

Section 8.1

1. How does a covalent bond form?
2. What are some properties of ionic compounds?
3. What is a molecule?
4. Describe an oxygen molecule
5. Why are there no molecules of ionic compounds?
6. What are the properties of molecular compounds?
7. What kinds of atoms make a molecular compound?
8. What is a molecular formula?
9. What doesn't a molecular formula show you?
10. How is the structure of a water molecule different from a carbon dioxide molecule?

Section 8.2

1. What is the difference between oxygen and ozone?
2. How does a covalent bond form?
3. Why does a covalent bond form?
4. How does hydrogen do this?
5. How does the electron dot diagram show a covalent bond?
6. What is a structural formula?
7. How do halogens form molecules?
8. What is a lone pair?
9. How does water form a molecule?
10. How many bonds does carbon usually form?
11. How does it form this many bonds?
12. What is a double covalent bond?
13. What is a triple covalent bond?
14. How does oxygen not follow the octet rule?
15. How is carbon dioxide bonded?
16. What is a coordinate covalent bond?
17. How do you show a coordinate covalent bond in a structural formula?
18. What is the ammonium ion?
19. What is a polyatomic ion?
20. What two types of bonds are there in a polyatomic ion?
21. What does the negative charge of the polyatomic ion show?
22. How is this charged balanced out?
23. What happens to the energy when a hydrogen molecule forms?
24. What is the bond dissociation energy?
25. How many bonds in a mole of bonds?
26. What is the bond dissociation energy of the three types of carbon-carbon bonds?
27. Why are carbon compounds so stable?
28. How are the two structures of ozone related?
29. Why do they call it resonance?
30. What do the experiment tells us about ozone's bonds?
31. What is the actual bond in ozone like?
32. What is a resonance structure?
33. What types of molecules don't follow the octet rule?
34. How do you draw the electron dot diagram of molecules that don't follow the octet rule?
35. How do compounds of boron break the octet rule?
36. How do compounds of sulfur and phosphorus break the octet rule?

Section 8.3

1. How does the quantum mechanical model of bonding describe the electrons of molecules?
2. What is a bonding orbital?
3. Describe a sigma bond?
4. How do nuclei affect each other?
5. Describe the bond between p orbitals in fluorine?
6. What is a pi bond?
7. Why are pi bonds weaker?
8. What do electron dot structures fail to do?
9. How are the atoms arranged in methane?
10. According to the VSEPR theory what affects the shape?
11. What is the angle of the bonds in methane?
12. Why is the angle in ammonia smaller?
13. Why is the angle even smaller in water?
14. Why is the angle in carbon dioxide 180°?
15. What does orbital hybridization provide information about?
16. How does the sp³ orbital form?
17. What angle is associated with sp³ hybridization?
18. How does the sp² orbital form?
19. What angle is associated with sp² hybridization?
20. What two types of bonds form in ethane?
21. How does the sp orbital form?
22. What angle is associated with sp hybridization?

Section 8.4

1. What does the character of the bond depend on?
2. What is a nonpolar covalent bond?
3. What makes a polar bond?
4. Why does a polar bond form?
5. Why is the HCl molecule polar?
6. How do they indicate the charge?
7. How else do they indicate that it is polar?
8. What numbers tell you if a bond is polar?
9. What is a polar molecule?
10. How do they test for polar molecules?
11. What two things does the effect of a polar bond depend on?
12. What is the strength of intermolecular bond?
13. What can intermolecular forces determine?
14. What are the two types of van der Waal's forces?
15. What causes dipole interactions?
16. What are dipole interactions similar to?
17. What causes dispersion forces?
18. How long do dispersion forces last?
19. What increases dispersion forces?
20. How are the atoms charged in a water molecule?
21. What types of atoms are involved in a hydrogen bond?
22. How does shielding play a role in hydrogen bonding?
23. How strong is a hydrogen bond?
24. What are they important in determining?
25. What determines the properties of a compound?
26. Why do molecular compounds have low melting points?
27. What is a network solid?
28. What is true of the melting point of network solids?
29. How can you think of network solids?
30. List three ways ionic and covalent compounds are different from each other.