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Roll No. .....

4th Sem / Branch : Eltx.

Subject:- Medical Electronics

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 BIS stands for _____ (CO7)(CO7)

a) Board of Indian Standards
b) Bureau of Indian standards
c) Bureau of International specifications
d) Board of international standards

Q.2 Gauge factors is defined as _____ (CO3)

a) (incremental change in resistance due to stress / resistance of an unstretched wire) * (unstretched length of wire / incremental change in length)
b) (incremental change in resistance due to strain / resistance of an unstretched wire) * (unstretched length of wire / incremental change in length)
c) (incremental change in resistance due to stress / resistance of an unstretched wire) * (incremental change in length / unstretched length of wire)
d) (resistance of an unstretched wire / incremental change in resistance due to stress) * (unstretched length of wire / incremental change in length)

Q.3 Source of Bioelectric potential is ____ in nature. (CO2)

a) electronic b) electric
c) ionic d) mechanical

Q.4 Electrode used for recording EMG: (CO2)

a) Limb Electrodes b) Floating Electrodes
c) Needle Electrodes d) None

Q.5 Strain gauge is used to measure _____. (CO3)

a) temperature b) pressure
c) height d) displacement

Q.6 Spirometer is used for _____ measurement. (CO3)

a) Respiration b) Heart rate
c) Pulse rate d) None of above

Q.7 What is the frequency range of ECG machine? (CO4)

a) 5 to 20 Hz b) 0.05 to 120 Hz
c) 120-200 Hz d) 200-500 Hz

Q.8 Which instrument is use for clinical detection of heart sounds? (CO1)

a) Stethoscope b) Endoscope
c) Anoscope d) Proctoscope

Q.9 LVDT stands for _____ (CO3)

a) Linear Virtual Double Transformer
b) Linear Virtual Differential Transducer
c) Linear Variable Differential Transducer
d) Linear Variable Differential Transformer

Q.10 Unwanted signal at the output due either to internal sources or to interference is called _____. (CO1)

a) offset b) noise
c) drift d) threshold

SECTION-B

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

Q.11 What is the use of sphygmomanometer? (CO5)

Q.12 Define Diagnosis. (CO1)

Q.13 What is a gross shock? (CO6)

Q.14 Calorimeter is used for _____. (CO3)

Q.15 Define ECG. (CO4)

Q.16 Define Heart Rate. (CO5)

Q.17 Define Therapeutic Equipment. (CO1)

Q.18 MRI stand for _____. (CO5)

Q.19 Full form of VCG. (CO5)

Q.20 Name any two therapeutic equipment. (CO1)

SECTION-C

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

Q.21 Explain Safety Standards. (CO6)

Q.22 Give the principle of pacemaker. (CO5)

Q.23 Name any five Diagnostic Equipments used in medical Electronics. (CO1)

Q.24 Give basic idea about contact impedance. (CO2)

Q.25 What is the principle of Respiratory System? (CO5)

Q.26 Discuss the role of 'Bucky Grid' in X-Ray machine. (CO5)

Q.27 Write a short note on pulse sensor. (CO3)

Q.28 Explain Heart rate measurement system. (CO5)

Q.29 What is the use of nebulizer? (CO5)

Q.30 Draw and explain surface electrode. (CO2)

Q.31 Classify the bio electrodes on the basis of application. (CO2)

Q.32 Draw and explain ECG machine. (CO4)

Q.33 Give the principle of defibrillator. (CO5)

Q.34 Write any five precautions to minimize electric shock hazards from biomedical equipment. (CO6)

Q.35 Illustrate the LVDT type pressure transducer. (CO3)

SECTION-D

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

Q.36 Explain any one therapeutic equipment in detail with the help of diagram. (CO1)

Q.37 Write a short note on the following: (CO5,6)

a) Heart rate Measurement

b) Safety standards

Q.38 Draw Block diagram and explain phonocardiogram. (CO4)

(**Note:** Course outcome/CO is for office use only)