

- Q.24 Explain muscular system and its types .
- Q.25 Explain pulse oximeter with block diagram .
- Q.26 Write a note on muscular system & its functions
- Q.27 Explain various electrodes used in EEG measurements
- Q.28 Explain Apnea Monitor.
- Q.29 Explain Infusion Pump
- Q.30 Write a note on mechanic of respiration.
- Q.31 Explain Oxygen concentrator with its working .
- Q.32 Write a note on Intravenous cannulae.
- Q.33 Explain Effects of artifacts in ECG tracing , also discuss general instructions in ECG procedure .
- Q.34 Explain ambulatory monitoring
- 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 ECG & Its measurements with block diagram .
- Q.37 Explain blood glucose level measurement with procedure in details
- Q.38 Write note on following :
- Hearing Aid
 - Central monitoring system

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Roll No.

3rd Sem / Medical electronics

Subject:- Bio-Medical 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 What is the frequency range of EEG signal ?
- 70-120 Hz
 - 0.5-50 Hz
 - 5-120 Hz
 - 12-200 Hz
- Q.2 How many wavelengths are used in pulse oximeter ?
- 4
 - 3
 - 5
 - 2
- Q.3 Recording of Electrical activity of brain is called
- ERG
 - EEG
 - EMG
 - EOG
- Q.4 How many speed of paper motor generally used in ECG machine?
- 4
 - 3
 - 2
 - only one

- 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 EEG signal ?
 a) 0.0002 - 0.3 mv b) 0.1 - 5 mv
 c) 0-10 mv d) 0-20 mv
- Q.7 Which limb is used as reference electrode in ECG measurement
 a) Right Arm b) Left Arm
 c) Right Leg d) Left Leg
- Q.8 Which is not a Radiology & imaging equipment
 a) X-ray machine b) CT- Scan
 c) Ultrasound d) Pulse Oximeter
- Q.9 One cardiac cycle completes about
 a) 3 sec b) 2 sec
 c) 0.8 sec d) 0.5 sec
- Q.10 The term 'MONTAGE' is used in
 a) EEG b) ECG
 c) EMG d) ERG

SECTION-B

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

- Q.11 Expand TMT
 Q.12 Transducer
 Q.13 Diastole
 Q.14 Expand IBP
 Q.15 What is vital capacity
 Q.16 Expand CSF
 Q.17 What is the normal blood pressure of a healthy person ?
 Q.18 Expand ICU
 Q.19 Expand TLC.
 Q.20 What is minute volume ?

SECTION-C

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

- Q.21 Write a short note on basic biomedical instrumentation system.
 Q.22 Explain different lead combination in ECG Measurement.
 Q.23 Write a short note on effects of artefacts in ECG tracing.