Reg. No. : | | | | | | | | | | |

Question Paper Code: 39504

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Elective

Electronics and Instrumentation Engineering

01UEI904 - ADVANCED SENSORS

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List the types of electrochemical sensor.
2. List the three basic components of a chemical sensor.
3. What is echolocation?
4. Write the types of optical sensor.
5. List any two disadvantages of purified enzymes.
6. What is biosensor?
7. What is silicon accelerometer? Mention its uses.
8. Mention the use of resolvers.
9. Compare touch sensing and tactile sensing.
10. Mention the applications of smart sensors.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain with neat diagram operation and principle of hydrogen sensitive MOSFET. (16)

Or

(b) Which sensor is mainly used for gas sensing? Explain in detail. (16)

12. (a) Define echolocation. Explain the working principle of echolocation and its applications. (16)

Or

(b) Explain the working principle of holographic sensors. (16)

13. (a) Derive the expression for the response time of the biosensor in a transient state. (16)

Or

(b) Explain the construction and the working principle of Piezo-electric-enzyme sensor. (16)

14. (a) Mention the steps involved in fabricating the high pressure sensor. Explain with a neat sketch. (16)

Or

(b) Explain the principle and working of angle of attack sensors. (16)

15. (a) Discuss in detail about data acquisition and interfacing methods for smart sensors. (16)

Or

(b) Explain how the temperature is measured using the smart sensors. (16)

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