

C 41261

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Name.....

Reg. No.....



**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, MAY 2013**

AI 09 603—MEDICAL INSTRUMENTATION

(2009 Admission onwards)

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

1. What do you mean by biometrics ?
2. Name the different types of electrodes used for ECG measurement.
3. Define mean Arterial pressure.
4. What is a bronchspirometer ?
5. What are the applications of telemedicine ?

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

6. Briefly explain respiratory system.
7. Explain the electro-conduction system of heart.
8. With schematic explain oscillometric method of blood pressure measurement.
9. Write a note on artificial heart valves.
10. Describe the physiological effect of electric current on human body.
11. List the applications of X-rays in medical field.

(4 × 5 = 20 marks)

**Part C**

*Answer wither Section (a) or Section (b) from each module.*

**MODULE I**

12. (a) Explain the terms :
  - (i) resting potential.
  - (ii) action potential.

*Or*

**Turn over**

- (b) With schematic explain any *two* transducers used for biomedical application.

**MODULE II**

13. (a) Describe the measurement technique used for measuring cardiac output.

*Or*

- (b) With block schematic explain the working of ECG machine.

**MODULE III**

14. (a) With schematic describe the working of a heart lung machine.

*Or*

- (b) Describe the principle of operation of spirometer.

**MODULE IV**

15. (a) With block schematic explain the working of surgical diathermy machine.

*Or*

- (b) With schematic describe the operation of ultrasonic imaging system.

(4 × 10 = 40 marks)