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**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 What are the standard number of electrodes used in ECG

- a) 8
- b) 10
- c) 12
- d) None

Q.2 To convert biochemical signal into measurable signal _____ is required

- a) Amplifier
- b) Inverter
- c) Rectifier
- d) Transducer

Q.3 The ultrasound machine is an example of _____

- a) Therapeutic equipment
- b) Diagnostic equipment
- c) Clinical laboratory equipment
- d) None of these

Q.4 Full form of EEG is

- a) Electroencephalogram
- b) Electricencyclogram

- c) Electriceardiograph
- d) None

Q.5 The commonly used electrodes for EEG measurement are called

- a) Skin electrodes
- b) Scalp electrodes
- c) Needle electrodes
- d) None

Q.6 The SA node stands for _____

- a) Sinoatrial node
- b) Sino artery node
- c) Sinusoidal node
- d) None

Q.7 The commonly used electrodes used for EMG measurement

- a) Skin electrodes
- b) Scalp electrodes
- c) Needle electrodes
- d) None

Q.8 The CT scanner is an example of

- a) Therapeutic equipment
- b) Diagnostic equipment
- c) Clinical laboratory equipment
- d) None of these

Q.9 The full form of VCG is _____

- a) Vector cardiogram
- b) Velocity cardiogram
- c) Virtual Cardiogram
- d) None

Q.10 EMG stands for _____

- a) Electromyography
- b) Electricmyography
- c) Electricalmyography
- d) None

SECTION-B

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

Q.11 ECG stands for _____

Q.12 What is the use of strain gauge in medical electronics?

Q.13 The breath/minute of a normal human being is _____

Q.14 LVDT stands for _____

Q.15 What is macro shock?

Q.16 What is bio electrode?

Q.17 Write 2 applications of ECG machine

Q.18 What is the use of Bucky grid in X-Ray Machine?

Q.19 What is digital stethoscope?

Q.20 Full form of MRI?

SECTION-C

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

Q.21 Which type of electrodes are used for ECG measurements

Q.22 Explain electrode tissue interface

Q.23 What are diagnostic equipment? Name any two

Q.24 Draw and explain the working of PCG.

Q.25 Discuss the role of electronics engineer in medical electronics

Q.26 Write a short note on safety standard of medical instruments.

Q.27 Write short note on pacemaker.

Q.28 Draw block diagram of X-Ray machine.

Q.29 Draw and explain structure of human cell.

Q.30 What are biological amplifiers and name their types.

Q.31 Write short note on vector cardiogram.

Q.32 Explain how blood sugar is measured from the body

Q.33 Explain working of LVDT as pressure transducer

Q.34 Draw and explain working of digital stethoscope.

Q.35 Explain active and passive transducer.

SECTION-D

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

Q.36 Draw the block diagram of EMG machine and explain its working.

Q.37 What is pressure sensor? Explain its working.

Q.38 Write short note on any two

a) Leakage current

b) Gross current shock

c) Micro-current shock