

Electronic Circuits – Tutorial 01

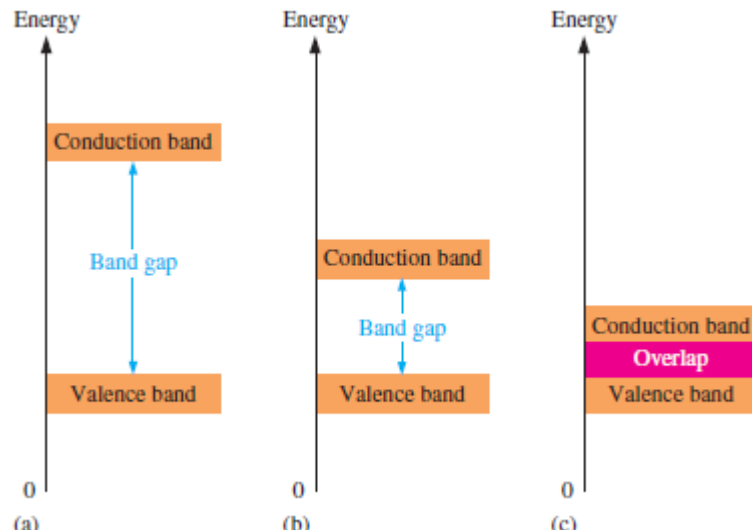
Introduction to Electronics



#	Question	Answer
1	Valence electrons are (a) in the closest orbit to the nucleus (b) in the most distant orbit from the nucleus (c) in various orbits around the nucleus (d) not associated with a particular atom	b
2	A positive ion is formed when (a) a valence electron breaks away from the atom (b) there are more holes than electrons in the outer orbit (c) two atoms bond together (d) an atom gains an extra valence electron	a
3	In a semiconductor crystal, the atoms are held together by (a) the interaction of valence electrons (b) forces of attraction (c) covalent bonds (d) answers (a), (b), and (c)	d
4	The atomic number of silicon is (a) 8 (b) 2 (c) 4 (d) 14	d

Q1	If the atomic number of a neutral atom is 6, how many electrons does the atom have? How many protons?
Sol 1	6 electrons; 6 protons

Q2	What is the maximum number of electrons that can exist in the 3rd shell of an atom?
Sol 2	18

Q3	<p>For each of the energy diagrams in Figure 1-21, determine the class of material based on relative comparisons.</p> 
Sol 3	<p>A: isolator B: semi conductor C: conductor</p>

Q4	What happens when heat is added to silicon?
Sol 4	Electrons leave valance band to conduction band