

# NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E / EEE	Year / Semester : III/V	Format No.	NAC/TLP-07a.13
Subject Code : OMD551	Subject Name : Basics of Biomedical Instrumentation	Rev. No.	02
Unit No : 2	Unit Name : <b>Biosignal characteristics and electrode configurations</b>	Date	30.09.2020

## OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ / True or False / Fill up with Choices )	BTL
1	The number of leads necessary for an ECG is _____ a) 3 b) 6 <b>c) 12.</b> d) 24	L1
2	Which of the four limbs acts like a ground and thus is not a part of the ECG test? a) Right Arm b) Left Arm <b>c) Right Leg.</b> d) Left Leg	L1
3	What result do the various combinations of limb leads give? <b>a) Einthoven's Triangle.</b> b) Beethoven's Triangle c) Bermuda's Triangle d) Electrical Triangle	L1
4	The most common placement of the leads from the Einthoven's triangle is _____ a) Positive Left Arm and Negative Right Arm <b>b) Positive Left Leg and Negative Right Arm.</b> c) Positive Left Leg and Negative Left Arm d) Positive Right Arm and Negative Left Leg	L2
5	A typical ECG wave is _____ a) Periodic b) A-periodic <b>c) Quasi – Periodic.</b> d) Non – Periodic	L2
6	The amplitudes of the segments of the wave are _____ <b>a) P = 0.25 mV, Q = 0.4mV, R = 1.60mV, T = 0.1 – 0.5 mV.</b> b) P = 2.0 mV, Q = 0.1mV, R = 1.60mV, T = 0.1 – 0.5 mV c) P = 25.0mV, Q = 4.0mV, R = 16.0 mV, T = 10 – 50 mV d) P = 0.25 mV, Q = 0.60mV, R = 1.60mV, T = 0.1 – 1.0 mV	L2
7	Bradycardia ECG will show what kind of wave? a) The impulses have increased <b>b) The impulses have decreased.</b> c) Pronounced P waves d) Pronounced T waves	L2
8	Electrodes to measure EEG are placed on _____ a) forehead <b>b) scalp.</b> c) cheek d) ears	L2

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9	According to the international 10/20 system to measure EEG, even number denotes which side of the brain? a) left b) top c) bottom <b>d) right .</b>	L2
10	Letter F in the EEG electrode placement system denotes? a) front b) face <b>c) frontal lobe</b> d) fast	L1
11	Normal EEG frequency range is _____ a) 50-500Hz b) 0.5-50HZ c) 0.05-5Hz <b>d) 1-200Hz.</b>	L1
12	The letter T in the EEG electrode placement system denotes? <b>a) temporal lobe.</b> b) temper lobe c) trace d) timpanic	L1
13	According to the international 10/20 system to measure EEG, odd number denotes which side of the brain? <b>a) left.</b> b) right c) top d) front	L1
14	The delta wave in EEG ranges from _____ a) 0.5-4Hz b) 4-8Hz c) 8-13Hz d) 13-22Hz	L2
15	The peak to peak amplitude of the waves that can be picked from the scalp is _____ a) 100mV b) 100V <b>c) 100uV</b> d) 10mV	L2
16	Which rhythm is the principal component of the EEG that indicates the alertness of the brain? a) theta rhythm b) gamma rhythm c) beta rhythm	L1

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	<b>d) alpha rhythm</b>	
17	The letter T in the EEG electrode placement system denotes? <b>a) temporal lobe</b> b) temper lobe c) trace d) timpanic	L1
18	Which of the following instrument is used to measure the oxygen saturation level of blood in localized areas of oxygen? a) Ear Oximeter b) Pulse Oximeter <b>c) Skin reflectance Oximeter</b> d) Intravascular Oximeter	L2
19	Skin Reflectance oximeter depends on monitoring backscattered lights in how many wavelengths? a) 1 <b>b) 2</b> c) 3 d) 4	L1
20	Who considered “Human tissues are composed of parallel semi-infinite layers of homogenous materials”. a) Cohen and Wadsworth <b>b) Cohen and Logini</b> c) Cohen d) Wadsworth	L1
21	Who has poorer signal-to-noise ratio? a) Transmission Pulse Oximeter <b>b) Reflection Pulse Oximeter</b> c) Ear Oximeter d) Pulse Oximeter	L2
22	Which of the following instrument is used for recording the electrical activity of the brain? a) ECG b) EMG c) PCG <b>d) EEG</b>	L1
23	EEG electrodes are larger in size than ECG electrodes. a) True <b>b) False</b>	L1
24	_____ is the superimposed wave of neuron potentials operating in a non-synchronized manner in a physical sense. a) VCG b) ECG <b>c) EEG</b>	L1

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	d) PCG		
25	Which of the following is material is used to improve electrical contact? a) Silver Tungsten b) Electrode jelly c) <b>Silver Graphite</b> d) Copper Tungsten		L2
26	Whose electrodes give high skin impedance as compared to ECG? a) VCG b) PCG c) EMG d) <b>EEG</b>		L1
27	What are generally designed to have a very high value of input impedance to take care of high electrode impedance? a) Montages b) Electrodes c) <b>Preamplifiers</b> d) Filters		L1
28	Voltage difference between an active electrode on the scalp with respect to reference electrode at ear lobe or any other part of body is known as _____ recording. a) <b>Monopolar</b> b) Bipolar c) Unipolar d) Nonpolar		L2
29	How is bipolar recording done? a) Omni channel EEG b) <b>Multi channel EEG</b> c) Uni Channel EEG d) Non Channel EEG		L1
30	A pattern of electrodes on the head and the channels they are connected to are _____ a) Amplifiers b) Oscilloscope c) <b>Montage</b> d) Wires		L1
31	Where is the reference electrode placed? a) nasal b) cervical c) <b>forehead</b> d) facial		L1
32	What is the typical value of the calibration signal? a) 10 uV/cm b) 30 uV/cm c) <b>50 uV/cm</b> d) 70 uV/cm		L1

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33	Preamplifiers used in electroencephalograph have high gain and low noise characteristics. a) <b>True</b> b) False	L3
34	EEG machines have notch filter sharply tuned at _____ Hz as to eliminate mains frequency interference. a) 10 b) 30 c) <b>50</b> d) 70	L1
35	What is the typical frequency range of standard EEG machines? a) 0.025 to 0.05 Hz b) 0.05 to 0.1 Hz c) <b>0.1 to 70 Hz</b> d) 70 to 140 Hz	L1
36	How much blood is present in an average adult? a) 10-12 L b) 2-3 L c) <b>5-6 L</b> d) 20-25 L	L1
37	Blood consists of corpuscles suspended in a fluid called plasma in the proportion of 45 parts of _____ to 55 parts of _____ a) Plasma, corpuscles b) <b>Corpuscles, plasma</b> c) Protoplasma, cytozomes d) Cytozomes, protoplasma	L1

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