

Quiz #18

Electron configurations, etc.

1. How many lobes does a **p** orbital have?

- A. One
- B. Two
- C. Three
- D. Four
- E. No lobes – other shape

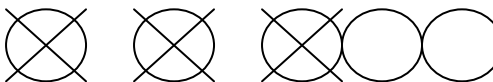
2. How many lobes does a **$d_{x^2 - y^2}$** orbital have?

- A. One
- B. Two
- C. Three
- D. Four
- E. No lobes – other shape

3. Which of the following orbitals has the *highest energy* associated with it?

- A. 1s
- B. 2s
- C. 3s
- D. 2p
- E. 3p

4. What rule is being broken here?

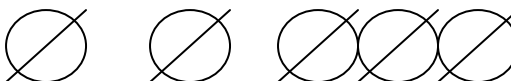


- A. Hund's rule
- B. Pauli exclusion principle
- C. Aufbau principle
- D. Freije principal
- E. No rules are being broken – all is correct as written

5. What is the *electron configuration* for an atom of boron?

- A. $2p^2$
- B. $1s^1 2p^1$
- C. $1s^2 2s^2$
- D. $1s^2 2p^1 2p^2$
- E. $1s^2 2s^2 2p^1$

6. What rule is being broken here?



- A. Hund's rule
- B. Pauli exclusion principle
- C. Aufbau principle
- D. Freije principal
- E. No rules are being broken – all is correct as written

7. How many TOTAL electrons can fit on the *third energy level*?
- 2
 - 10
 - 18
 - 32
 - 64
8. What is the most number of electrons that any *single orbital* can have?
- 2
 - 10
 - 14
 - 32
 - 64
9. How many different orbitals (s, p, d, f) exist in the *second energy level*?
- 1
 - 2
 - 3
 - 4
 - 5
10. Which of the following is *FALSE*?
- The s orbital is spherical in shape.
 - The p_z orbital is aligned on the z axis.
 - The d_z^2 orbital is aligned on the z axis.
 - The d_{xy} orbital is aligned on the x and y axis.
 - There are 7 different f orbitals.
11. In an electron configuration the number that is in the *superscript* tells you the:
- Energy level
 - Number of electrons in that orbital
 - Number of electrons in the atom
 - Orbital number
 - Hund's rule number

12. What is the name of this orbital?

- s
- p_x^2
- p_x
- d_{xy}
- d_x^2

