



C09-AEI-603

**3716**

**BOARD DIPLOMA EXAMINATION, (C-09)**  
**OCT/NOV—2014**  
**DAEI—SIXTH SEMESTER EXAMINATION**  
**BIOMEDICAL 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. Draw the equivalent circuit of electrodes.
2. List various lead configurations used in ECG recording.
3. List the applications of EMG.
4. State the principle of indirect-pressure measurement.
5. State the need of pacemaker.
6. Define prosthesis.
7. List the applications of X-ray imaging.

- \* 8. List the applications of MRI.
- 9. Write about the earth-free patient monitoring.
- 10. List the preventive measures to reduce shock hazards.

**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 following types of electrodes : 5+5  
 (a) Surface electrodes  
 (b) Cup-type electrodes
- 12. Explain the electrical activity of heart. 10
- 13. With a block diagram, explain the working principle of an EEG machine. 10
- 14. Explain the working principle of LASER Doppler blood flow-meter with diagram. 10
- 15. Explain the working principle of MRI scanner. 10
- 16. Explain the description and principle of capacitive discharge DC defibrillator. 10
- \* 17. Explain about the computerized aid to the physically handicapped. 10
- 18. Explain the following : 5+5  
 (a) Dialysis machine  
 (b) X-Ray imaging

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