



17. Draw and label the shape of the s and p orbitals.

S – orbital

P – orbital

18. What orbital is filled after the 3s orbital? \_\_\_\_\_  
19. What orbital is filled after the 4p orbital? \_\_\_\_\_  
20. What orbital is filled after the 3d orbital? \_\_\_\_\_  
21. What orbital is filled after the 2s orbital? \_\_\_\_\_

22. Draw the electron configuration for the following atoms.

a. Magnesium (Mg)

b. Selenium (Se)

23. Write the orbital diagrams for the following atoms.

a. Gallium (Ga)

b. Chlorine (Cl)

24. Write the noble gas configuration for the following atoms.

a. Iodine (I)

b. Titanium (Ti)

c. Barium (Ba)

25. Explain the steps on how visible light is produced?

a. Electrons are in \_\_\_\_\_.

b. Electrons \_\_\_\_\_ energy.

c. Electrons are in \_\_\_\_\_.

d. Electrons \_\_\_\_\_ to \_\_\_\_\_ and energy is \_\_\_\_\_.

e. \_\_\_\_\_ is emitted.

On the visible spectrum identify the **color** with the following characteristics.

26. Visible light with the shortest wavelength

27. Visible light with the longest wavelength

28. Visible light with the highest energy

29. Visible light with the lowest energy

30. Visible light with the highest frequency

31. Visible light with the lowest frequency