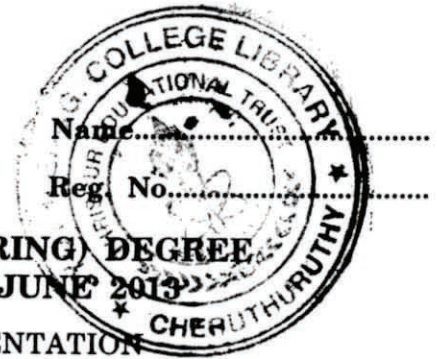


C 44792



**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
[SUPPLEMENTARY] EXAMINATION, JUNE 2013**

EC04 804 (E)—BIOMEDICAL INSTRUMENTATION

(2004 Scheme)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

- I. (a) List out the characteristics of a Bio-amplifier.
- (b) Draw and mention the different types of waves in EEG with it's amplitude and frequency ranges.
- (c) Write short notes on sphygmomanometer for blood pressure measurements.
- (d) Write short notes on Cardiac Catherisation.
- (e) When do we require a defibrillator? List out the types of defibrillator.
- (f) What condition is the artificial pacemaker designed to correct ?
- (g) Write short notes on electrical isolation.
- (h) What are the primary effects when electric current is passed through the human body ?

(8 × 5 = 40 marks)

Part B

- II. (a) Draw and explain in detail about the Skin-Electrode Interface with its equivalent circuit.
Or
(b) Explain in detail about Electromyograph. Sketch an EMG waveform, mentioning the frequency and the amplitude range of the signal.
- III. (a) (i) Explain about the Ultrasonic Blood Pressure measurement. (8 marks)
(ii) Discuss in detail about Phonocardiography. (7 marks)
Or
(b) Explain in detail about the Ultrasonic blood flow meter with relevant diagram.
- IV. (a) Describe the procedure involved in a hemodialysis with a suitable block diagram.
Or
(b) List out the different types of Defibrillators. Explain any one of them in detail.
- V. (a) (i) Write short notes on Micro and Macro shocks. (8 marks)
(ii) Write short notes on susceptibility Parameters. (7 marks)
Or
(b) Explain in detail about the measurement of PO₂, also differentiate between PO₂ and PCO₂.

[4 × 15 = 60 marks]