

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 1) Select the arrangement of electromagnetic radiation which starts with the shortest wavelength and increases to longest wavelength. 1) \_\_\_\_\_  
A) radio, ultraviolet, infrared, gamma rays  
B) gamma rays, ultraviolet, infrared, radio  
C) gamma rays, infrared, radio, ultraviolet  
D) radio, infrared, ultraviolet, gamma rays  
E) gamma rays, radio, ultraviolet, infrared
- 2) Which of the following electron transitions would be expected to absorb the highest energy of light in the Bohr model of the atom? 2) \_\_\_\_\_  
A)  $n = 7$  to  $n = 2$       B)  $n = 5$  to  $n = 6$       C)  $n = 3$  to  $n = 4$       D)  $n = 1$  to  $n = 3$
- 3) Atomic orbitals developed using quantum mechanics 3) \_\_\_\_\_  
A) describe regions of space in which one is most likely to find an electron.  
B) allow scientists to calculate an exact volume for the hydrogen atom.  
C) are in conflict with the Heisenberg uncertainty principle.  
D) describe exact paths for electron motion.  
E) give a description of the atomic structure, which is essentially the same as the Bohr model.
- 4) How many orbitals and how many electrons can have the  $3d$  description in a given atom? 4) \_\_\_\_\_  
A) 2 orbitals, 1 electron      B) 5 orbitals, 10 electrons  
C) 1 orbital, 2 electrons      D) 3 orbitals, 6 electrons
- 5) Which element has the following ground-state electron configuration? 5) \_\_\_\_\_  
 $1s^2 2s^2 2p^6 3s^2$   
A) Al      B) Na      C) Ne      D) Si      E) Mg
- 6) How many unpaired electrons does a ground-state atom of oxygen have? 6) \_\_\_\_\_  
A) 0      B) 1      C) 2      D) 3      E) 4

## Answer Key

Testname: MINI-PRAC CH2

- 1) B
- 2) D
- 3) A
- 4) B
- 5) E
- 6) C