(Pages : 3) **N – 5756**

Reg. No : .....

Name : .....

Eighth Semester B.Tech. Degree Examination, April 2022

(2013 Scheme)

13.806.2 : BIOMEDICAL ENGINEERING (T)

Time : 3 Hours Max. Marks : 100

PART– A

Answer **all** questions. **Each** question carries **2** marks.

1. Explain the construction of the skin surface electrodes.
2. Explain electro conduction systems of the heart with illustration.
3. Write short notes on Heart sounds.
4. Define systolk and diastolic pressure.
5. Explain polarization and depolarization.
6. Explain briefly about Plethysomgraphy.
7. Write short notes on Cardiac output.
8. Write short notes on Oxymeter.
9. Explain the principle of different types of ventilators.
10. Write a short notes on biotelemetry.

(10 × 2 = 20 Marks)

P.T.O.

PART – B

Answer **any one full** questions from **each** Module. Each question carries **20** marks.

Module – I

11. (a) What are microelectrodes? Explain the two basic microelectrodes used. **8**

(b) Write a short notes on physiological transducer. **6**

(c) Explain the sources of bioelectric potential, resting potential, action potential. **6**

12. (a) Write a short notes on ECG, EEG and EMG. **8**

(b) Write short notes on silver-silver electrodes, for ECG, EEG and EMG. **12**

Module – II

13. (a) Explain direct blood pressure measurement. **6**

(b) Explain the working of electromagnetic blood flow meter, with illustration. **8**

(c) Write short notes on phonocardiography. **6**

14. (a) Explain the completer cardio Vascular system with the help of Engineering Cardiovascular Figure. **8**

(b) Explain the Indirect method of Blood pressure Measurement. **6**

(c) Explain the measurement of blood flow and Cardiac Output. **6**

Module – III

15. (a) Write short notes on Mammography. **6**

(b) Explain the principle of operation of ultrasonic imaging system. **5**

(c) List and describe the different display types of ultrasonic system and applications of CT. **9**

16. (a) Explain the principle, image reconstruction, scanning system and applications of CT. **10**

(b) Explain the principle of Magnetic resonance Imaging Technique. **5**

(c) List the various applications of MRI. **5**

Module – IV

17. (a) Describe the working of Anesthesia Machine. **8**

(b) Write a short notes on various components of biotelemetry. **7**

(c) Discuss the applications of telemetry in medicine. **5**

18. (a) Describe the working of Haemodialysis Machine. **8**

(b) Explain the physiological parameters adaptable to biotelemetry. **8**

(c) Write short notes on implantable Telemetry transmitter. **4**

(4 × 20 = 80 Marks)