44 Lecture - PHY301

Important Mcqs

In an emitter-stabilized bias circuit, the base voltage is:

A) fixed

B) variable

C) equal to the collector voltage

D) equal to the emitter voltage

Answer: B) variable

What is the purpose of the emitter resistor in an emitter-stabilized bias circuit?

A) to provide a voltage drop across the base-emitter junction

B) to provide a voltage drop across the collector-emitter junction

C) to stabilize the bias point against changes in transistor characteristics

D) to increase the gain of the circuit

Answer: C) to stabilize the bias point against changes in transistor characteristics

In an emitter-stabilized bias circuit, the load line represents:

A) the voltage across the transistor

B) the current through the transistor

C) the power dissipated by the transistor

D) the operating point of the transistor

Answer: B) the current through the transistor

If the emitter resistor in an emitter-stabilized bias circuit is increased, what happens to the operating point?

A) it moves up the load line

B) it moves down the load line

C) it stays at the same point on the load line

D) it cannot be determined without additional information

Answer: B) it moves down the load line

In an emitter-stabilized bias circuit, what is the effect of increasing the collector resistor?

A) it increases the voltage gain of the circuit

B) it decreases the voltage gain of the circuit

C) it has no effect on the voltage gain of the circuit

D) it causes the circuit to become unstable

Answer: B) it decreases the voltage gain of the circuit

The operating point of an emitter-stabilized bias circuit is determined by:

A) the intersection of the load line and the transistor characteristic curve

B) the value of the emitter resistor

C) the value of the collector resistor

D) the value of the base resistor

Answer: A) the intersection of the load line and the transistor characteristic curve

In an emitter-stabilized bias circuit, what is the purpose of the bypass capacitor?

A) to filter out high-frequency signals

B) to provide a low-impedance path for AC signals

C) to reduce the DC voltage drop across the emitter resistor

D) to prevent oscillations in the circuit

Answer: C) to reduce the DC voltage drop across the emitter resistor

The Q point of an emitter-stabilized bias circuit is:

A) the same as the operating point

B) the point where the load line intersects the transistor characteristic curve

C) the point where the load line intersects the voltage axis

D) the point where the load line intersects the current axis

Answer: A) the same as the operating point

What is the effect of decreasing the value of the base resistor in an emitter-stabilized bias circuit?

A) it increases the voltage gain of the circuit

B) it decreases the voltage gain of the circuit

C) it has no effect on the voltage gain of the circuit

D) it causes the circuit to become unstable

Answer: D) it causes the circuit to become unstable

The purpose of the load line in an emitter-stabilized bias circuit is to:

A) represent the voltage gain of the circuit

B) represent the current gain of the circuit

C) determine the operating point of the circuit

D) determine the bias point of the circuit

Answer: C) determine the operating point of the circuit