C 26772 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, MAY 2012

PTEE/EE 09 L05—BIOMEDICAL INSTRUMENTATION

(2009 admissions)

Time : Three Hours Maximum : 70 Marks

Part A

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

1. How action potentials are generated ?
2. What are the different types of electordes used for ECG measurement ?
3. What is Einthoven triangle ?
4. What are the characteristics of EMG signal ?
5. Briefly explain the principle of computed tomography.

(5 × 2 = 10 marks)

Part B

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

6. Explain the physiology of respiratory system.
7. Explain how cardiac output is measured.
8. What are the different types of pacemakers ?
9. Write short note on "Electrical Safety".
10. How do you measure EEG signals ?
11. What is lithotripsy ?

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*
Each question carries 10 *marks.*

12. (a) What are the various types of transducers used in Biomedical Engineering ?

Or

(b) Explain the working of heart and cardiovascular system.

13. (a) Explain the indirect method for the measurement of blood pressure.

Or

(b) What are the different types of defibrillators ? Explain the working of any *one* type of defibrillator.

Turn over

14. (a) Explain how conduction velocity is measured in a nerve fiber.

Or

(b) What is hemodialysis ? Explain the working of any one type of hemodialyzer.

15. (a) Explain the working of ultrasonic imaging system. What are the important applications of ultrasound in medicine.

Or

(b) Describe briefly, the working of X-ray machine. What are the uses of X-rays in medicine and biology.

(4 × 10 = 40 marks)