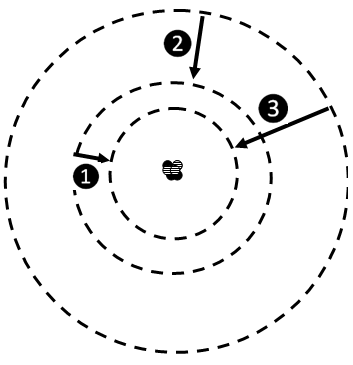
|  |  |  |
| --- | --- | --- |
| How to draw electron configurations the third way  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues, Weds., &Thurs after school!  After-hours question? Email me at home: [eagenest@madison.k12.wi.us](mailto:eagenest@madison.k12.wi.us) | **bohr.jpg** | Name\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_ |

*Assume all atoms*

1. For an atom with 24 electrons,
   1. Fill the electron boxes

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |  | | | |
|  | 1s | |  | | 2s | |  | | 2p | | | | | |  | | 3s | |  | | 3p | | | | | |
|  | *Increasing energy* 🡪 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |  | |  |
|  |  | | | 4s | |  | | 3d | | | | | | | | | |  | 4p | | | | | | | | | | |

1. If one electron moves from n=2 to n=4 the atom will ( emit / absorb ) a photon
2.  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
3. Of these three electron movements, which is the highest energy?
   1. transition❶
   2. transition ❷
   3. transition ❸
4. 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).
5. For an atom with 20 electrons,
   1. Fill the electron boxes

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 1s | |  | | 2s | |  | | 2p | | | | | |  | | 3s | |  | | 3p | | | | | |
|  | *Increasing energy* 🡪 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | |  | |  | |  | |  | |  | |  | |  | |  |  | |  | |  | |  |
|  |  | | | 4s | |  | | 3d | | | | | | | | | |  | 4p | | | | | | | | | | |

1. For a neutral atom of oxygen [in the ground state],
   1. How many electrons should it have? \_\_\_\_\_\_\_\_\_\_
   2. Fill the electron boxes

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | |  |  |  |  |  |  |  |  |  |  |  | |  |  | |
|  | 1s | |  | 2s |  | 2p | | |  | 3s |  | | 3p | | |

1. For an atom with 17 electrons,
   1. Fill the electron boxes

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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| 1s |  | 2s |  | 2p | | |  | 3s |  | | 3p | | |

1. For an atom with 7 electrons,
   1. Fill the electron boxes

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |
| 1s |  | 2s |  | 2p | | |  | 3s |  | | 3p | | |