

**NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.**

<b>Course/Branch</b> : B.E / EEE	<b>Year / Semester</b> :III/V	Format No.	NAC/TLP-07a.13
<b>Subject Code</b> : OMD551	<b>Subject Name</b> : Basics of Biomedical Instrumentation	Rev. No.	02
<b>Unit No</b> :3	<b>Unit Name</b> : <b>Signal conditioning circuits</b>	Date	30.09.2020

**OBJECTIVE TYPE QUESTION BANK**

<b>S. No.</b>	<b>Objective Questions (MCQ /True or False / Fill up with Choices )</b>	<b>BTL</b>
1	The ability of the amplifier to reject common voltages on its two input leads is known as _____ a) common mode rejection rate b) coupled mode rejection rate <b>c) common mode rejection ratio</b> d) coupled mode rejection ratio	L1
2	CMRR is measured in _____ a) V/s <b>b) dB</b> c) dB/s d) dB/ms	L2
3	CMRR of the preamplifiers should be as high as possible. <b>a) True</b> b) False	L2
4	The common mode rejection for most op-amps is typically between _____ a) 10-50dB b) 20-40dB <b>c) 60-90dB</b> d) 100-120dB	L2
5	The output of differential gain is given by _____ <b>a) (difference of the two input voltage)*(feedback resistance/input resistance)</b> b) (sum of the two input voltage)*(feedback resistance/input resistance) c) (difference of the two input voltage)*(input resistance/feedback resistance) d) (sum of the two input voltage)*(input resistance/feedback resistance)	L2
6	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. <b>a) True</b> b) False	L2
7	Which filter attenuates any frequency outside the pass band? <b>a) Band-pass filter</b> b) Band-reject filter c) Band-stop filter d) All of the mentioned	L2
8	Narrow band-pass filters are defined as a) $Q < 10$ b) $Q = 10$ <b>c) <math>Q &gt; 10</math></b> d) None of the mentioned	L1
9	A band-pass filter has a bandwidth of 250Hz and center frequency of 866Hz. Find the quality factor of the filter? <b>a) 3.46</b> b) 6.42	L2

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	c) 4.84 d) None of the mentioned		
10	The advantage of narrow band-pass filter is a) fc can be changed without changing gain b) fc can be changed without changing bandwidth c) fc can be changed without changing resistors <b>d) All of the mentioned</b>		L1
11	Due to presence of a capacitor in feedback path, the output of an integrator varies _____ <b>a. Gradually</b> b. Instantaneously c. Intermittently d. All of the above		L2
12	In a buffer circuit, the voltage follower is placed _____ two networks in order to minimize the effect of loading on the first network. a. Before <b>b. Between</b> c. After d. None of the above		L1
13	As the frequency increases, input impedance of differentiator _____. a. Increases <b>b. Decreases</b> c. Remains constant d. None of the above		L1
14	In a differential amplifier, the CMRR is limited mostly by a. CMRR of the op amp b. Gain-bandwidth product c. Supply voltages <b>d. Tolerance of resistors</b>		L2
15	The input signal for an instrumentation amplifier usually comes from a. An inverting amplifier b. A transducer c. A differential amplifier <b>d. A Wheatstone bridge</b>		L2
16	To use an op amp, you need at least <b>a. One supply voltage</b> b. Two supply voltages c. One coupling capacitor d. One bypass capacitor		L1
17	An instrumentation amplifier has a high a. Output impedance b. Power gain <b>c. CMRR</b> d. Supply voltage		L1
18	What is an ideal value of attenuation for the frequencies in pass band especially for a cascade		L1

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	configuration? a. Zero b. Unity c. Infinity d. Unpredictable	
19	A differential amplifier ..... a. is a part of an Op-amp b. has one input and one output c. has two outputs <b>d. answers (1) and (2)</b>	L1
20	When a differential amplifier is operated single-ended, ..... a) the output is grounded <b>b) one input is grounded and signal is applied to the other</b> c) both inputs are connected together d) the output is not inverted	L1
21	In differential-mode, ..... <b>a) opposite polarity signals are applied to the inputs</b> b) the gain is one c) the outputs are of different amplitudes d) only one supply voltage is used	L1
22	In the common mode, ..... a) both inputs are grounded b) the outputs are connected together <b>c) an identical signal appears on both the inputs</b> d) the output signal are in-phase	L1
23	The common-mode gain is ..... a) very high <b>b) very low</b> c) always unity d) unpredictable	L2
24	The differential gain is ..... <b>a)very high</b> b)very low c)dependent on input voltage d)about 100	L1
25	With zero volts on both inputs, an OP-amp ideally should have an output ..... a)equal to the positive supply voltage b)equal to the negative supply voltage <b>c)equal to zero</b> d)equal to CMRR	L2