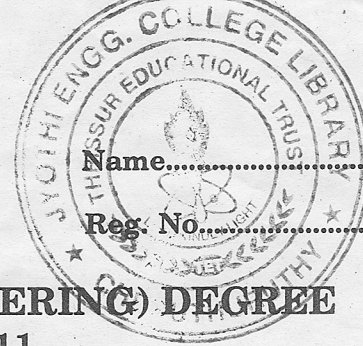


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**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, MAY 2011**

EE 04 805 (C) – BIOMEDICAL INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) What are the common problems in biomedical measurements?
(b) Define bioelectric potentials and explain it with suitable examples.
(c) Explain electro conduction system of the heart.
(d) Describe one indirect method for blood pressure measurement.
(e) What is EEG? What are the possible analyses using this?
(f) Write a note on artificial heart valves.
(g) What is endoscopy?
(h) What is the role of hospital management in modern medical systems?

(8 × 5 = 40 marks)

- II. (a) How bio potential electrodes work? Discuss the theory of micro, skin surface and needle electrodes.

Or

- (b) What is bioelectric potential? How is it classified? Explain the measurement system for EGG.

- III. (a) Draw the block diagrams of ECG machine and explain the operating principle.

Or

- (b) Explain the principle of ultrasonic blood flow measurement. What are the other methods in practice?

- IV. (a) With relevant sketches, explain EMG and EEG measurements.

Or

- (b) Explain the working of spirometer and pneumograph.

- V. (a) Explain the principles of angiography and tomography.

Or

- (b) Explain the principle of any *two* clinical laboratory instruments.

(4 × 15 = 60 marks)