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| How to draw electron configurations (first two types…)CλeMis+ry: http://genest.weebly.com Stop in for help every day at lunch and Tues, Weds., &Thurs after school!After-hours question? Email me at home: eagenest@madison.k12.wi.us |  | Name\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_ |

*Assume all atoms have neutral charge unless otherwise stated.*

1. Name two things you can do to an atom which will cause an electron to rise to a higher orbit:
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the mass of each, (in a.m.u.s)? \_\_\_\_\_\_\_\_proton \_\_\_\_\_\_\_\_neutron \_\_\_\_\_\_\_\_ electron
3. Which has more energy,
	1. yellow light
	2. green light

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| 1. Draw the dot-dash and circles electron configurations for carbon
 | 1. Draw the dot-dash and circles electron configurations for the most common ion of oxygen
 |
| 1. Draw the dot-dash and circles electron configurations for oxygen
 | 1. Draw the dot-dash and circles electron configurations for the lowest mass element in Group 3
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1. What is the charge of each, (choose 0, +1, or -1)? \_\_\_\_\_proton \_\_\_\_\_neutron \_\_\_\_\_ electron
2. When an orbiting electron loses energy the atom emits a
	1. photon
	2. neutron
	3. proton
	4. nucleon

Place the following events in chronological order (1 = first, 4 = last) to describe how an electron absorbs and emits energy:

* electron absorbs energy at ground state. \_\_\_\_\_\_
* electron jumps to excited state. \_\_\_\_\_\_
* atom is energized with electricity. \_\_\_\_\_\_
* electron falls to ground state. \_\_\_\_\_\_

\*\* Put a star by the step where light is emitted.

**The next four questions all refer to the black arrows below which show three *possible* transitions for an electron orbiting around a nucleus**

1.  Lines 1, 2, and 3 all represent an electron dropping down. When this happens the atom will
	1. Emit a photon
	2. Absorb a photon
	3. Emit a proton
	4. Absorb a proton
2. Of these three electron movements, which is the highest energy?
	1. transition❶
	2. transition ❷
	3. transition ❸
3. If transition ❶ and transition❷ make an orange photon and a green photon, respectively, what color photon might transition ❸ make? \_\_\_\_\_\_\_\_\_\_\_\_ (I will accept any reasonable answer).
4. Draw one new line labeled (6) onto the bright line emission spectrum in the box to showthe position where the light caused by ❻ would appear

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|  | answer here by drawing one vertical line in the correct position |

1. Which of the following statements is most likely?
	1. transition ④ is from the *absorption* of a large amount of energy and transition ⑥ is from the absorption of a small amount of energy
	2. transition ④ is from the *absorption* of a small amount of energy and transition ⑥ is from the absorption of a large amount of energy
	3. transition ④ is from the *emission* of a Blue photon and transition ⑥ is from the absorption of a Blue photon
	4. transition ④ is from the *emission* of a Red photon and transition ⑥ is from the absorption of a red photon
2. Mark (E)xcited state or (G)round state for each of the following electron configurations of neutral atoms.
	1. \_\_\_\_\_\_\_ 0-1-0
	2. \_\_\_\_\_\_\_ 1-0-0
	3. \_\_\_\_\_\_\_ 2-0-0
	4. \_\_\_\_\_\_\_ 0-2-0
3. Which of these will absorb the most energy?
	1. electron transition ④
	2. electron transition ⑤
	3. electron transition ⑥
4. Mark (E)xcited state or (G)round state for each of the following electron configurations of neutral atoms. Then write the 0-0-0 style electron configuration. *(You may find it helpful to number the orbits, starting with 1 for the innermost orbit.)*

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| * 1.
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 |  | * 1.
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1. Circle the drawing below that is usually called a “Bohr Atom” (because it was invented by Niels Bohr)

  