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C14-AEI-605

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BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2018
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. List the effects of electricity in the human body.
2. Draw the block diagram set up for EMG recording.
3. List the applications of ECG.
4. Define action Potential.
5. List the differnt types of blood flow meters.
6. State merits and demerits of indirect method of Blood Pressure Measurement.
7. State the need of defibrillators.
8. Compare the advantages of implantable pacemakers over external pacemakers.
9. List the properties of X-ray.
10. List the advantages of C.A.T imaging over X-ray imaging.

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PART-B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each questions carries **ten** marks.
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11.** a) Explain the Sodium pump and transmission of impulses.
b) Explain the electrical activity of Brain and indicate its frequency region
- 12.** a) Compare the bipolar and unipolar leads.
b) Explain the importance of placement of electrodes while monitoring ECG waveforms.
- 13.** Explain the block diagram of ECG machine.
- 14.** Explain the principle of operation of Electromagnetic blood flow meter with a diagram.
- 15.** a) Explain the indirect blood pressure measurement using sphygmomanometer and a sphygmoscope.
b) Explain the principle of operation of Ultrasonic blood flow meter with a diagram.
- 16.** a) List the functions of dialysis machine.
b) Compare ac defibrillators and dc defibrillators.
- 17.** Draw the block diagram of ventricular synchronous demand pacemaker and explain its operation.
- 18.** a) Explain the operation of X-ray machine with a block diagram.
b) Describe the working Principle of CAT Scanner.

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