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C16-AEI-502

**6610**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JUNE/JULY—2022**

**DAEI - FIFTH SEMESTER EXAMINATION**

**BIO MEDICAL INSTRUMENTATION**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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 bio electric potentials.
2. List any three electrodes used for bioelectric potential measurement.
3. Mention the frequency and amplitude of EMG.
4. List any three applications of ECG.
5. Draw the diagram of ultrasonic doppler type blood flow meter.
6. List the types of direct blood pressure measurements.
7. Classify different types of pacemakers.
8. Compare AC defibrillators and DC defibrillators.
9. State the need for grid.
10. Define microshock.

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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 criterion for valuation is the content but not the length of the answer.

11. Explain the electrical activity of heart.
12. Explain the working of EEG machine with its block diagram.
13. Draw and explain the bipolar ECG lead configuration.
14. Explain the working of electromagnetic blood flow meter with its diagram.
15. Explain indirect blood pressure measurement using sphygmomanometer and stethoscope.
16. Draw and explain the circuit diagram of capacitive discharge DC defibrillators.
17. Explain the operation of an X-ray machine with its block diagram.
18. Explain the effects of electrical current and magnetism on human body.

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