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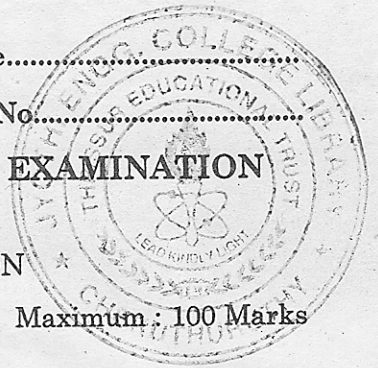
Reg. No.....

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
MAY 2011**

EC 04 804 (E)—BIOMEDICAL INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks



Part A

Answer all the questions.

- I. (a) What are Non-Polarisable and Non Polarisable electrodes?
- (b) Draw and explain the action potential of a Nerve cell and Cardiac cell.
- (c) What is the basic difference between PCG and ECG ? Discuss the different types of heart sounds.
- (d) Write short notes on Photoplethysmography.
- (e) List out the applications of Lasers in Therapeutic uses.
- (f) Write short notes on Ventilators.
- (g) Write short notes on Micro and Macro Shocks.
- (h) List out the Physiological effects of electricity at lower frequency Levels.

(8 × 5 = 40 marks)

Part B

Answer either (a) or (b) in each question.

- II. (a) Explain in detail about the 12 Lead Configuration system for picking up an ECG signal with Relevant diagrams.
- (b) What is Bio-potential ? How it can be picked up? List out the different types of electrodes and explain in detail.
- III. (a) Discuss any two direct methods to measure the blood pressure.
- (b) Explain in detail about the Electromagnetic Blood flow meter with diagram.
- IV. (a) What is a Pacemaker? What are the different types of pacemakers available? Explain any one of them in detail.
- (b) (i) Explain in detail about Infant Incubators. (8 marks)
- (ii) Write short notes on Lithotripsy. (7 marks)
- V. (a) Explain in detail about the electrical safety analyzer.
- (b) (i) Write short notes on the protective methods against electrical shock. (7 marks)
- (ii) Write short notes on the measurement of pH of a given solution. (8 marks)

(4 × 15 = 60 marks)