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

ET501M3 -Biomedical Electronics

P. Pages : 2 **GUG/S/23/13918**

Time : Three Hours * 2 6 5 5 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Diagrams and Chemical equation should be given wherever necessary.

1. a) What are the characteristics feature to be considered while selecting transducer for medical applications. **8**

b) Analyze with neat diagram the anatomy of heart. **8**

OR

2. a) Discuss the use of flow transducer for measurement of blood flow. **8**

b) Write short note on: **8**

i) Velocity Transducer

ii) Acceleration Transducer

3. a) Illustrate the bioelectric potential. Discuss how biopotential generated by the heart muscles. **8**

b) Analyze the Einthoven triangle with neat diagram. **8**

OR

4. a) Discuss the need of filter in EEG recording. **8**

b) Describe the different lead system in ECG waveform recording. **8**

5. a) Discuss the procedure for measurement of blood temperature. **8**

b) Describe the blood flow transducers in detail. **8**

OR

6. a) State the different type of blood pressure measurement? Explain any one in detail. **8**

b) Discuss the use of impedance plethysmography in blood pressure measurement. **8**

7.	a)	Distinguish between pacemaker & defibrillator.	**8**
	b)	Describe the basic NMR components with block diagram of sub systems of typical NMR imaging system.	**8**

OR

8.	a)	Discuss in detail ultrasonic technique used in medical applications.	**8**
	b)	Mention the importance of defibrillator protection circuit in each recorder.	**8**
9.	a)	State the precaution to minimize the electric shock hazards.	**8**
	b)	With the block diagram explain the working of hemo-dialysis machine.	**8**

OR

10.	a)	Discuss the different methods of electric accident prevention.	**8**
	b)	Discuss the role of heart lungs machine in medical application.	**8**

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