

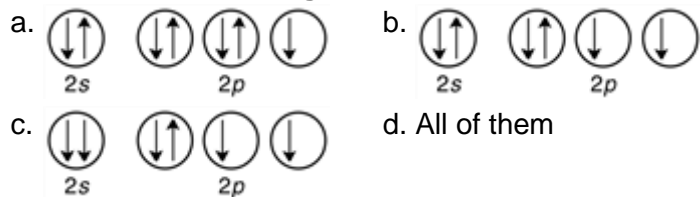
Chapter 03 - Electronic Structure and the Periodic Law

TUTORIAL QUESTIONS

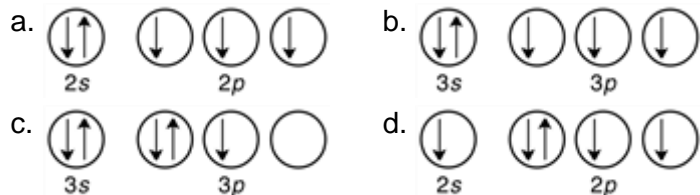
- 1. Which of the following elements is found in the same period of the periodic table as tin?**
a. silicone b. arsenic c. tellurium d. technetium
- 2. Which element is the first one in the group IVA(14) of the periodic table?**
a. C b. Na c. Sc d. Ti
- 3. What is the symbol of the element that is in Period 4, and Group IIA(2) of the periodic table?**
a. Zn b. Ca c. C d. Ti
- 4. Silver, Ag, belongs to what period of the periodic table?**
a. 1 b. 2 c. 5 d. 12
- 5 Which of the following statements applies to p subshells?**
a. The p subshell can contain a maximum of 14 electrons.
b. The p subshell is subdivided into three perpendicular shapes.
c. The p subshell fills with 2 electrons in p_x , then 2 in p_y then 2 in p_z .
d. All of these statements are correct with reference to p subshells.
- 6. Which of the following subshells has the higher energy?**
a. $4s$ b. $4p$ c. $4d$ d. $4f$
- 7. Suppose an electron moved from the second shell to the third shell.**
a. The move required an input of energy.
b. The move gave off energy.
c. Electrons can move spontaneously from shell to shell.
d. Electrons can't move from shell to shell, but can move into the nucleus.
- 8. Which of the following elements has the electronic configuration shown here?**
 $1s^2 2s^2 2p^6 3s^2 3p^1$
a. F b. Al c. Mg d. Ga
- 9. Which of the following pairs have the same number of electrons in the outermost shell?**
a. K and Ca b. S^{4+} and Al^{3+} c. Na^+ and Ne d. Ne and He
- 10. Which of the following correctly arranges the given subshells in order of increasing energy (lowest to highest)?**
a. $2s < 3d < 4s$ b. $4s < 3p < 3s$
c. $2s < 3d < 4p$ d. $4p < 4f < 5s$

TUTORIAL QUESTIONS

11. Which of the following violates the Pauli exclusion principle?



12. Which of the following is the correct valence electron configuration of phosphorus?



13. Which of the following is a representation of a *p* orbital?

