

- Q.26 Discuss Telemedicine.
 Q.27 Discuss the elements of ICU.
 Q.28 Explain the necessity of ventilators.
 Q.29 Discuss CAT scan with its diagram .
 Q.30 Write a short note on De-fibrillators.
 Q.31 Discuss Glucometer.
 Q.32 Explain ECG machine with its diagram.
 Q.33 Discuss Bio-electrodes and its materials.
 Q.34 Explain action potential of a cell.
 Q.35 Discuss in-vivo and in-vitro measurement.

SECTION-D

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

- Q.36 Discuss various physiological systems of a human body.
 Q.37 Explain block diagram of Bio-Telemetry system.
 Q.38 (a) Discuss Pacemaker.
 (b) Describe Pulse oxymeter.

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6th Sem / IC, EI **Subject:- Bio-Medical Instrumentation**

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 A Transducer converts _____
 a) Mechanical energy into electrical energy
 b) Electrical energy to mechanical energy
 c) Electrical energy to non-electrical energy
 d) One form energy to another form of energy
 Q.2 Value of action potential is
 a) -70mv b) -100mv
 c) +20mv d) +10mv
 Q.3 Cells are surrounded by body fluids, these body fluids are _____ solutions
 a) Conductive b) Non-conductive
 c) Magnetic d) None of these
 Q.4 Body surface electrodes are used to measure _____.
 a) ECG signal b) EEG signal
 c) EMG signal d) All of these

- Q.5 Alpha wave pattern is associated with _____.
a) Heart b) Brain
c) Muscle d) None of these
- Q.6 Pulse oximeter measures
a) Blood sugar level b) % of oxygen in blood
c) Lung capacity d) None of these
- Q.7 CICU expands as
a) Coronary Intensive Care Unit
b) Coronary Interface Care Unit
c) Coronary Instrument Care Unit
d) None of these
- Q.8 Respiration system is associated with
a) ECG b) EEG
c) EMG d) None of these
- Q.9 _____. Instrument is known as treatment instrument
a) Pace maker b) Glucometer
c) Pulse oximeter d) None of these
- Q.10 A machine that records electrical activity of heart is known as .
a) EEG b) ECG
c) EMG d) None of these

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Expand CAT Scan.
Q.12 Define accuracy.
Q.13 Expand BMET.
Q.14 ECG machine is used to detect electrical activity of heart. T/F
Q.15 Signal to noise ratio should be high .T/F
Q.16 Glucometer is used to measure blood pressure .T/F
Q.17 Lung capacity and lung volume is measured by spirometer.T/F
Q.18 Expand CRO.
Q.19 Define transmitter.
Q.20 Define sensor.

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Differentiate between research and clinical instruments .
Q.22 Discuss cardiovascular system of human body.
Q.23 Write a short note on electrode tissue interface.
Q.24 Discuss EEG machine with its block diagram.
Q.25 Write a short note on spirometer.