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Name.....

Reg. No.....

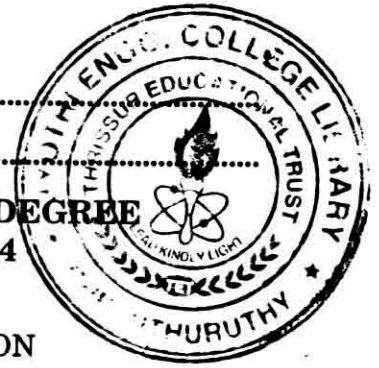
**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
[SUPPLEMENTARY] EXAMINATION, APRIL 2014**

(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)