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## Operational Amplifiers MCQ Test

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Below is the **Operational Amplifiers MCQ** test that checks your basic knowledge of Operational Amplifiers. This **Operational Amplifiers MCQ Test** contains 20 Multiple Choice Questions. You have to select the right answer to the question. Finally, you can also take the Online Quiz from the Take **Operational Amplifiers Quiz** Button.

**Q1. What is the main purpose of an operational amplifier?**

- **A. The basic role of an operational amplifier is to amplify and output the voltage difference between the two input pins.**
- B. The basic role of an operational amplifier is to input the voltage difference between the two input pins.
- C. Both A and B
- D. None of the above

**Q2. The tail current of a differential amplifier is \_\_\_\_.**

- A. half of either collector current
- B. equal to either collector current
- **C. two times either collector current**
- D. equal to the difference in base currents

**Q3. The node voltage at the top of the tail resistor is close to zero.**

- **A. True**
- B. False

**Q4. The tail current in a differential amplifier equals \_\_\_\_.**

- A. difference between two emitter currents
- **B. sum of two emitter currents**

- C. collector current divided by current gain
- D. collector voltage divided by collector resistance

**Q5. What is the another name for a unity gain amplifier?**

- A. Difference amplifier
- B. Comparator
- C. Single ended
- D. **Voltage follower**

**Q6. A series dissipative regulator is an example of a \_\_\_\_.**

- A. **linear regulator**
- B. switching regulator
- C. shunt regulator
- D. dc-to-dc converter

**Q7. The major difference between ground and virtual ground is:**

- A. **Virtual ground is only a voltage reference.**
- B. Virtual ground is only a current reference
- C. Virtual ground is only a power reference
- D. None of the above

**Q8. OPAMP is a/an:**

- A. **Differential amplifier**
- B. Oscillator
- C. Rectifier
- D. None of the above

**Q9. Is Bandwidth of an ideal op-amp infinite?**

- A. **Yes**
- B. No

**Q10. CMRR stands for which of the following?**

- A. Central Mode Rejection Ratio
- B. Cross Mode Rejection Ratio
- C. Common Model Rejection Ratio
- **D. Common Mode Rejection Ratio**

**Q11. What is operational amplifier?**

- **A. simply a linear Integrated Circuit (IC) having multiple-terminals**
- B. simply a hyper Integrated Circuit (IC) having multiple-terminals
- C. simply a cross Integrated Circuit (IC) having multiple-terminals
- D. None of the above

**Q12. Differential amplifiers are used in Instrumentation amplifiers.**

- **A. True**
- B. False

**Q13. The output voltage of the op-amp  $V_{out}$  is given by the equation:**

- A.  $V_{out} = A_{OL} (V_+ * V_-)$
- B.  $V_{out} = A_{OL} (V_+ / V_-)$
- **C.  $V_{out} = A_{OL} (V_+ + V_-)$**
- D.  $V_{out} = A_{OL} (V_+ - V_-)$

**Q14. The input offset current equals the \_\_\_\_\_.**

- **A. difference between two base currents**
- B. average of two base currents
- C. collector current divided by current gain
- D. None of the above

**Q15. Slew rate is defined as the:**

- **A. Maximum rate of change of output voltage with time**
- B. Minimum rate of change of output voltage with time
- C. Moderate rate of change of output voltage with time
- D. None of the above

**Q16. The gain of a op-Amp Voltage follower is unity.**

- **A. True**
- B. False

**Q17. Which of the following electrical characteristics is not exhibited by an ideal op-amp?**

- A. Infinite voltage gain
- B. Infinite bandwidth
- **C. Infinite output resistance**
- D. Infinite slew rate

**Q18. An ideal op-amp requires infinite bandwidth because \_\_\_\_.**

- **A. Signals can be amplified without attenuation**
- B. Output can drive infinite number of device
- C. Output voltage occurs simultaneously with input voltage changes
- D. Output common-mode noise voltage is zero

**Q19. Ideal op-amp has infinite voltage gain \_\_\_\_.**

- A. to control the output voltage
- **B. to obtain finite output voltage**
- C. to receive zero noise output voltage
- D. None of the above

**Q20. The common-mode gain is very low.**

- **A. True**
- B. False

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