

5th Practice Exam

1. How many electrons can be described by the set of quantum numbers:
 $n = 3, l = 3, m_l = -1, m_s = -1/2$?
 - a. 18
 - b. 6
 - c. 2
 - d. 1
 - e. 0
2. Which of the following elements is a p-block element?
 - a. copper
 - b. chlorine
 - c. chromium
 - d. sodium
 - e. silver
3. What element has the electron configuration $[\text{Kr}] 4d^5 5s^1$?
 - a. W
 - b. Ru
 - c. Mo
 - d. Pm
 - e. Cr
4. How many unpaired electrons are present in Fe^{2+} ?
 - a. 0
 - b. 2
 - c. 4
 - d. 5
 - e. 6

5. Which of the following particles has the lowest 2nd ionization energy?

- a. F
- b. O
- c. Na
- d. Mg
- e. Li

6. Which of the following particles has the largest radius?

- a. He
- b. F⁻
- c. O²⁻
- d. Mg²⁺
- e. N³⁻

7. Which of the following compounds exhibits ionic bonding?

- a. CCl₄
- b. MgCl₂
- c. Cl₂
- d. PCl₃
- e. OF₂

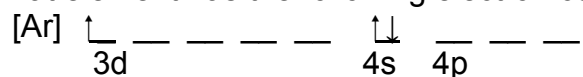
8. Which of the following elements is a d-block element?

- a. copper
- b. chlorine
- c. aluminum
- d. sodium
- e. lead

9. What element has the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^4$?

- a. O
- b. S
- c. Se
- d. Si
- e. Ge

10. What element has the following electron configuration?



- a. Sc
 - b. Cr
 - c. Ca
 - d. Mo
 - e. Al
11. Rank Ba, Ca, Na in order of increasing 2nd ionization energy.
- a. $\text{Ba} < \text{Ca} < \text{Na}$
 - b. $\text{Ba} < \text{Na} < \text{Ca}$
 - c. $\text{Ca} < \text{Ba} < \text{Na}$
 - d. $\text{Na} < \text{Ca} < \text{Ba}$
 - e. $\text{Na} < \text{Ba} < \text{Ca}$
12. Which of the following elements would have the greatest difference between the first and the second ionization energy?
- a. lithium
 - b. carbon
 - c. magnesium
 - d. fluorine
 - e. nitrogen