

S.B. Roll. No.....

MEDICAL ELECTRONICS
6th Exam/ECE/4616/Dec'22
(For 2018 Batch Onwards)

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Do as directed.

15x1=15

- a. EMG
- b. Bio-electrode
- c. Pacemaker
- d. Accuracy
- e. Heart Rate
- f. MRI Stands for _____.
- g. A Sphygmomanometer is a device used to measure _____.
- h. EEG stands for _____.
- i. The average heartbeat of an adult human being is _____ times per minute.
- j. Electrical accidents are caused due to interaction of electric current with the _____.
- k. Diastolic pressure is the minimum pressure in the arteries. (T/F)
- l. Bio electric potentials are ionic in nature. (T/F).
- m. The resistance of the thermistor is perfectly linear (T/F).
- n. Anatomy is a study regarding the working of body. (T/F)
- o. Name the electrode used for recording ECG.

SECTION-B

Q2. Attempt any six questions.

6x5=30

- i. What are Pressure Transducers? Explain any one.
- ii. What are the various safety aspects of medical instruments?
- iii. Differentiate between ECG, EEG and EMG.
- iv. Draw and explain the structure of the human cell.
- v. Draw and explain ECG waveform.
- vi. Discuss the block diagram of the human nervous system.
- vii. Discuss types of temperature transducers.
- viii. What is a defibrillator? Why it is used?

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. What is the respiratory system? Draw and explain the respiratory system of a Human body.
- b. Discuss about the different types of electrodes used in biomedical.
- c. What is EEG machine? Draw and explain block diagram of EEG machine.
- d. Explain Heart rate measurement and Respiration rate measurement with reference to patient monitoring system.
- e. Write Short note on any two:
 - i. Micro-current shock
 - ii. Electrode tissue interface
 - iii. Safety standards