



C09-AEI-603

3716

BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2016
DAEI—SIXTH SEMESTER EXAMINATION
BIOMEDICAL INSTRUMENTATION

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State the need of biopotential electrodes.
2. Mention the frequency and amplitudes of electromyogram signal.
3. List the diagnostic medical equipments.
4. Draw the block diagram of LASER Doppler Blood flow meter.
5. State the merits and demerits of AC defibrillator over DC defibrillator.
6. State the merits and demerits of asynchronous pacemaker over synchronous pacemakers.
7. State the significance of grids in X-ray machine.

- * 8. List the advantages of MRI.
- 9. Define macro-shock.
- 10. Define micro-shock.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Explain resting potential, action potential, sodium pump and transmission of impulses with waveform.
- 12. Explain in detail the electrical activity of heart with a legible diagram.
- 13. Explain the electrical activity of brain with waveforms and mention different frequency bands.
- 14. Explain the working principle of direct blood pressure measurement with diagram.
- 15. Explain the principle of operation of DROP-FOOT stimulator with a diagram.
- 16. Explain the working principle of CT scanner with diagram.
- 17. Explain computer aid to the physically handicapped.
- * 18. (a) Compare the advantages and disadvantages of external pacemakers and internal pacemakers.
(b) Explain the various detectors used in CT scanner.
