



Name _____ Class _____ Date _____

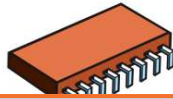
1 Donor materials are added to semiconductors so that the number of available electrons will

- A decrease
- B increase
- C remain the same



3 Magnetic-card door locks utilize many electronic components on one small piece of semiconductor material. This combination of components on a single chip is called

- A a transistor
- B an integrated circuit



2 A material having extremely low conductivity would be classified as

- A a conductor
- B a semiconductor
- C an insulator
- D a metalloid

4 The Band Model has replaced the Electron-sea Model of conduction because the Electron-sea Model

- A only works for gases
- B only works for liquids
- C does not account for the conduction properties of metals



PREVIEW

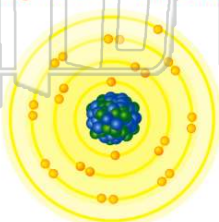
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7
B increase
C remain the same

- B electron-sea model
- C band model
- D doping model

9 As a donor material, arsenic provides a semiconducting material with extra

- A electrons
- B holes
- C protons
- D neutrons



10 In a working transistor circuit, as the emitter-base current is increased, the collector current

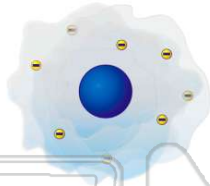
- A decreases a small amount
- B decreases a large amount
- C increases a small amount
- D increases a large amount



ANSWER KEY

Donor materials are added to semiconductors so that the **number of available electrons** will

- A** decrease
- B** increase
- C** remain the same



(b)

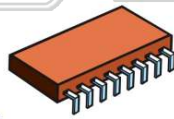
A material having **extremely low conductivity** would be classified as

- A** a conductor
- B** a semiconductor
- C** an insulator
- D** a metalloid

(c)

Magnetic-card door locks utilize many electronic components on one small piece of semiconductor material. This **combination of components on a single chip** is called

- A** a transistor
- B** an integrated circuit
- C** a printed circuit board



(b)

The **Band Model** has replaced the Electron-sea Model of conduction because the **Electron-sea Model**

- A** only works for gases
- B** only works for liquids
- C** does not account for the conduction properties of metals
- D** does not account for the conduction

(d)



PREVIEW

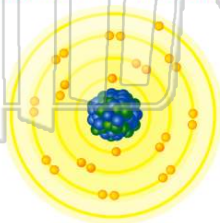
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C remain the same

D doping model

As a donor material, **arsenic** provides a **semiconducting material with extra**

- A** electrons
- B** holes
- C** protons
- D** neutrons



(a)

In a working transistor circuit, as the **emitter-base current is increased**, the **collector current**

- A** decreases a small amount
- B** decreases a large amount
- C** increases a small amount
- D** increases a large amount

(d)