

CHAPTER 4 REVIEW

# ***Arrangement of Electrons in Atoms***

## **SECTION 3**

**SHORT ANSWER** Answer the following questions in the space provided.

1. State the Pauli exclusion principle, and use it to explain why electrons in the same orbital must have opposite spin states.

---

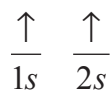
---

---

---

---

2. Explain the conditions under which the following orbital notation for helium is possible:



---

---

**Write the ground-state electron configuration and orbital notation for each of the following atoms:**

3. Phosphorus

4. Nitrogen

5. Potassium

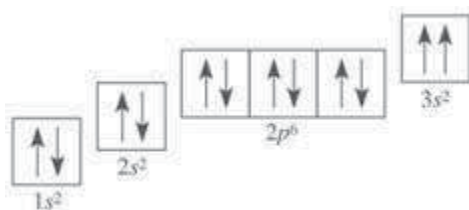
**SECTION 3** *continued*

6. Aluminum

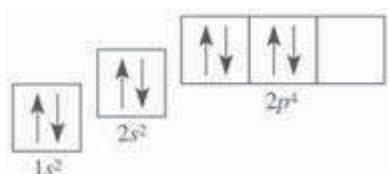
7. Argon

8. Boron

9. Which guideline, Hund's rule or the Pauli exclusion principle, is violated in the following orbital diagrams?



a. \_\_\_\_\_



b. \_\_\_\_\_