

Rubric for Classroom Lecture Participation

1. Excellent – The student is actively watching, listening and answering questions as the lecture progresses. The student tries the suggested example problems as the lecture proceeds. The student proves that he/she has learned the material by answering the related questions and working the related problems incorporated in the summative assessment.
2. Good - The student is watching, listening as the lecture proceeds. The student tries the example problems given during the lecture. The student proves that he/she has grasped the concept of the lecture by attempting, with a good degree of accuracy, the related questions and problems on the summative assessment.
3. Average – The student is watching and listening with limited attention. The student has to be reminded to try the example problems given during the lecture. The student attempts the related questions and problems on the summative assessment with a limited degree of accuracy.
4. Poor – The student is not paying attention to the lecture. The student is not attempting the example problems given during the lecture. The student has to be ‘forced’ to try a problem by the instructor standing by them and showing them each step to take to try a problem. The student does not attempt the related questions or problems on the summative assessment.

The Atom's Electron Building Complex

Rules to be followed by all electrons;

1. **Electrons** must enter the lowest energy level available. **Aufbau Principle**
2. **Electrons** will not pair in an orbital until there is at least one electron in each orbital available in a specific type of orbital, 's', 'p', 'd' or 'f'. **Hund's Rule**
3. **Electrons** have a maximum occupancy in any orbital of two electrons which have opposite spins. This statement is also the source of the rule that no two electrons on any atom can have the same four quantum numbers. **Pauli Exclusion Principle**

's' 1 'bedroom' 2 electrons total	'p' 3 'bedrooms' 6 electrons total	'd' 5 'bedrooms' 10 electrons total	'f' 7 'bedrooms' 14 electrons total
's' 1 bedroom 2 electrons total	'p' 3 'bedrooms' 6 electrons total	'd' 5 'bedrooms' 10 electrons total	
's' 1 'bedroom' 2 electrons total	'p' 3 'bedrooms' 2 electrons each 6 electrons total		
's' 1 'bedroom' 2 electrons total			

Write the electron configurations for the following elements:

Na _____

C _____

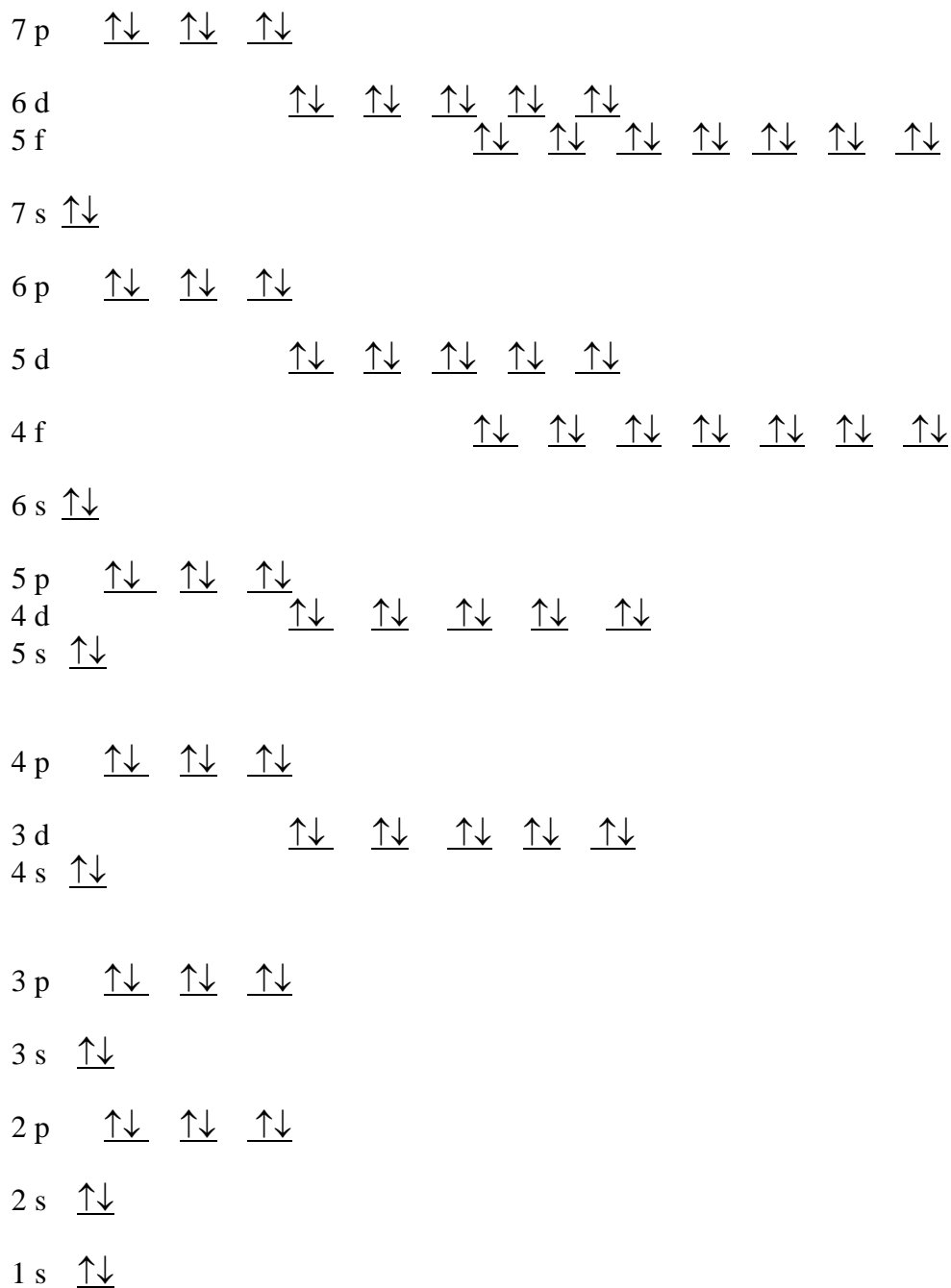
P _____

I _____

Ar _____

This handout was prepared by Rosemary Wilson for use with the lesson plan for teaching students to 'read' the periodic table for electron configuration determinations. This diagram is for instructional purposes only and is not to be used for actual representation of the arrangement of electrons. The program used was Microsoft Word.

Energy Level Diagram for Entry Order of Electrons



Increasing Energy

Electrons enter 1 s first then enter the next lowest blank. This is according to the Aufbau Principle which states that electrons will enter the lowest energy level available.

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instructional purposes and are not to be used to determine actual energy values. The program used was Microsoft Word.