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Reg. No. : .....

Name : .....

Eighth Semester B.Tech. Degree Examination, April/May 2012
(2008 Scheme)
08.816 : BIOMEDICAL ENGINEERING (T)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. List and explain the different types of EEG waves.
2. Explain the construction of any two types of electrodes used for measuring EMG.
3. Draw and explain a typical ECG waveform.
4. List the desirable characteristics of an implantable pacemaker.
5. With schematic explain the structure of a neuron.
6. State and explain Beer's law.
7. List any four applications of bioinformatics.
8. What are the advantages of PET.
9. Explain the biological effects of NMR imaging.
10. Distinguish between A-scan and B-scan of ultrasonic imaging. **(10×4=40 Marks)**

PART – B

Answer **any 2** questions from **each** Module. **Each** question carries **10** marks.

Module – I

11. What is fibrillation ? With circuit diagram explain the working of a DC defibrillator.
12. Explain the terms :
    a) resting membrane potential
    b) action potential.
13. With schematic explain the principle of ultrasonic blood flow meter.

(2×10=20 Marks)

P.T.O.

Module – II

14. With block schematic explain the working of pH meter. What are the different types of electrodes used in a pH meter ?

15. Explain any two types of instruments used for measuring brain function.

16. With schematic explain the principle of Hemodialysis machine. **(2×10=20 Marks)**

Module – III

17. With block schematic explain a pulse echo system.

18. Explain the applications of telemetry in patient care.

19. With block diagram explain the principle of operation of X-ray machine.

(2×10=20 Marks)