

31 Lecture - PHY301

Important Mcqs

What is the forward voltage drop of a silicon junction diode?

- A. 0.2 volts
- B. 0.5 volts
- C. 0.7 volts
- D. 1.0 volts

Answer: C. 0.7 volts

In which configuration of a junction diode, the positive terminal of a voltage source is connected to the p-type semiconductor and the negative terminal to the n-type semiconductor?

- A. Reverse bias
- B. Forward bias
- C. Both A and B
- D. None of the above

Answer: B. Forward bias

What is the reverse breakdown voltage of a junction diode?

- A. The voltage at which the diode experiences a sudden increase in current flow in the forward bias configuration.
- B. The voltage at which the diode experiences a sudden decrease in current flow in the reverse bias configuration.
- C. The voltage at which the diode experiences a sudden increase in current flow in the reverse bias configuration.
- D. The voltage at which the diode experiences a sudden decrease in current flow in the forward bias configuration.

Answer: C. The voltage at which the diode experiences a sudden increase in current flow in the reverse bias configuration.

What is the capacitance of a junction diode?

- A. The property of the p-n junction to behave like a capacitor.
- B. The property of the p-n junction to behave like an inductor.
- C. The property of the p-n junction to behave like a resistor.
- D. None of the above.

Answer: A. The property of the p-n junction to behave like a capacitor.

What is the temperature dependence of the forward voltage drop of a junction diode?

- A. The forward voltage drop of a junction diode increases as the temperature increases.
- B. The forward voltage drop of a junction diode decreases as the temperature increases.
- C. The forward voltage drop of a junction diode remains constant with temperature.
- D. None of the above.

Answer: B. The forward voltage drop of a junction diode decreases as the temperature increases.

What is the temperature dependence of the reverse breakdown voltage of a junction diode?

- A. The reverse breakdown voltage of a junction diode increases as the temperature increases.
- B. The reverse breakdown voltage of a junction diode decreases as the temperature increases.
- C. The reverse breakdown voltage of a junction diode remains constant with temperature.
- D. None of the above.

Answer: A. The reverse breakdown voltage of a junction diode increases as the temperature increases.

What is the Zener effect in a junction diode?

- A. The mechanism of the forward breakdown of a junction diode.
- B. The mechanism of the reverse breakdown of a junction diode due to the collision of free electrons with atoms in the depletion region.
- C. The mechanism of the reverse breakdown of a junction diode due to the generation of minority carriers at a high electric field in the depletion region.
- D. None of the above.

Answer: C. The mechanism of the reverse breakdown of a junction diode due to the generation of minority carriers at a high electric field in the depletion region.

What is the avalanche effect in a junction diode?

- A. The mechanism of the forward breakdown of a junction diode.
- B. The mechanism of the reverse breakdown of a junction diode due to the collision of free electrons with atoms in the depletion region.
- C. The mechanism of the reverse breakdown of a junction diode due to the generation of minority carriers at a high electric field in the depletion region.
- D. None of the above.

Answer: B. The mechanism of the reverse breakdown of a junction diode due to the collision of free electrons with atoms in the depletion region.