

EC 8351 Electronic Circuits- I
Important 13mark questions

Unit I

1. What is D. C. load line? How will you select the operating point, explain it using common emitter amplifier characteristics as an example?
2. Explain voltage divider bias method for BJT and derive an expression for stability factors.

Unit II

1. Examine the circuit diagram for a differential amplifier using BJT's. Describe its common mode and differential mode operation.
2. Analyze the changes in the AC characteristics of a common emitter amplifier when an emitter resistor and an emitter bypass capacitor are incorporated in the design. Explain with necessary equations.

Unit III

1. Derive voltage gain, input and output impedance of common source JFET amplifier with neat circuit diagram and equivalent circuit.
2. Demonstrate the working of MOSFET source follower with its small signal equivalent circuit. Derive its voltage gain, current gain and output impedance.

Unit IV

1. Derive the expressions for the short circuit current gain of common emitter amplifier at high frequency.
2. Derive the expression for the short circuit current gain of common emitter amplifier at a high frequency. Define alpha cut-off frequency, beta cut-off frequency and transition frequency and derive their values in terms of the circuit parameters.

Unit V

1. Elucidate the process and procedure of troubleshooting and fault analysis in electronic circuits.
2. Demonstrate the design and working of regulated dc power supply.