

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2010**

EC 04 804 (E)—BIOMEDICAL INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

- I. (a) What is mean by Electrode ? Explain the purpose of the Electrode Paste.
(b) Discuss the characteristics of bio-amplifiers.
(c) What is meant by Photo Plethysmography ? Give its importance in the Photo Plethysmography.
(d) List the application of ultrasonic blood flow meters.
(e) Explain what is mean by Cardio Converters.
(f) Briefly explain the infant incubators.
(g) Write a short note on macroshock hazards.
(h) Briefly mention the physiological effects of currents at commercial frequencies.

(8 × 5 = 40 marks)

Part B

- II. (a) Explain in detail about the electroneurogram.

Or

- (b) Explain in detail about the functional organization of the peripheral nervous system.

(15 marks)

- III. (a) Explain in detail about the determination of blood flow using indicator-dilution method.

(15 marks)

Or

- (b) Write short notes on :

(i) Indirect blood Pressure measurement.

(7 marks)

(ii) Cardiac Catheterisation.

(8 marks)

- IV. (a) Describe the procedure of hemodialysis with a suitable block diagram.

(15 marks)

Or

Turn over

(b) (i) Explain in detail about the drug delivery devices.

(7 marks)

(ii) Write short notes on : lithotripsy.

(8 marks)

V. (a) Explain in detail about the electrical safety analyzers.

(15 marks)

Or

(b) Write short notes on :

(i) Electrical isolation.

(7 marks)

(ii) Measurement of PCO₂.

(8 marks)

[4 × 15 = 60 marks]

Part B

11. (a) Explain in detail about the electroencephalogram.

Or

(b) Explain in detail about the functional organization of the peripheral nervous system.

(15 marks)

11. (a) Explain in detail about the determination of blood flow using indicator-dilution method.

(15 marks)

Or

12. Write short notes on :

(7 marks)

(i) Indirect blood pressure measurement.

(8 marks)

(ii) Cardiac Catheterization.

13. (a) Describe the procedure of hemodialysis with a suitable block diagram.

(15 marks)

Or

Turn over