

Name:.....

Reg.No:.....

EIGHTH SEMESTER B-TECH (ENGINEERING) DEGREE EXAMINATION, MAY 2012**EC 04 804 (E) - BIOMEDICAL INSTRUMENTATION**

Time: 3 hours

Max. Marks : 100

- I. (a) What is an Electromyogram? Explain its significance.
 (b) Draw the equivalent circuit of a Skin Electrode.
 (c) What is Systolic and diastolic pressure? Explain.
 (d) What is a Catheter? Explain its significance.
 (e) What is the need for an incubator? Explain.
 (f) Write a note on Lithotripsy.
 (g) How PO₂ is measured? Explain.
 (h) What are the effects of Shock Hazards? Explain.

(8 × 5 = 40)

- II (a) Discuss in detail about the functional organization of the Central and Peripheral Nervous System.

(Or)

- (b) (i) Write a note on Polarizable and Non Polarizable Electrodes.
 (ii) Explain the function of a Electrocardiogram.

- III (a) (i) Explain the working of Electromagnetic blood flow meters and Ultrasonic Blood Flow Meters.

- (ii) Write a note on Plethysmography.

(Or)

- (b) Discuss the various respiratory parameters and their measurements.

- IV. (a) Explain in detail about (i) Cardiac Pacemaker (ii) Blood Pumps and (iii) Ventilators.

(Or)

- (b) (i) Explain the various drug delivery devices.
 (ii) Explain the therapeutic applications of Laser.

- V. (a) Explain the Physiological effects of Electricity.

(Or)

- (b) (i) Explain the measurement of pH and PCO₂.
 (ii) Write a note on Electrical Safety Analyzers.

(4 × 15 = 60)