



C14-AEI-605

4709

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2017
DAEIE—SIXTH SEMESTER EXAMINATION
BIO-MEDICAL 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. Define action potential.
2. List any three effects of electromagnetic radiations on human body.
3. List any three types of electrodes used in EEG measurement.
4. Draw electrocardiogram waveform.
5. List the two types of blood pressure measurements.
6. Draw the block diagram of Laser Doppler blood flowmeter.
7. State the need of pacemaker.
8. State the need of defibrillators.
9. State the significance of grids in X-ray machine.
10. List any three advantages of CAT imaging over X-ray imaging.

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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 the electrical activity of brain and indicate the different frequency regions.
- 12.** Draw and explain the building blocks of electrocardiograph.
- 13.** (a) Draw the block diagram of EMG recording and also indicate the frequency and amplitude of EMG signal. 7
(b) Classify the EEG frequency bands. 3
- 14.** Explain direct blood pressure measurement with a diagram.
- 15.** Explain the working principle of ultrasonic blood flowmeter based on transit time with block diagram.
- 16.** Draw the block diagram and explain the operation of ventricular synchronous demand pacemaker.
- 17.** Define dialysis. Mention the functions of a dialysis machine.
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- 18.** Explain the operation of an X-ray machine with a block diagram.
