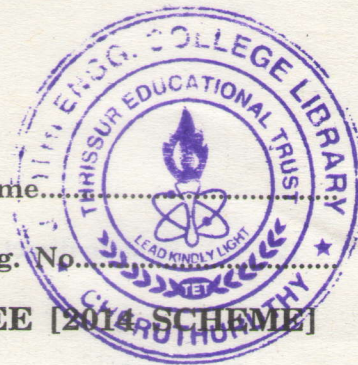


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Name.....

Reg. No.....



**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE [2014 SCHEME]  
EXAMINATION, NOVEMBER 2017**

Electronics and Communication Engineering

EC 14 705 E—BIOMEDICAL INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer any eight questions.*

1. How the basic frequency range of EEG is classified ? Explain.
2. Explain the difference between polarisable and non-polarisable electrodes.
3. With circuit schematic, explain the measurement of systolic and diastolic blood pressure.
4. What is phonocardiography ? Explain.
5. Explain Plethysmography ? Explain.
6. What is the need for Cardiac Pacemaker ?
7. How the blood velocity is calculated in ultrasound method ?
8. Explain the principle of Working of drug delivery devices.
9. What are the special environments in which the medical equipments are operated ? Explain.
10. What is the maximum permissible leakage-current through the heart ? Explain with leakage current versus frequency plot.

(8 × 5 = 40 marks)

**Part B**

11. (a) Discuss the functional organization of the peripheral nervous System.

*Or*

- (b) (i) Explain Electromyogram ?

(8 marks)

- (ii) With characteristics explain bio-amplifiers.

(7 marks)

Turn over

12. (a) Explain direct and indirect method of blood pressure measurement.

*Or*

(b) Explain :

(i) Impedance Plethysmography.

(7 marks)

(ii) Photo Plethysmography.

(8 marks)

13. (a) Explain the working of Defibrillators and Cardio Converters.

*Or*

(b) Discuss in detail the Laser and its therapeutic applications.

14. (a) Discuss the Physiological effects of electricity.

*Or*

(b) (i) Mention the precautions to minimize Electric Shock Hazards.

(7 marks)

(ii) Explain the facilities available in Electrical Safety analyzers.

(8 marks)

[4 × 15 = 60 marks]