

- Q.24 Explain Einthoven's Triangle with diagram.
 - Q.25 Explain EMG with block diagram.
 - Q.26 Write a note on muscular system & its functions.
 - Q.27 Explain various electrodes used in EEG measurements.
 - Q.28 Write a short note on blood pressure measurement by direct method.
 - Q.29 Explain central monitoring system.
 - Q.30 Write a note on Brain waves.
 - Q.31 Explain different body potential & explain generation of bio-potential in body.
 - Q.32 Explain Biomedical simulator.
 - Q.33 Explain Effects of artifacts in ECG tracing. Also discuss general instructions in ECG procedure.
 - Q.34 Write a short note on noise in medical instrumentation.
 - Q.35 Explain bed side monitor with diagram.

SECTION-D

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

- Q.36 Explain EEG & Its measurements with diagram.

Q.37 Explain Heart lung machine with diagram.

Q.38 Write note on following:

 - a) Mechanics of Respiration
 - b) Lithotripter

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

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

- Q.1 Which is not a Radiology & imaging equipment.

 - a) X-Ray Machine
 - b) CT-Scan
 - c) Ultrasound
 - d) Pulse Oximeter

Q.2 One cardiac cycle completes about

 - a) 3 Sec
 - b) 2 Sec
 - c) 0.8 Sec
 - d) 0.5 Sec

Q.3 The Term "MONTAGE" is used in

 - a) EEG
 - b) ECG
 - c) EMG
 - d) ERG

Q.4 What is the frequency range of ECG Signal?

 - a) 70-120 Hz
 - b) 0.05-100 Hz
 - c) 5-120 Hz
 - d) 12-200 Hz

- Q.5 EEG Electrodes are placed on
 a) Forehead b) Cheek
 c) Ears d) Scalp
- Q.6 Recording of Electrical activity of Muscles in called
 a) ERG b) EEG
 c) EMG d) EOG
- Q.7 Which is not a blood component?
 a) RBC b) Platelets
 c) Neuron d) Plasma
- Q.8 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.9 Which instrument is used for listening heart sounds?
 a) Stethoscope b) Endoscope
 c) Colonoscope d) Proctoscope
- Q.10 Which is called Natural Pacemaker?
 a) Aorta b) SA Node
 c) AV Node d) Bundle of HIS

SECTION-B

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

- Q.11 Expand ECG.
 Q.12 Transducer.
 Q.13 Systole.
 Q.14 Expand IBP.
 Q.15 What is Breathing Rate.
 Q.16 Expand CSF.
 Q.17 What is the normal Blood pressure level in fasting stage of a healthy person?
 Q.18 What is called Natural Pacemaker of body?
 Q.19 What do you mean by sPo₂?
 Q.20 What is Residual Volume?

SECTION-C

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

- Q.21 Discuss any two biomedical signals and their generation.
 Q.22 Write a short note on perspective of Biomedical Engineering.
 Q.23 Explain various ECG Electrodes.