

B.E. Electronics & Communication/Telecommunication Engineering (Model Curriculum)  
Semester-V  
**ET501M3 - Biomedical Electronics**

P. Pages : 2

Time : Three Hours



**GUG/W/23/13918**

Max. Marks : 80

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- 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) Describe in details the anatomy of heart along with it's property. 8  
b) Discuss in details the blood flow measurement techniques by using flow transducers. 8

**OR**

2. a) List the types of thermistor. Explain any one in to details. 8  
b) Describe with the help of neat block diagram of the main elements in a patient monitoring system. 8
3. a) Elaborate the concept of metal – electrolyte and electrolyte skin interface. 8  
b) What are the various types of electrodes used for recording of ECG signals? Explain any one in details. 8

**OR**

4. a) Describe in details the Electromyogram signal and it's characteristics. 8  
b) Write a short notes on: 8
  - i) Bio potential Amplifier
  - ii) Bio potential electrode.
5. a) Discuss impedance pneumography in detail with a suitable diagram. 8  
b) Define Blood pressure? List out its types and also explain any one in details. 8

**OR**

6. a) List out different method used to measure respiration rate? Explain any one in details. 8  
b) Summarize the procedure for Blood temperature measurement. 8
7. a) Mention the importance of defibrillator protection circuit in each recorder. 8  
b) What are programmable pacemakers and what are their advantages. 8

**OR**

- 8.** a) Distinguish between pacemaker and defibrillator. **8**
- b) How the ultrasound generated? Explain the role of frequency, focusing and active element diameter with reference to ultrasound transducers. **8**
- 9.** a) Describe why it is important to maintain the integrity of grounding system for protection of micro shock. **8**
- b) Differentiate between micro shock and electric shock. **8**

**OR**

- 10.** a) What is the physiological effect of electric current? Discuss various methods of accident prevention. **8**
- b) Write a short notes on Artificial kidneys in details with suitable diagram. **8**

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