C 62959

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Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE [SUPPLEMENTARY] EXAMINATION, APRIL 2014

(2009 Scheme)

EC/PTEC 09 706 L 25—BIOMEDICAL INSTRUMENTATION

Time : Three Hours

Maximum : 70 Marks

Part A

Answer **all** *questions.*
Each question carries 2 *marks.*

I. 1 Define conduction velocity.

2 Draw a typical ECG waveform.

3 Mention the applications of phonocardiography.

4 List out advantages of LASER for therapeutic applications.

5 Distinguish between micro-shock and macro-shock.

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*
Each question carries 5 *marks.*

II. 6 Mention advantages and drawbacks of surface electrodes.

7 List out the characteristics of bio-amplifiers.

8 Explain the working principle of an electromagnetic blood flow meter.

9 Describe the principle of operation of demand type pacemaker.

10 List out the physiological effects of electric current on humans.

11 What are cardio converters ?

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*

III. 12 Explain in detail about micro-electrodes with a neat sketch.

Or

13 Explain the working of a Electromyograph with a neat block diagram.

Turn over

14 Explain working principle of a spirometer for measuring lung volumes and lung capacities.

Or

15 Explain the measurement of blood flow using indicator dilution method.

16 Explain the working principle of a hemo dialyser with a neat sketch.

Or

17 Explain the principle of operation of a D.C. defibrillator with a neat circuit diagram.

18 Explain the methods for protection against electric shock.

Or

19 Explain working principle of pH meter.

(4 × 10 = 40 marks)