



C16-AEI-502

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BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DAEI - FIFTH 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 and action potentials.
2. List the types of electrodes used for bioelectric potentials measurement.
3. Compare the bipolar and unipolar leads used for ECG measurement.
4. Classify the EEC frequency bands.
5. Distinguish direct and indirect method of blood pressure measurement.
6. List the applications of LASER Doppler blood flow meter.
7. State the need of defibrillators.
8. Compare the internal pacemakers over external pacemakers.
9. Define Compton effect.
10. Differentiate between micro shock and macro shock.

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[Contd...

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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.** (a) Draw and explain the electrical activity of heart.
(b) Explain the bio-electrical potentials associated with muscle activity.
- 12.** Draw and explain the building blocks of electro cardio graph.
- 13.** Draw and explain the block diagram set up for EMG recording.
- 14.** Explain the indirect blood pressure measurement using sphygmomanometer and stethoscope.
- 15.** Explain the working of ultrasonic blood flow meter based on Doppler type with diagram.
- 16.** (a) Draw the block diagram of ventricular synchronous demand pacemaker and explain its operation.
(b) Explain the functions of dialysis machine.
- 17.** (a) Explain the working of CAT scanner with block diagram.
(b) Explain the working of MRI with block diagram.
- 18.** Explain the patient monitoring in ICU and draw the system of arrangement.

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