# 29 Lecture - PHY301

## **Important Mcqs**

## What is the typical forward voltage drop for a silicon PN junction diode?

A. 0.3V

B. 0.5V

C. 0.7V

D. 1.0V

Answer: C. 0.7V

#### What is the depletion region of a PN junction?

A. The region where the mobile charge carriers are depleted

B. The region where the mobile charge carriers are accumulated

C. The region where the doping concentration is highest

D. The region where the doping concentration is lowest

Answer: A. The region where the mobile charge carriers are depleted

#### What is reverse saturation current?

- A. The current that flows in the forward direction when the diode is forward-biased
- B. The current that flows in the reverse direction when the diode is forward-biased
- C. The current that flows in the forward direction when the diode is reverse-biased
- D. The current that flows in the reverse direction when the diode is reverse-biased

## Answer: D. The current that flows in the reverse direction when the diode is reverse-biased

#### What is the breakdown voltage of a PN junction diode?

- A. The voltage at which the diode turns on
- B. The voltage at which the diode turns off

- C. The voltage at which the diode starts to conduct heavily in the forward direction
- D. The voltage at which the diode breaks down and allows a large current to flow in the reverse direction

Answer: D. The voltage at which the diode breaks down and allows a large current to flow in the reverse direction

#### What is the diode equation?

- A. An empirical relationship between the current flowing through a PN junction diode and the voltage across it
- B. A mathematical relationship between the resistance of a diode and its temperature coefficient
- C. A relationship between the doping concentration of a diode and its breakdown voltage
- D. A relationship between the size of a diode and its maximum power dissipation

Answer: A. An empirical relationship between the current flowing through a PN junction diode and the voltage across it

#### What is the typical reverse leakage current of a silicon PN junction diode?

- A. Microamperes
- B. Milliamperes
- C. Amperes
- D. The reverse leakage current of a diode is always zero

Answer: A. Microamperes

#### What is the ideality factor of a PN junction diode?

- A. A measure of how closely the behavior of a diode follows the ideal diode equation
- B. A measure of the temperature coefficient of a diode
- C. A measure of the doping concentration of a diode
- D. A measure of the physical size of a diode

Answer: A. A measure of how closely the behavior of a diode follows the ideal diode equation

#### What happens to the forward current through a diode as the forward voltage is increased?

A. It remains constant

B. It decreases C. It increases exponentially D. It increases linearly **Answer: C. It increases exponentially** What happens to the reverse current through a diode as the reverse voltage is increased? A. It remains constant B. It decreases C. It increases exponentially D. It increases linearly **Answer: C. It increases exponentially** What is the typical reverse breakdown voltage for a silicon PN junction diode? A. 5V B. 10V C. 50V **D. 100V** 

Answer: C. 50V