

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Chapter 2.2 Electrons in Atoms

*Define the following terms. For the people, state their discovery or accomplishments.*

1. JJ Thomson: \_\_\_\_\_

\_\_\_\_\_

2. Electrons: \_\_\_\_\_

\_\_\_\_\_

3. Bohr: \_\_\_\_\_

\_\_\_\_\_

4. Electron Magnetic Spectrum: \_\_\_\_\_

\_\_\_\_\_

5. Emission Spectrum: \_\_\_\_\_

\_\_\_\_\_

6. Electron Cloud: \_\_\_\_\_

\_\_\_\_\_

7. Valence Electrons: \_\_\_\_\_

\_\_\_\_\_

8. Lewis Dot Diagram: \_\_\_\_\_

\_\_\_\_\_

9. Amplitude: \_\_\_\_\_

\_\_\_\_\_

10. Wavelength: \_\_\_\_\_

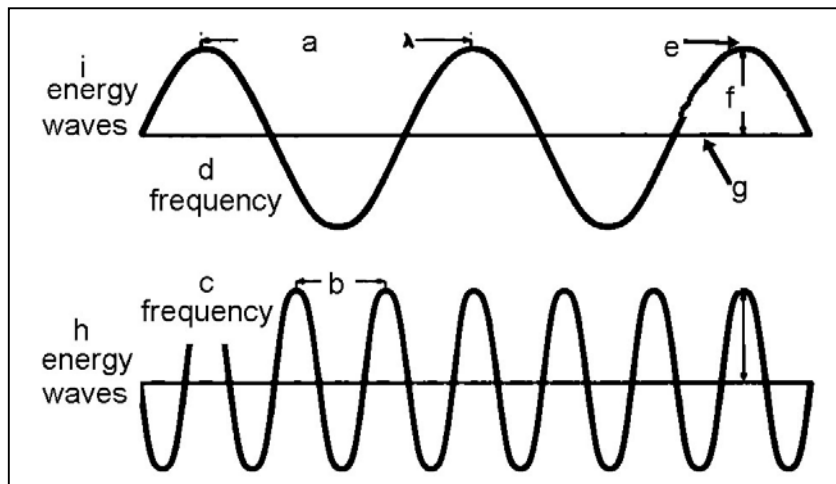
\_\_\_\_\_

11. Frequency: \_\_\_\_\_

\_\_\_\_\_

12. Assign the letters from the picture to the correct terms on the left.

- \_\_\_\_\_ high frequency
- \_\_\_\_\_ low frequency
- \_\_\_\_\_ origin
- \_\_\_\_\_ high energy wave
- \_\_\_\_\_ low energy wave
- \_\_\_\_\_ amplitude
- \_\_\_\_\_ long wavelength
- \_\_\_\_\_ short wavelength
- \_\_\_\_\_ crest



13. List the seven different forms of electromagnetic energy from highest to lowest energy.

*Page 72 in text book or on you need to know sheet*

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

14. State at least **four** properties of electromagnetic waves. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

15. In Bohr's atomic model as well as the electron cloud model, what happens to the **size** and **amount of energy** of an energy level as you move farther away from the nucleus?  
 \_\_\_\_\_  
 \_\_\_\_\_

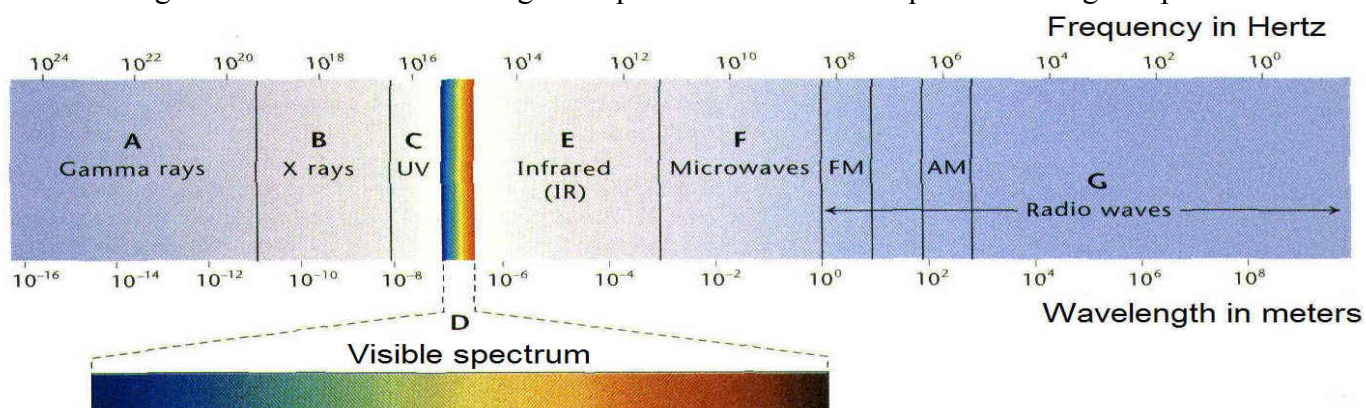
16. What is the formula for calculating the maximum number of electrons in each energy level? \_\_\_\_\_

17. (Use formula above) What is the maximum number of electrons in the third (n = 3) energy level? \_\_\_\_\_

Show work here:



22. The diagram below is the electromagnetic spectrum. Answer the questions using this picture.



- Which wave has the **highest frequency**? \_\_\_\_\_
- Which wave has the **shortest wavelength**? \_\_\_\_\_
- Which wave has the **longest wavelength**? \_\_\_\_\_
- Which wave has the **lowest energy**? \_\_\_\_\_
- Which wave has the **highest energy**? \_\_\_\_\_

**From Literature Circles...**

23. What is the light emitted in an **aurora borealis** the result of? (see your textbook)

---



---



---



---

24. What are the four basic ingredients used to make fireworks? (see your textbook)

---

25. Where did early clothing dyes come from?

---

26. How do tungsten-filament light bulbs give off white light that is similar to the sun?

---



---