D 11962 (Pages : 2) Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE EXAMINATION, NOVEMBER 2016

EC/PTEC 09 706 L25—BIOMEDICAL INSTRUMENTATION

Time : Three Hours Maximum : 70 Marks

Part A

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

1. List out drawbacks of surface electrodes.
2. Name the various EEG waves with frequency and amplitude.
3. Define systolic and diastolic blood pressure.
4. What is lithotripsy ?
5. Distinguish between micro shock and macro shock.

(5 × 2 = 10 marks)

Part B

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

1. List out the applications of EEG.
2. Draw an action potential waveform and discuss about depolarisation and repolarisation.
3. Explain the working principle of an impedance plethysmograph.
4. What is phonocardiography ?
5. How will you measure gas flow rate ?
6. Write short notes on ground fault interrrupters.

(4 × 5 = 20 marks)

Part C

Answer **one** *question from* **each** *module.*
Each question carries 10 *marks.*

Module I

1. (a) Explain in detail about microelectrodes.

Or

(b) Explain the various lead systems used in recording of ECG signals.

Turn over

Module II

2. (a) Explain the measurement of blood pressure using an electronic psygmomanometer.

Or

(b) Explain the working of an ultrasonic blood flow meter based on transit time principle.

Module III

3. (a) Explain the working of a demand type pacemaker with a neat block diagram.

Or

(b) Explain the working principle of a ventillator with a neat block diagram.

Module IV

4. (a) Describe the possibilities of occurrence of electrical accidents for patients in a hospital.

Or

(b) Explain the measurement of PCO_2 with a neat sketch.

(4 × 10 = 40 marks)