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**Question Paper Code: 31564**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. Differentiate chemical and biochemical sensor.
2. Define solid electrolyte.
3. What is echolocation?
4. List the sensors used in instrumentation system.
5. State the principle of biosensor.
6. Define NFET sensors.
7. Give the advantages of catheter pressure sensor.
8. State the silicon accelerometers.
9. Define virtual sensors system.
10. List the few applications of smart sensors.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the principle and operation of electrochemical sensors. (16)

Or

(b) Define conductivity. Explain the operation of conductivity sensors. (16)

12. (a) Summarize the application of optical sensor in space and environment. (16)

Or

(b) Define holography and bio-holography. Also discuss in detail about it. (16)

13. (a) (i) Explain the biosensors in details. (8)

(ii) Briefly explain the operation of Piezo electric enzyme sensor. (8)

Or

(b) (i) Describe in detail about the potentiometric enzyme electrode. (8)

(ii) State the principle of optical and thermal sensors. (8)

14. (a) With suitable diagram, explain in detail about the aerospace and its applications. (16)

Or

(b) Describe the characteristics and working of pressure sensors. (16)

15. (a) Explain the concept of buses and interface in detail. (16)

Or

(b) Describe the smart sensor for electrical variable. (16)