

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : BE/ECE	Year / Semester : III/V	Format No.	NAC/TLP-07a.13
Subject Code : OMD551	Subject Name : Basics Of Biomedical Instrumentation	Rev. No.	02
Unit No : 3	Unit Name : Signal Conditioning Circuits	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ / True or False / Fill up with Choices)	BTL
1.	The filter used to reject the 50Hz noise picked up from power lines or machinery is called? a) band reject filter b) band stop filter c) notch filter d) all reject filter	L2
2.	Devices that pass the signal from its source to the measurement device without a physical or galvanic connection by using transformer, optical or capacitive coupling technique are called? a) filters b) rectifiers c) bridges d) isolaters	L1
3.	Which of the following technique is not employed in isolation devices? a) resistance b) optical c) inductance d) capacitance	L5
4.	Besides breaking ground loops, isolation blocks high voltage surges and rejects high common mode voltages. a) True b) False	L2
5.	Strain gauges are resistance devices in a Wheat stone bridge configuration _____ a) which does not require bridge completion circuitry and an excitation source b) which requires bridge completion circuitry and an excitation source c) which neither requires bridge completion circuitry nor an excitation source d) which requires bridge completion circuitry but does not an excitation source	L3
6.	Which of the following voltage regulator IC gives a variable positive voltage? a) LM317 b) LM337 c) 7805 d) 7812	L4
7.	_____ IC is a variable negative voltage regulator. a) 7912 b) 7905 c) LM337 d) LM317	L4
8.	Digital filters are sensitive to temperature as compared with analog filters. a) True b) False	L2
9.	Signal conditioning is not of much importance in the measuring and recording system. a) True b) False	L1

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10.	In order to be able to minimize the effects of changes occurring in the electrode impedances, it is necessary to employ a preamplifier having a high input impedance. a) True b) False	L1
11.	The impedance of the input should be _____ in order to obtain high CMRR in the differential amplifier. a) low b) High c) Does not matter d) Very low	L2
12.	Where are potentials picked up by patient electrodes taken to? a) Lead Selector switch b) Preamp c) Power Amplifier d) Instrumentational amplifier	L4
13.	The amplified output signal is picked up single-ended from preamp and is given to the _____ a) Power Amplifier b) Lead Selector c) Pen Motor d) Paper motor	L3
14.	Why is preamplifier used? a) For Amplification b) For Stabilizing effect c) For Reducing effect d) For Modifying effects	L3
15.	Stand by' mode of operation is generally provided in which instrument? a) VCG b) PCG c) ECG d) EMG	L2
16.	_____ are made horizontally on electrocardiogram. a) Time Measurements b) Heart Rate Measurements c) Time Measurements and Heart Rate Measurements d) Not fixed and can be any thing	L3
17.	What is paper recording speed for routine work? a) 10 mm/s b) 15 mm/s c) 20 mm/s d) 25 mm/s	L3

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18.	<p>A _____ is usually a display device used to produce a paper record of analog wave form.</p> <p>a) Graphic pen recorder b) Electron microscope c) X-Y recorder d) Oscilloscope</p>	L1
19.	<p>What measurements are made vertically on electrocardiogram?</p> <p>a) Time Measurements b) Heart Rate Measurements c) Amplitude Measurements d) Time Measurements and Heart Rate Measurements</p>	L2
20.	<p>What is sensitivity of an electrocardiograph?</p> <p>a) 10 mm/mV b) 15 mm/mV c) 20 mm/mV d) 25 mm/mV</p>	L3
21.	<p>The smallest change in measurant that will result in a measurable change in the transducer output is called _____</p> <p>a) offset b) linearity c) resolution d) threshold</p>	L3
22.	<p>Unwanted signal at the output due either to internal sources or to interference is called _____</p> <p>a) offset b) noise c) drift d) threshold</p>	L2
23.	<p>Change in signal over long period of time is called _____</p> <p>a) noise b) offset c) hysteresis d) drift</p>	L2
24.	<p>Which of the following statement is true for an instrumentational amplifier?</p> <p>a) the input resistance of both the inputs is very high and does not change as the gain is varied b) the input resistance of both the inputs is very low and does not change as the gain is varied c) the input resistance of both the inputs is very high and does change as the gain is varied d) the input resistance of both the inputs is very low and does change as the gain is varied</p>	L1

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25.	Which of the following is not the property of the instrumentational amplifier? a) Extremely high input impedance b) Low bias and offset currents c) High slew rate d) Very low CMRR	L2
26.	Electromagnetic coupling cannot be reduced by _____ a) shielding b) wire twisting c) multiple grounding d) common grounding	L1
27.	Which on the following is not a type of isolation amplifier? a) capacitively coupled isolation amplifiers b) optically isolated isolation amplifiers c) resistive coupled isolation amplifiers d) transformer type isolation amplifiers	L4
28.	The isolation includes different supply voltage sources and different grounds on each side of the isolation barrier. a) True b) False	L2
29.	_____ are commonly used for providing protection against leakage currents. a) Isolation amplifiers b) Differential amplifiers c) Instrumentational amplifiers d) Inverting amplifiers	L3
30.	Power gain in decibels is equal to voltage gain in decibels only when a) Input impedance is equal to output impedance b) Output impedance is zero c) Never d) Input impedance is zero	L2
31.	The amplifier which has no drift is called as a) Differential amplifier b) DC amplifier c) Single ended amplifier d) Chopper amplifier	L4
32.	To reduce common mode interference during recording of bio signals one can use _____ a) Buffer amplifier b) Differential amplifier c) Single ended amplifier d) Chopper amplifier	L3

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33.	For biomedical applications the mostly used amplifier is a) Single ended amplifier b) Differential amplifier c) Inverting operational amplifier d) Chopper amplifier	L1
34.	_____ amplifier is used to drive the recorder. a) Power amplifier b) Pre amplifier c) Operational amplifier d) Differential amplifier	L2
35.	chopper amplifier a) Converts AC signal from low frequency to high frequency b) Converts DC signal from low frequency to high frequency c) Converts AC signal from low frequency to DC high frequency d) Converts DC signal from low frequency to high frequency	L4
36.	Pre amplifier isolation in ECG circuit is to a) Increase input impedance b) Decrease input impedance c) Increase output impedance d) Decrease output impedance	L3
37.	The negative feed back in an amplifier a) Reduces voltage gain b) Increases the voltage gain c) Increases the gain band width product d) Reduces the input impedances	L3
38.	Transcutaneous means _____ a) passing to the skin b) passing to the bones c) passing to the heart d) passing to the lungs	L2
39.	Which of the following is not a soft tissue? a) ligament b) bone c) tendons d) skin	L3
40.	Blood vessels are _____ a) soft tissue b) hard tissue c) connective and hard tissue d) connective and soft tissue	L3