

Total No. of Questions : 10]

SEAT No. :

P3579

[Total No. of Pages : 2

[4959]-1197

B.E. (Instrumentation)

D: ADVANCED SENSORS

(2012 Pattern) (Semester - I) (Elective - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1)** a) Explain various factors considered in selection of sensors. [5]
b) Give detail classification of temperature sensor with their ranges and operating principles. [5]

OR

- Q2)** a) Explain dynamic characteristics of sensor with examples. [5]
b) Give detail classification of level sensor with their ranges and operating principles. [5]

- Q3)** a) Discuss design considerations and selection criteria for sensor fabrications. [5]
b) With neat block diagram explain manufacturing process of sensor in detail. [5]

OR

- Q4)** a) List different techniques used for sensor fabrication. Explain any one in detail. [5]
b) Write note on latest trends in sensor fabrication. [5]

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- Q5)** a) List different chemical sensors and give importance of each sensor. [8]
b) Explain working and characteristics of biosensors. [8]

OR

- Q6)** a) Give different types of gas sensors. Explain any one in detail. [8]
b) Explain working of fiber optic sensor with neat sketch. [8]

- Q7)** a) Explain term smart sensor. Give its importance in industry. [8]
b) List different smart sensors. Explain any application of it. [8]

OR

- Q8)** a) Explain signal conditioning and signal conversions in smart sensors. [8]
b) List smart temperature IC sensors. Explain any one in detail. [8]

- Q9)** a) Give various applications of Chemical sensors. [9]
b) Explain how and where biosensors are used in industry. [9]

OR

- Q10)** a) Explain fiber optic sensors used in pH measurement with neat sketch. [9]
b) Discuss application gas sensors in gas analyzers. [9]

