27 Lecture - PHY301

Important Mcqs

What is intrinsic silicon?

- a. A type of metal
- b. A type of semiconductor material made from pure silicon atoms
- c. A type of insulator
- d. A type of superconductor

Answer: b

What is the bandgap of intrinsic silicon?

a. 0.5 eV

b. 1.12 eV

c. 1.5 eV

d. 2.0 eV

Answer: b

How does intrinsic silicon conduct electricity?

- a. Through the movement of free electrons only
- b. Through the movement of holes only
- c. Through the movement of both free electrons and holes
- d. Intrinsic silicon does not conduct electricity

Answer: c

What is the photoelectric effect?

- a. The movement of free electrons and holes in a semiconductor material
- b. The generation of a flow of electricity when light strikes the surface of a material

- c. The ability of a material to resist the flow of electricity
- d. The transfer of heat between two objects

Answer: b

How is intrinsic silicon different from doped silicon?

- a. Intrinsic silicon is a metal, while doped silicon is a semiconductor
- b. Intrinsic silicon has impurities added to it, while doped silicon is pure

c. Intrinsic silicon is a semiconductor made from pure silicon atoms, while doped silicon has impurities added to alter its electronic properties

d. Intrinsic silicon and doped silicon have the same electronic properties

Answer: c

What is the crystal structure of intrinsic silicon?

- a. Amorphous
- b. Polycrystalline
- c. Crystalline
- d. Liquid
- Answer: c

What is the role of electrons in the electronic properties of intrinsic silicon?

- a. Electrons are not involved in the electronic properties of intrinsic silicon
- b. Electrons are responsible for the ability of intrinsic silicon to conduct electricity
- c. Electrons are responsible for the color of intrinsic silicon
- d. Electrons are responsible for the strength of intrinsic silicon

Answer: b

What are some electronic devices that use intrinsic silicon?

- a. Transistors, diodes, and solar cells
- b. Batteries, resistors, and capacitors

- c. Microphones, speakers, and headphones
- d. Antennas, filters, and amplifiers
- Answer: a

What is p-type silicon?

- a. Silicon with an excess of free electrons
- b. Silicon with a surplus of holes
- c. Silicon with both an excess of free electrons and a surplus of holes
- d. Silicon without any impurities

Answer: b

Why is intrinsic silicon an ideal semiconductor material?

- a. Because it has a large bandgap
- b. Because it is a good insulator
- c. Because it is a good conductor of electricity

d. Because of its unique electronic properties, including its small bandgap and ability to conduct electricity through the movement of free electrons and holes

Answer: d