe the following:

- (a) The parallel plate capacitive sensors.
- (b) Electrostatic transducer.

UNIT – III

- 6 What are MI thermocouples? What special advantage do these thermocouples have and what are their disadvantages?

OR

- 7 What are the important detectors in a total radiation pyrometer (Pyroelectric thermal sensor)? How are they characterized?

UNIT – IV

- 8 Explain in detail about the Hall effect sensor.

OR

- 9 Explain Linear Variable Differential Transformer (LVDT) in detail.

UNIT – V

- 10 What are the unexpected developments occur through Nano-sensors? Explain them.

OR

- 11 Explain the important aspects in Micromatching.
