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**Q1. A differential amplifier .....**

1. is a part of an Op-amp
2. has one input and one output
3. has two outputs
4. answers (1) and (2)

**Answer : 4**

**Q 2. When a differential amplifier is operated single-ended, .....**

1. the output is grounded
2. one input is grounded and signal is applied to the other
3. both inputs are connected together
4. the output is not inverted

**Answer : 2**

**Q3. In differential-mode, .....**

1. opposite polarity signals are applied to the inputs
2. the gain is one
3. the outputs are of different amplitudes
4. only one supply voltage is used

**Answer : 1**

**Q4. In the common mode, .....**

1. both inputs are grounded
2. the outputs are connected together
3. an identical signal appears on both the inputs
4. the output signal are in-phase

**Answer : 3**

**Q5. The common-mode gain is .....**

1. very high
2. very low
3. always unity
4. unpredictable

**Answer : 2**

**Q6. The differential gain is .....**

1. very high

2. very low
3. dependent on input voltage
4. about 100

**Answer : 1**

**Q7. If  $A_{DM} = 3500$  and  $A_{CM} = 0.35$ , the CMRR is .....**

1. 1225
2. 10,000
3. 80 dB
4. answers (1) and (3)

**Answer : 4**

**Q8. With zero volts on both inputs, an OP-amp ideally should have an output .....**

1. equal to the positive supply voltage
2. equal to the negative supply voltage
3. equal to zero
4. equal to CMRR

**Answer : 3**

**Q9. Of the values listed, the most realistic value for open-loop voltage gain of an OP-amp is .....**

1. 1
2. 2000
3. 80 dB
4. 100,000

**Answer : 4**

**Q10. A certain OP-amp has bias currents of  $50 \mu\text{A}$ . The input offset current is .....**

1.  $700 \text{ nA}$
2.  $99.3 \mu\text{A}$
3.  $49.7 \mu\text{A}$
4. none of these

**Answer : 1**