

- 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 :
 a) Hearing Aid
 b) Central monitoring system

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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 ?
 a) 70-120 Hz b) 0.5-50 Hz
 c) 5-120 Hz d) 12-200 Hz
 Q.2 How many wavelengths are used in pulse oximeter ?
 a) 4 b) 3
 c) 5 d) 2
 Q.3 Recording of Electrical activity of brain is called
 a) ERG b) EEG
 c) EMG d) EOG
 Q.4 How many speed of paper motor generally used in ECG machine?
 a) 4 b) 3
 c) 2 d) 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.