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10BT53

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018
Bioinstrumentation and Biosensors

Time: 3 hrs.

Max. Marks:100

Note: Answer any *FIVE* full questions, selecting atleast *TWO* questions from each part.

PART - A

- 1 a. With an help of a diagram, explain the functional elements of a generalized measurement system. (10 Marks)
b. Explain the performance characteristics of instruments and systems. (10 Marks)
- 2 a. With an help of block diagram, explain the electro cardiograph. (10 Marks)
b. Explain the basic principles of Magnetic Resonance Imaging. (10 Marks)
- 3 a. Give an account of different types of sensors used to measure blood pressure. (10 Marks)
b. Explain various Cardiac assist devices. (10 Marks)
- 4 a. With an help of a Spiroghem, define lung volumes and capacities. (10 Marks)
b. Explain the methods to measure gaseous exchange and diffusion. (10 Marks)

PART - B

- 5 a. Explain the principle and construction details of pH meter. (10 Marks)
b. Give an account of radio metric devices. (10 Marks)
- 6 a. Explain various radiometric assays. (10 Marks)
b. Give an account of Scintillation Proximity Assay. (10 Marks)
- 7 Write short notes on :
a. Bar code technology. (05 Marks)
b. Bar code reader. (05 Marks)
c. LERT classification. (05 Marks)
d. Automation. (05 Marks)
- 8 a. Explain different biosensors based on concepts and highlight their applications. (10 Marks)
b. Give an account of biosensors used in bioprocess industries. (10 Marks)
