

29 Dec 2010

VI-Oct-10-75

T.E. | Electronic I sem VI
Elective: I: Medical Electronics

Con. 6079-10.

(REVISED COURSE)

GT-7536

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is compulsory.
(2) Attempt any **four** questions from Q. Nos. 2 to 7.
(3) Assume **suitable** data if required.

1. Attempt any **four** :- **20**
 - (a) Explain with a neat diagram any one method for blood pressure measurement.
 - (b) Explain the generation of Action Potential.
 - (c) Explain the various transducers used in body temperature measurement.
 - (d) With the help of a neat diagram, explain the principle of working of as Electromagnetic blood flowmeter.
 - (e) Explain the principle of pulse oximeter.
2. (a) What is cardiac output ? Explain any scheme for cardiac output measurement. **10**
(b) Draw as equivalent circuit when a pair of electrodes is placed in electrolytic contact with a subject and explain the same. **10**
3. (a) What is the Einthoven triangle ? Also explain, the various types of leads used in ECG measurement. **10**
(b) Explain any two principles for Respiration Rate measurement. **10**
4. (a) Draw and explain a neat schematic diagram of an EEG machine. **10**
(b) Draw and explain the schematic diagram of an instrumentation amplifier used in biomedical measurements. **10**
5. (a) Explain the need for a defibrillator and draw and explain the dc defibrillator. **10**
(b) State the principle of diathermy and explain the circuit diagram of a Short Wave diathermy unit. **10**
6. (a) Explain the principle of computed tomography. **10**
(b) Draw and explain the block diagram of bedside patient monitor. **10**
7. Write short notes on :- **20**
 - (a) Impedance Plethy Sonography
 - (b) Electrical Safety Codes and Standards
 - (c) Electronic Spirometer
 - (d) Positron Emission Tomography.