Q.25 Write a short note on implant materials.

Q.26 Describe the principle of active transducers in a short note.

Q.27 Write five functions of Biomedical Instrumentation.

Q.28 Explain strain gauge transducer in a short note.

Q.29 Explain the ECG machines in a short note.

Q.30 Describe micro eletrode in a short note

Q.31 Draw the block diagram of Digital Recorders.

Q.32 Write Performance characteristics of electrodes.

Q.33 Explain photoelectric transducers in a short note.

Q.34 Describe the principle of LVDT.

Q.35 Write a shot note on ink-jet recorders.

SECTION-D

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

Q.36 Describe electrode circuit model with necessary diagram.

Q.37 Explain Signal Processing in Biomedical signals with block diagram of Digital signal Processing System.

Q.38 Explain the principle of transducer and write its classification with example.

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5th Sem / Branch : Med. Eltx.
Sub.: Biomedical Sensors and Transducers (BMST)

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 What are the different types of bio electrodes?

a) Microelectrodes
b) Needle Electrodes
c) Body surface electrodes
d) All

Q.2 Select the example of transducer

a) Microphones b) Loudspeakers
c) Thermometers d) All

Q.3 Bio-potentials are the generated due to

a) K+ b) Na+
c) Both d) None

Q.4 ECG has

a) AB wave b) BV wave
c) QRS Wave d) None

Q.5 Electrode gel is used to

a) Reduce skin resistance b) Increase blood flow

c) None d) All

Q.6 Which electrode is used for EMG.

a) Surface b) Needle

c) Pregelled d) Scalp

Q.7 Needle electrode is made of

a) Stainless Steel b) Copper

c) Lead d) Iron

Q.8 Source of Bio electric potential is _____ in nature.

a) Electronic b) Electric

c) Ionic d) Mechanical

Q.9 The Principal ion that is not involved with the phenomena of producing cell potentials is

a) Sodium b) Potassium

c) Chlorine d) Hydrogen

Q.10 Active transducers work on the principle of _____

a) Energy conversion b) Mass conversion

c) Energy alteration d) Volume conversion

SECTION-B

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

Q.11 Write the full form of L VDT.

Q.12 Write name of one bio-material.

Q.13 Write one example of a transducer.

Q.14 Write name of one source of Bioelectric potentials.

Q.15 Expand ECG.

Q.16 Write name of one bio electrode.

Q.17 Write one advantage of optical fiber sensors.

Q.18 Write one use of EMG.

Q.19 Write full form of BMST.

Q.20 Expand EEG.

SECTION-C

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

Q.21 Write a short note on any one displacement type Sensors.

Q.22 Explain the principle of thermocouple.

Q.23 Write the working principle of ECG electrode.

Q.24 Write a short note on piezoelectric transducers.