

- 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 type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain EEG & its measurements with diagram
- Q.37 Explain Heat lung machine with diagram.
- Q.38 Write note on following:
- a) Mechanics of Respiration
 - b) Lithotripter

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3rd Sem / Medical electronics

**Subject:- Bio-Medical Instrumentation (BMI) - 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 What are the frequency range of ECG signal?
- a) 70-120 Hz b) 0.05-100 Hz
 - c) 5-120 Hz d) 12-200 Hz
- Q.2 EEG Electrodes are placed on
- a) Forehead b) Cheek
 - c) Ears d) Scalp
- Q.3 Recording of Electrical activity of Muscles is called
- a) ERG b) EEG
 - c) EMG d) EOG
- Q.4 Which is not a blood component ?
- a) RBC b) Platelets
 - c) Neuron d) Plasma

Q.5 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.6 What is the signal amplitude of ECG Signal ?

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

Q.7 Letter T in EEG measurement denotes.

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

Q.8 The material used in limb surface electrode is

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

Q.9 Which instrument is used for listening heart sounds ?

- a) Stethoscope b) Endoscope
- c) Colonscope d) Protoscope

Q.10 Which is called Natural Pacemaker ?

- a) Aorta b) SANode
- c) AVNode d) Bundle of HIS

SECTION-B

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

Q.11 Expand EMG

Q.12 Electrode

Q.13 Systole

Q.14 Expand NIBP

Q.15 What is Respiration Rate

Q.16 Expand CNS

Q.17 What is the Normal Glucose level in fasting stage of a healthy person ?

Q.18 What is called Natural Pacemaker of body?

Q.19 What do you mean by SPO_2 ?

Q.20 What is Tidal 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.

Q.24 Explain Einthoven's Triangle with diagram.