

- Q.24 Write a short note on perspective of Biomedical Engineering.
- Q.25 Explain Heart cardiac system.
- Q.26 Explain Einthoven's Triangle with diagram.
- Q.27 Discuss about the brain & its functions.
- Q.28 Write a note on muscular system & its functions.
- Q.29 Explain various electrodes used in EEG measurements.
- Q.30 Write a short note on blood pressure measurement by direct method.
- Q.31 Explain central monitoring system.
- Q.32 Explain intravenous cannulae.
- Q.33 Explain Apnea Monitor.
- Q.34 Explain Conduction system of heart with diagram.
- Q.35 Enlist different medical Equipments in different departments in hospital.

#### **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain EEG & its measurement with block diagram.
- Q.37 Explain Lithotripter working with block diagram.
- Q.38 Explain Blood glucose level measurement with procedure in details.

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**3rd Sem / Med Eltx**  
**Subject:- Biomedical Instrumentation - I /**  
**Biomed. Instr. / Basic of Instr.**

Time : 3Hrs. M.M. : 100

#### **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 EEG Electrodes are placed on  
 a) Forehead                          b) Chest  
 c) Scalp                              d) None of the above
- Q.2 Blood vessels that carry blood towards heart is called  
 a) Artery                            b) Vein  
 c) Neuron                            d) None of the above
- Q.3 ECG measurement is done for  
 a) Heart                            b) Liver  
 c) Brain                            d) Muscles
- Q.4 The term 'MONTAGE' refers to?  
 a) EEG                              b) CT Scan  
 c) Blood cell counter            d) None of the above

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**Q.5** Which limb is used as reference point in EEG measurement

- a) Right Arm
- b) Left Arm
- c) Earlobe
- d) Left Leg

**Q.6** Normal EEG Frequency range is

- a) 50-500 Hz
- b) 0.5-50 Hz
- c) 0.05-5 Hz
- d) 1-200 Hz

**Q.7** The downstairs chambers of heart is called

- a) Atria
- b) Ventricles
- c) Aorta
- d) None of the above

**Q.8** What is Signal Amplitude of ECG signal

- a) 2-5 mv
- b) 0.1-5 mv
- c) 0-10 mv
- d) None of above

**Q.9** How many heart valves does the heart have

- a) 4
- b) 2
- c) 3
- d) 6

**Q.10** Residual volume refers to which instrument?

- a) X-ray machine
- b) BP Monitor
- c) Ventilator
- d) None of the above

## **SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Expand EEG

Q.12 Expand NIBP

Q.13 Electrode

Q.14 Neuron

Q.15 Expand TMT

Q.16 Heart Rate.

Q.17 Bradycardia

Q.18 Unipolar lead

Q.19 Expand EMG

Q.20 Define Transducer

## **SECTION-C**

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain Mechanics of Respiration.

Q.22 Explain Principle, construction and working of Lithotripter with diagram.

Q.23 Write a note on sources of Biomedical signals and their generations.