



Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, December 2013
(2008 Scheme)
08.816 BIOMEDICAL ENGINEERING (T)

Time : 3 Hours

Max. Marks : 100



PART - A

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

1. Name the EEG signals. Specify their frequency bands.
2. What are the requirements of implantable pacemaker ?
3. Explain how action potentials are generated within the cell ?
4. Write down the steps involved in Korotkoff method of blood pressure measurement.
5. Suggest the different techniques used to protect patients from electric shock hazards.
6. What do you mean by bioinformatics ? Discuss its applications.
7. Illustrate the sequence of events taking place in neuronal communication.
8. Explain the biological effects of NMR imaging.
9. Define characteristic impedance of a medium.
10. List the applications and advantages of positron emission tomography.

(10×4=40 Marks)

**PART – B**

Answer **any two** questions from **each** module. **Each** question carries **10** marks.

MODULE – I

11. Explain the unipolar and bipolar lead systems used for ECG measurement.
12. With block diagram explain electromagnetic blood flow meter.
13. What do you mean by fibrillation ? With schematic explain a cardiac defibrillator. **(10×2=20 Marks)**

MODULE – II

14. With schematic explain 10 – 20 electrode placement system of EEG measurement.
15. Explain the operation of heart-lung machine with the help of a diagram.
16. With block diagram explain the operation of flame photometer. **(10×2=20 Marks)**

MODULE – III

17. What are the components of NMR imaging system ? Explain with the help of block diagram.
18. With block diagram describe the working of X-ray machine.
19. What is biotelemetry ? Name the major components of a biotelemetry system and explain with the help of block diagram. **(10×2=20 Marks)**