Q.28 Explain role of EMG for Athletes.

Q.29 How thermistor type transducer called passive transducer?

Q.30 Explain Potentiometer.

Q.31 Write a note on Instrumentation amplifier with suitable diagram?

Q.32 Explain two types of thermocouples?

Q.33 Explain Role of Stethoscope with BP and heartbeat.

Q.34 Explain Digital Recorders.

Q.35 Why Biomedical signal analysis in important for DSP?

Section-D

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

Q.36 Write a note on various type of material that can be used as Biomaterial and disadvantage of each biomaterial?

Q.37 Write a note on microelectrode, Suction type and Need type electrode, Why EEG electrode are different from another electrode like EEG and ECG?

Q.38 Explain Basic recorder system with block diagram and all step required in DSP for processing of signal.

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5th Sem. / Med. Eltx.
Subject : Biomedical Sensors & Transducers (BMST)

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 Signal can be Transfer through process:

a) Transformer b) Filter
c) Amplifications d) All of these

Q.2 Sensor consists of:

a) Sensing elements b) Transducer
c) Both d) None of these

Q.3 Material used to replace any amputated and damaged part is knows as :

a) Metals b) Polymers
c) Bio Material d) None of these

Q.4 Two characteristics of Bio-Materials are :

a) Hard materials b) Flexible material
c) Both d) None of these

Q.5 Electrodes can be :

a) Microelectrode b) Section types
c) Floating d) All of these

Q.6 Two types of Transducers are :

a) Active Transducer b) Passive Transducer

c) Both d) Done of these

Q.7 Recently used Surface electrode for ECG is knows as :

a) Floating

b) Metal disk

c) Disposable adhesive type electrode

d) None of these

Q.8 Instrument consists of sensor is :

a) Monitor b) Pulse Oximeter

c) Floating d) None of these

Q.9 Electrode convert.

a) Ionic to ionic potential

b) Electrical to electric

c) Ionic to Electrical potential

d) None of these

Q.10 Role of electrolyte is :

a) Water

b) To add noise

c) To reduce interference

d) None of these

Section-B

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

Q.11 Give one example of Measurand.

Q.12 Write a drawback of biomaterial?

Q.13 Write two examples of material suitable for humane bone replacement?

Q.14 Write two examples of sensor apply in medical field?

Q.15 Why piezoelectric property is different from other effects?

Q.16 Define ECG.

Q.17 What one property of optical fiber Sensor?

Q.18 Define ultrasonic flow.

Q.19 Define DWR.

Q.20 Define IJR.

Section-C

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

Q.21 Explain Biomaterial with suitable classification diagram?

Q.22 Why Transducers are important for medical field?

Q.23 Explain theory of electrode interface with anode and cathode diagram?

Q.24 Classify Transducer as passive and active transducer?

Q25 Explain Pressure Transducer.

Q.26 Define role of Linear variable transducer for electronics.

Q.27 Why electrodes are important for diagnostic?