

C16-AEI-502

6610

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DAEI – FIFTH SEMESTER

BIOMEDICAL INSTRUMENTATION

Time: 3 hours

Max. Marks: 80

PART – A

3 X 10 = 30

Instructions: 1. Answer *all* questions.
2. Each question carries **Three** Marks.
3. Answer should be brief and straight to the point and should not exceed five simple sentences.

1. Define Bioelectric Potential.
2. List the types of electrodes used for bioelectric potentials measurement.
3. List the applications of EEG.
4. Compare the Bipolar and Uni-polar leads used for ECG measurements.
5. List the types of direct blood pressure measurements.
6. Draw the diagram of Electromagnetic Blood Flow meter.
7. State the need of Pacemaker.
8. List any three comparisons between AC defibrillators and DC defibrillators.
9. List the properties of X-ray.
10. Define Micro and Macro Shock

PART – B

5 X 10 = 50

Instructions: 1. Answer any **Five** questions
2. Each question carries **TEN** Marks.
3. Answer should be comprehensive and Criteria for Valuation is the content but not the length of the answer.

11. Explain the electrical activity of heart with diagram.
12. Explain the building blocks of electro cardio graph with diagrams and list the applications.
13. Explain with block diagram the working principle of an EEG machine.
14. Explain the principle of operation LASER Doppler Blood Flow meter with block diagram.
15. Explain the working of indirect Blood Pressure measurement using sphygmomanometer and stethoscope with diagram.
16. Draw the block diagram of ventricular synchronous demand pacemaker and explain its operation.
17. Explain the operation of an X-ray machine with block diagram.
18. Explain the patient monitoring in ICU and draw the system of arrangement.