

No. of Printed Pages : 4
Roll No.

181045/171045

4th Sem / Eltx
Subject:- Medical Electronics

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 The resting potential of a cell is about
a) -60 to -100 mV b) +60 to +100 mV
c) -10 to -20m V d) +10 to +20 mV
- Q.2 Full form of ECG is
a) Electric cardiogram b) Electro cardiogram
c) Electric cardiograph d) None
- Q.3 What are the standard number of electrodes used in ECG
a) 4 b) 6
c) 8 d) 10
- Q.4 To convert biochemical signal into measurable signal _____ is required
a) Amplifier b) Inverter
c) Rectifier d) Transducer

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- Q.5 LVDT stands for
a) Linear variable differential transformer
b) Line variable differential transformer
c) Linear variable different transformer
d) Line variable different transformer
- Q.6 The body temperature of normal human being ranges between
a) 20°C to 30°C b) 15°C to 20°C
c) 36.1°C to 37.2°C d) 40.1°C to 42.2°C
- Q.7 The X-Ray machine is an example of _____
a) Therapeutic equipment
b) Diagnostic equipment
c) Clinical laboratory equipment
d) None of these
- Q.8 MRI stands for
a) Magnetic Resonance Imaging
b) Material Resonance Imaging
c) Magnetic Resonant Imaging
d) None of these
- Q.9 Beats/minute of a normal human being ranges from
a) 30 to 60 b) 60 to 100
c) 100 to 120 d) 120 to 150
- Q.10 The full form of VCG is
a) Vector cardiogram b) Velocity cardiogram
c) Virtual cardiogram d) None

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SECTION-B

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

- Q.11 What is micro shock?
- Q.12 The operation of thermocouple is based on _____ (Doppler/ See back effect)
- Q.13 To observe working of brain _____ (ECG/ EEG/EMG) is used.
- Q.14 Pacemaker is used when _____ (brain/heart) is not working properly.
- Q.15 What is bio electrode?
- Q.16 Diastolic pressure is the minimum pressure in the arteries (True/False)
- Q.17 The frequency of muscle activity is very high (True/ False)
- Q.18 PCG stands for _____
- Q.19 What are the advantages of MRI over other imaging methods.
- Q.20 Write two applications of EEG machine.

SECTION-C

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

- Q.21 Differentiate between ECG and EMG.
- Q.22 Differentiate between invasive measurement and non-invasive measurement
- Q.23 Explain metal electrolyte interface.

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- Q.24 Explain various body surface electrodes.
- Q.25 What are therapeutic equipments? Name any two.
- Q.26 Explain how strain gauge is used as pressure transducer.
- Q.27 Draw and explain working of VCG.
- Q.28 Differentiate between phono cardiogram and vector cardiogram.
- Q.29 Draw and explain the structure of human heart.
- Q.30 Write short note of pacemaker.
- Q.31 Draw block diagram of ultrasound machine.
- Q.32 Which type of electrodes are used for EMG measurements
- Q.33 Differentiate between micro shock and macro shock.
- Q.34 Explain active and passive transducers.
- Q.35 What are biological amplifiers and name their types.

SECTION-D

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

- Q.36 Draw the block diagram of EEG machine and explain its working.
- Q.37 What are the various safety aspects of medical instruments.
- Q.38 Write short note on any two
 - a) Electrode tissue interface
 - b) Normal ECG waveform
 - c) Defibrillator

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