

- Q.25 Write a short note on bio-telemetry.
 - Q.26 Describe ICU with its important elements.
 - Q.27 Discuss computer applications in bio medical field.
 - Q.28 Discuss five specification of medical instrumentation system.
 - Q.29 Describe resting potential of a cell with its diagram.
 - Q.30 Discuss EMG machine.
 - Q.31 Explain Glucometer.
 - Q.32 Discuss applications of telemedicine.
 - Q.33 Describe speech audiometer.
 - Q.34 Describe speech audiometer.
 - Q.35 Write a short note on application of embedded system in bio-medical instrumentation.

Section-D

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

- Q.36 Explain Pulse oximeter (SPO₂) with suitable diagram.

Q.37 Explain Nervous system of human body.

Q.38 Describe man-instrumentation system with its block diagram.

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Instrumentation & Control / EI

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

- Q.1 The bio potential generated by the neuronal activity of the brain is called _____.

a) EEG b) EMG

c) ECG d) EOG

Q.2 ECG recorders are of different types _____.

a) Single channel b) Three channel

c) Both A and B d) None of these

Q.3 Electrocardiogram is obtained from _____.

a) Brain b) Muscles

c) Heart d) Retina

Q.4 The stimulus may be _____.

a) Auditory b) Visual

c) Both A & B d) None of these

- Q.5 Glucometer is used to measure _____.
 a) Blood Pressure b) Blood Glucose
 c) Body Temperature d) None of these
- Q.6 Surface electrode can be used to sense _____.
 a) ECG Potential b) EEG Potential
 c) Both A & B d) None of these
- Q.7 Delta Signal is associated with _____.
 a) ECG b) EEG
 c) EMG d) ERG
- Q.8 Which circuitry receives the modulated signal.
 a) Receiver b) Transmitter
 c) Antenna d) None of these
- Q.9 Pacemaker consists of _____.
 a) Pulse generator b) Electrodes
 c) Both A & B d) None of these
- Q.10 For an engineer the cardiovascular system can be viewed as _____.
 a) Hydraulic System b) Pneumatic System
 c) Both A & C d) None of these

Section B

Note: Objective types Questions. All Questions are compulsory. (10x1=10)

- Q.11 Define electrode.
- Q.12 Accuracy is a measure of systematic error T/F.
- Q.13 Blood pressure range of a health person is _____.
- Q.14 Expand ECG.
- Q.15 _____ Electrode is used for ECG.
- Q.16 Signal to noise ratio be as high as possible. T/F
- Q.17 Expand CICU.
- Q.18 Mention are material for manufacturing of electrode.
- Q.19 The respiratory system is the Major Hydraulic system of the body. T/F
- Q.20 The bio Chemical system is the communication network for the body. T/F

Section-C

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

- Q.21 Write a short note on development of biomedical instrumentation.
- Q.22 Explain cardiovascular system of human being.
- Q.23 Discuss contact impedance.
- Q.24 Describe block diagram of ECG machine.