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K – 5378

Reg. No. ....

Name : .....

**Eighth Semester B.Tech. Degree Examination, February 2021**

**08.816 — BIOMEDICAL ENGINEERING (T)**

**(2008 Scheme)**

Time : 3 Hours

Max. Marks : 100

PART – A

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

1. Define systolic and diastolic blood pressure.
2. Explain the electrical activity of heart.
3. What are the different types of electrodes used for ECG measurement? Explain the construction of any one type of electrode.
4. Describe the non-invasive method of blood pressure measurement.
5. What is the function of ventilator in respiratory therapy?
6. Distinguish between microshock and macroshock.
7. List and explain any three applications of bioinformatics.
8. What are the advantages and limitations of MRI?
9. Explain the principle of CT Scan.
10. Name the physiological parameters adaptable to biotelemetry.

**(10 × 4 = 40 Marks)**

P.T.O.



## PART – B

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

### Module – I

11. With schematic explain the operation of ECG machine.
12. What is the function of a pacemaker with schematic explain the working of a ventricular synchronous demand pacemaker.
13. Write notes on :
  - (a) Input guarding
  - (b) Ultrasonic blood flow meter. (2 × 10 = 20 Marks)

### Module – II

14. With schematic explain the propagation of action potential through nerves.
15. Explain the 10 – 20 electrode placement system for EEG measurement.
16. (a) With schematic explain the principle of artificial kidney.  
(b) What are the different types of electrodes used pH measurement? (2 × 10 = 20 Marks)

### Module – III

17. With block schematic explain the principle of NMR imaging.
18. What are the components of a biotelemetry system? Explain in detail.
19. With schematic explain the principle of PET. List its advantages. (2 × 10 = 20 Marks)

