C 44784 **(Pages : 2)** Name..................................

Reg. No..................................

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

EE 04 805 (C)—BIOMEDICAL INSTRUMENTATION

(2004 Scheme)

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 5 *marks.*

1. (a) Action potential is called "All or nothing" phenomenon. Why ?

   (b) What are the problems involved in the design of biomedical instruments ?

   (c) Define resting potential. What is its typical value in mammalian cells ?

   (d) Briefly explain the heart and cardiovascular system.

   (e) Describe the physiology of respiratory system.

   (f) What is endoscopy ?

   (g) What is the basic principle of ultrasonic imaging system ?

   (h) How will you measure electromyogram ?

(8 × 5 = 40 marks)

Part B

Answer any **one** *question from Questions* 2, 3, 4 *and* 5.
Each question carries 15 *marks.*

2. (a) What are the important physiological systems of the body ?

Or

   (b) What are bio-electric potentials indicate the characteristics of the following waveforms :

   (i) ECG.

   (ii) EEG.

   (iii) EMG.

   (iv) EGG.

3. (a) What are the different types of electrodes used in ECG measurement ?

Or

   (b) Explain the direct methods used for the measurement of blood pressure in biomedical engineering research.

Turn over

4. (a) Describe an experiment for measuring conduction velocity in nerve fibers.

Or

(b) Describe briefly respiratory therapy equipments.

5. (a) Draw the block schematic and explain about ultrasonic imaging system.

Or

(b) What are the different types of tests performed on blood cells.

(4 × 15 = 60 marks)