



# Analog Electronics-II (AE-II)

## Assignments

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### • Assignment No. 1

1. What are the factors affecting the bandwidth of RC Coupled Amplifier. Explain in detail.
2. Explain Miller's Effect and Miller Capacitance.
3. What is Multistage Amplifier? Derive expression for  $A_v$ ,  $R_i$ ,  $R_o$  for two stage RC Coupled CE-CE Amplifier.
4. Write short note on Darlington Pair Amplifier.
5. Design two stage RC Coupled CE amplifier for the following Specifications, use BC 147A. ( $A_v=1500$ ,  $S_{ICO}=10$ ,  $F_L=10$  Hz,  $V_{CC}=10V$ ).

### • Assignment No. 2

1. What are the different types of Differential Amplifier? Explain in detail.
2. Difference between differential and common mode gain.
3. What are the methods of improving CMRR?
4. Explain Small signal Analysis for differential amplifier.
5. Explain DC transfer characteristics of MOSFET Differential Amplifier.

### • Assignment No. 3

1. Draw a neat diagram of a Widler current source. Derive relationship between the reference and bias currents.
2. Write short note on Current Mirror Circuit with 3 Transistor BJT.
3. Compare Wilson and Widler Current Source.
4. Write short note on Cascode MOSFET.
5. Differentiate between two Transistors and Three transistor Current Sources.

Please Contact for any correction or Update:

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- **Assignment No. 4**

1. Explain the working of transformer coupled Class A amplifier.
2. Write short note on Power Amplifiers.
3. Write short note on Input Buffer Transistor.
4. Compare Class A, B & AB Power Amplifiers.
5. Compare Power BJT & Power MOSFET.

- **Assignment No. 5**

1. List the characteristics of ideal OPAMP and compare with the Practical ones.
2. Draw the circuit diagram for a summing Amplifier & determine the expression of output voltage  $V_o$ .
3. Write short note on Practical Integrator.
4. Differentiate between Active and Passive Integrator.
5. Define Slew Rate, Thermal Drift, CMRR, and PSRR.

- **Assignment No. 6**

1. Write Short note on Zener Shunt Regulator.
2. With the help of a neat circuit diagram explain the working of Transistorized series Regulator.
3. Difference between Load & Line Regulation.
4. Write short note on DC Regulated Power Supply.
5. Compare Series & Shunt Regulator.

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