



Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, April 2015

(2008 Scheme)

08.816 : BIOMEDICAL ENGINEERING (T)

Time : 3 Hours

Max. Marks : 100

Instruction : Answer *all* questions from Part A and *two full* questions from *each* Module in Part B.

PART – A



1. What are the characteristics of biopotential electrodes ?
2. What are the four valves in the human heart ?
3. How are skeletal muscles activated ? Explain EMG.
4. Define the imp lung capacities and explain them.
5. Explain the process of blood purification.
6. With the help of a diagram explain the Lown defibrillator.
7. Explain the working of a sphygmomanometer.
8. What are the advantages and disadvantages of PET scan ?
9. What are the basic modes of ultrasound transmission ?
10. Differentiate between microshock and macroshock.

(10×4=40 Marks)

PART – B

Module – I

11. What are bioelectric potentials ? Discuss the frequency and voltage range of ECG, EEG and EMG signals.
12. Describe the ultrasonic and electromagnetic blood flow meters.
13. Explain the electro conduction system of the heart.

**Module – II**

14. With the help of a neat diagram explain the working of a heart lung machine.
15. Describe the physiological effects of electricity. Explain the various methods of preventing electrical accidents.
16. Explain the structure of a neuron. Write notes on neuronal communication.

Module – III

17. Explain the principle and technique of producing CT images.
18. Draw the block diagram of an X-ray image intensifier system and explain its constructional details.
19. Draw the block diagram of a biotelemetry system and explain each component in detail. Explain any two applications of biotelemetry. **(6×10=60 Marks)**