

P. Pages : 2



Time : Three Hours

GUG/S/25/13918

Max. Marks : 80

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

1. a) Describe a patient monitoring system with the help of neat diagram. 8
b) Discuss the selection criterion of transducers for medical application and also explain the characteristics features. 8

OR

2. a) Write a short notes on the following. 8
i) Displacement Transducer
ii) Velocity Transducer

b) Describe the function of 'Nervous System' and its parts with the help of neat diagram. 8
3. a) Describe ECG and draw a typical ECG waveform and label it. 8

b) What are the sources of 'Bioelectric potential'? Why these are present in the body. 8

OR

4. a) State different types of bio-potential Electrode and explain any one in details. 8

b) Describe Bio potential Amplifier with the help of suitable diagram. 8
5. a) Describe the working of an Electromagnetic flowmeter with the help of Block diagram. 8

b) Discuss the procedure for Blood pressure measurement. 8

OR

6. a) Elaborate the concept about Impedance plethysmography. 8

b) State the different types of blood pressure measurement techniques. Explain any one in details. 8
7. a) What is Defibrillator? Describe the need and history of defibrillator. 8

b) Describe the ultrasonic techniques used for medical application. 8

OR

- 8.** a) Write a short notes on pacemaker and also compare it with defibrillator. **8**
- b) Discuss the concept about emission computerized tomography. **8**
- 9.** a) Write in your own words, what are the special situations in hospitals which are responsible for increased electrical hazards due to electric current. **8**
- b) Discuss in details the hemodialysis machine. **8**

OR

- 10.** a) Elaborate the concept of Heart-Lung Machine. **8**
- b) Write a short notes on the following. **8**
- i) Electric shock.
 - ii) Micro shock.
 - iii) Macro shock.
