TEST ON SEMICONDUCTORS

1. Intrinsic semiconductor material is characterized by a valence shell of how many electrons?
   A. 1
   B. 2
   C. 4
   D. 6

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2. What is an energy gap?
   A. the space between two orbital shells
   B. the energy equal to the energy acquired by an electron passing a 1 V electric field
   C. the energy band in which electrons can move freely
   D. an energy level at which an electron can exist

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3. Silicon atoms combine into an orderly pattern called a:
   A. covalent bond
   B. crystal
   C. semiconductor
   D. valence orbit

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4. In "n" type material, majority carriers would be:
   A. holes
   B. dopants
   C. slower
   D. electrons

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5. Elements with 1, 2, or 3 valence electrons usually make excellent:
   A. conductors
   B. semiconductors
   C. insulators
   D. neutral

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6. A commonly used pentavalent material is:
   A. arsenic
   B. boron
   C. gallium
   D. neon

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7. Which material may also be considered a semiconductor element?
   A. carbon
   B. ceramic
   C. mica
   D. argon

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8. In "p" type material, minority carriers would be:
   A. holes
   B. dopants
   C. slower
   D. electrons

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9. Electron pair bonding occurs when atoms:
   A. lack electrons
   B. share holes
   C. lack holes
   D. share electrons

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10. When an electron jumps from the valence shell to the conduction band, it leaves a gap. What is this gap called?
    A. energy gap
    B. hole
    C. electron-hole pair
    D. recombination

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11. Which of the following cannot actually move?
    A. majority carriers
    B. ions
    C. holes
    D. free electrons

Complete the scheme with the necessary information: