

B.E. Electronics & Communication/Telecommunication Engineering (Model Curriculum) Sem-V
ET501M3 : Program Elective-I : Bio-Medical Electronics

P. Pages : 1

GUG/W/22/13918

Time : Three Hours



Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Explain various components of physiological system of body. **8**
b) Discuss in detail different transducers used for biomedical application. **8**

OR

2. a) Explain patient monitoring system. **8**
b) Discuss various objective of medical instrumentation system. **8**

3. a) Write short note on: **8**
i) Biopotential ii) Half-cell potential
b) What is ECG? Draw and explain its working principle. **8**

OR

4. a) What are the sources of bioelectric potential? Why are these present in the body. **8**
b) Explain the heart sound measurement system. **8**

5. a) What is the importance of blood flow? Discuss the biomedical instrument used to measure blood flow. **8**
b) What is plethysmography? Explain in detail? **8**

OR

6. a) Explain impedance pneumography method in detail. **8**
b) Write the working of pulse echo apparatus. **8**

7. a) Explain working principle of CT scan with block diagram. **8**
b) Draw and explain block diagram of x-ray machine. **8**

OR

8. a) Discuss the principle and use of ultrasonic measurement in medical diagnosis. **8**
b) Describe emission computerized tomography. **8**

9. a) What are the physiological effects of electric current? Discuss various method of accident prevention. **8**
b) Write short note on: **8**
i) Electric shock ii) Micro shock
iii) Macro shock

OR

10. a) Explain shock hazards for electrical equipment? How they can be prevented. **8**
b) Explain why it is important to maintain the integrity of grounding system for protection of micro shock? **8**
