

1. Why the leakage current should be minimum? In which transistor configuration the leakage current comes out to be maximum? What is the relation between I_{CBO} and I_{CEO} ? (4.0 Marks) [CO1] [IOCQ]

OR

Draw the i/p and o/p characteristics of CE transistor configuration. Mark the active, cutoff and saturation regions. What is dynamic input resistance? Increase in collector emitter voltage from 5 to 10 volts causes increase in collector current from 5 mA to 5.8mA. Determine the dynamic output resistance

2. Why the Operational Amplifier need to be operated in feedback configurations in general? use suitable examples. (4.0 Marks) [CO2] [IOCQ]

OR

Draw and explain the JK flip flop with its truth table and characteristic equations. What is race around condition?

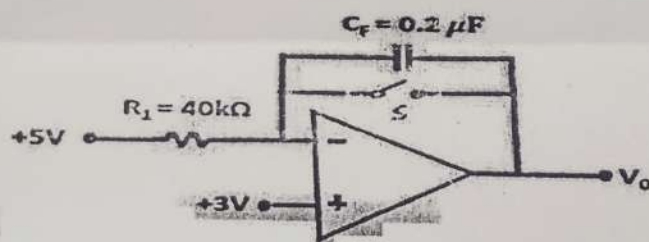
3. Derive the value of efficiency in case of half wave and full wave rectifier. (3.0 Marks) [CO1] [LOCQ]

OR

✓ Explain the working of Zener diode as voltage regulator.

4. Find V_o of the system given below for the case, (a) when switch S is open and (b) switch is closed.

(4.0 Marks) [CO2] [HOCQ]



OR

Minimize the following expression using K map: $Y(A, B, C, D) = \sum (0, 1, 2, 3, 4, 5, 6, 7, 11, 13, 14)$ and draw the simplified circuit diagram.