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Crash Course Chemistry #35: Silicon

Name: _____ Date: _____

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1. Silicon is the most abundant element in the Earth's _____.
2. Oxides of silicon are known as _____.
3. Silica has the chemical formula _____.
4. The basic structure of silica is a _____ arrangement.
5. Glass is an example of an _____ solid.
6. Unlike quartz, glass does not have a defined melting point because it is not a true _____.
7. Silicon-based materials like quartz and ceramics are electrical _____.
8. The process of adding impurities to silicon to change its electrical properties is called _____.
9. Doping silicon with elements that have more electrons than silicon creates _____ semiconductors.
10. Doping silicon with elements like boron, which have fewer electrons, creates _____ semiconductors.
11. When N-type and P-type semiconductors are placed together, they form a _____.
12. A diode that blocks current flow is in _____ bias.
13. A diode that allows current to flow is in _____ bias.
14. A combination of three layers of semiconductors creates a device called a _____.
15. Transistors form the basis of _____ code, the language of computers.

Crash Course Chemistry #35: Silicon KEY

1. Silicon is the most abundant element in the Earth's **crust**.
2. Oxides of silicon are known as **silicates**.
3. Silica has the chemical formula **SiO₂**.
4. The basic structure of silica is a **tetrahedral** arrangement.
5. Glass is an example of an **amorphous** solid.
6. Unlike quartz, glass does not have a defined melting point because it is not a true **crystal**.
7. Silicon-based materials like quartz and ceramics are electrical **insulators**.
8. The process of adding impurities to silicon to change its electrical properties is called **doping**.
9. Doping silicon with elements that have more electrons than silicon creates **N-type** semiconductors.
10. Doping silicon with elements like boron, which have fewer electrons, creates **P-type** semiconductors.
11. When N-type and P-type semiconductors are placed together, they form a **diode**.
12. A diode that blocks current flow is in **reverse** bias.
13. A diode that allows current to flow is in **forward** bias.
14. A combination of three layers of semiconductors creates a device called a **transistor**.
15. Transistors form the basis of **binary** code, the language of computers.

15 Questions

Answer Key Included

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