EE

C 46691 (Pages 2)

Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2008

EE 04 805 (C)—BIOMEDICAL INSTRUMENTATION

(2004 admissions)

Time : Three Hours Maximum :100 Marks

1. (a) Draw the action potential waveforms and label the amplitude and time values. State its importance.

   (b) What are microelectrodes ? State the need for using them.

   (c) Differentiate between phonocardiogram and electrocardiogram with respect to its origin, frequency range and nature of signal.

   (d) Explain the principle of plethysmograph.

   (e) Draw a typical Spirogram and explain its salient features.

   (f) What is meant by Nerve conduction on velocity ? How is it measured ?

   (g) Differentiate and give example for invasive and non invasive imaging system.

   (h) Briefly explain the concept of biotelemetry.

   (8 × 5 = 40 marks)

2. (a) Discuss four different types of transducers, explain their principle and application.

   Or

   (b) Explain the various features that may be incorporated into an instrument for measuring physiological variables.

3. (a) With neat sketches, explain the electrical activity of the heart.

   Or

   (b) Discuss the ultrasonic method for measurement of blood pressure with relevant diagrams.

4. (a) Write a short note on : (8 marks)

   (a) Pneumonographs. (7 marks)

   (b) EEG abnormalities.

   Or

Turn over

(b) (i) Synchronous Demand Pacemaker. (6 marks)

(ii) Gas exchange and distribution. (9 marks)

5. (a) Discuss the principle of ultrasound imaging and explain the various modes.

Or

(b) Explain :

(a) Chemical tests. (7 marks)

(b) Telemedicine. (8 marks)

[4 × 15 = 60 marks]