C14–AEI–605

4709

BOARD DIPLOMA EXAMINATION, (C–14)

JUNE—2019

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 Resting Potential.

2. List the effects of electromagnetic radiations in the human body.

3. List the different types of diagnostic medical equipment.

4. State the importance of placement of electrodes while monitoring ECG waveforms.

5. Draw the diagram of electromagnetic blood flow meter.

6. Draw the diagram of Ultrasonic blood flow meter.

7. State the need of defibrillators.

8. State the importance of dialysis.

9. List the limitations of X-ray machine.

10. List the advantages of C.A.T imaging over X-ray imaging.

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. *(a)* Explain the bio-electrical potentials associated with muscle activity.

(b) Explain the different types of electrodes used for EEG.

12. Draw the electrocardiogram Indicate its amplitude and duration and state their importance.

13. *(a)* Explain the block diagram of EMG with a sketch.

(b) Classify the EEG frequency bands.

14. Explain the principle of operation of LASER Doppler blood flow meter with a diagram.

15. Explain direct blood presure measurement with a diagram.

16. *(a)* List the functions of dialysis machine.

(b) Compare the advantages of implantable pacemakers over external pacemakers .

17. Draw the block diagram of ventricular synchronous demand pacemaker and explain its operation.

18. *(a)* Explain the interaction of X-ray with matter.

(b) Explain the working principle of C.A.T scanner with a block diagram.

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