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Roll No. .....

4th Sem.
Branch : Eltx.
Sub : Medical Electronics

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 EMG instrument is useful for making study of ___. (CO4)

a) Cardiovascular function b) Neuromuscular function

c) Nervous function d) Immune function

Q.2 The smallest change in measur and that will result in a measurable change in the transducer output is called_____. (CO3)

a) Offset b) Linearity

c) Resolution d) Threshould

Q.3 Which of the following is not a piezo-electric material? (CO3)

a) Quartz b) Rochelle salt

c) Aluminium d) Barium titanate

Q.4 Which of the following instrument is used for recording the electrical activity of the brain? (CO1)

a) ECG b) EMG

c) PCG d) EEG

Q5. From equipment point of view, the respiratory system in the human body is a _____ system. (CO5)

a) Hydraulic b) Pneumatic

c) Mechanical d) Electrical

Q.6 Active transducers work on the principle of_____. (CO3)

a) Energy conversion b) Mass conversion

c) Energy alteration d) Volume conversion

Q.7 What is the normal pulse rate of Human being? (CO1)

a) 20-40 b) 60-100

c) 100-150 d) Above 150

Q.8 Principle behind strain gauge is _____. (CO3)

a) Variable resistance b) Variable inductance

c) Variable capacitance d) Variable contact area

Q.9 Thermistor is used to measure _____. (CO3)

a) Temperature b) Pressure

c) Height d) Displacement

Q.10 _____ converts biochemical events into measurables signals. (CO3)

a) Amplifier b) Op-amp

c) Rectifier d) Transducer

SECTION-B

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

Q.11 What is the full form of MRI? (CO5)

Q.12 Name any example of Diagnostic Equipment. (CO1)

Q.13 Define Defibrillator. (CO5)

Q.14 Define Bioelectric signals. (CO2)

Q.15 To observe working of brain_____ (ECG/EMG/EEG). (CO2)

Q.16 Define electric shock. (CO6)

Q.17 Pacemaker is used when_____ (brain/heart) is not working properly. (CO5)

Q.18 PCG stands for_____. (CO1)

Q.19 What is bio-elctrode? (CO6)

Q.20 Write two applications of EEG machine. (CO5)

SECTION-C

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

Q.21 How the clinical laboratory equipment differs from diagnostic equipment? (CO1)

Q.22 Draw and explain the working of PCG. (CO5)

Q.23 Explain briefly the ultrasonic imaging system. (CO5)

Q.24 Explain Blood Pressure Measurement System. (CO3)

Q25 Explain any one type of flow transducer. (CO3)

Q.26 How does Photoelectric Transducer work? (CO3)

Q.27 Write a note on Calorimeter. (CO3)

Q.28 Write short note on Gross current Shock. (CO6)

Q.29 What is Electrode Tissue Interface? (CO2)

Q.30 Write a short note on respiration sensor. (CO3)

Q.31 Explain the use of Microprocessor in Patient Monitoring. (CO5)

Q.32 What is Micro current shock. (CO6)

Q.33 Discuss temperature sensor. (CO3)

Q.34 Explain any one type of temperature transducer. (CO3)

Q.35 Describe the working of ultrasonic blood flow meter. (CO3)

SECTION-D

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

Q.36 Write a short note on : (CO5,6)

a) Safety standards for medical instruments

b) Cardiac Pacemaker

Q.37 Explain any one clinical laboratory equipment in detail with the help of diagram. (CO1)

Q.38 Draw and explain the block diagram of ECG machine. (CO4)