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Roll No. ....

**3rd Sem.**

**Branch : Medical Electronics**

**Sub.: Biomedical Instrumentation-I**

Time : 3 Hrs.

M.M. : 60

**SECTION-A**

**Note: Multiple choice Questions. All Questions are compulsory. (6x1=6)**

Q.1 Heart rate of a healthy person in resting state should be:

- a) 90 Beats/minute                      b) 72 beats/minute
- c) 120 beats/minute                      d) 45 beats/minute

Q.2 What is the signal amplitude of ECG signal?

- a) 0.02-5 mv                                  b) 0.5-1 mv
- c) 0-10 mv                                      d) 0-20 mv

Q.3 Letter T in EEG measurement denotes

- a) Temporal Lobe                              b) Tympanic membrane
- c) Trace    d) Temper

Q.4 The material used in limb surface electrode is

- a) Gold    b) Copper
- c) Platinum                                        d) German silver

- Q.5 Which instrument is used for listening heart sounds?  
 a) Stethoscope                      b) Endoscope  
 c) Colonoscope                      d) Proctoscope
- Q.6 The blood vessel that carry blood away from heart called  
 a) Artery                                b) Vein  
 c) AV Node                            d) Bundle of HIS

### SECTION-B

**Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)**

- Q.7 Electrode.  
 Q.8 Montage.  
 Q.9 Neuromuscular Junction.  
 Q.10 Blood Pressure.  
 Q.11 Sterilization.  
 Q.12 Arrhythmia.

### SECTION-C

**Note: Short answer type Questions. Attempt any eight questions out of ten Questions. (8x4=32)**

- Q.13 List various biomedical signals with their description.

- Q.14 Explain Einthoven's Triangle.  
 Q.15 Explain 10/20 Montage Electrode system.  
 Q.16 Explain Muscular system & Its classification.  
 Q.17 Write a note on Blood Glucose measurement.  
 Q.18 Explain Central Monitoring system with diagram.  
 Q.19 Explain Autoclave unit with block diagram description.  
 Q.20 Write a note on critical care instrumentation.  
 Q.21 Explain construction & working of Syringe pump with diagram.  
 Q.22 Explain construction & working of Pulse oximeter with diagram.

### SECTION-D

**Note: Long answer questions. Attempt any two questions out of three Questions. (2x8=16)**

- Q.23 Explain principle and working of Dialysis machine with diagram.  
 Q.24 Explain different methods of blood pressure measurement.  
 Q.25 Explain principle and working of ECG Machine with diagram.