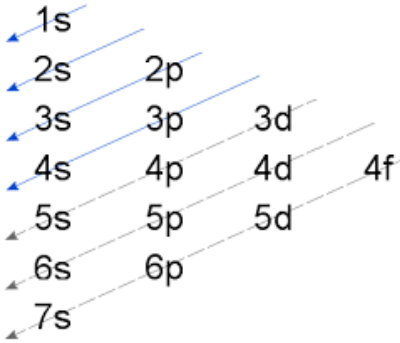
Chemistry Midterm Exam 2018-2019 Name _____

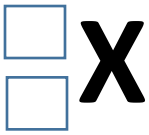
Part 1. Complete the multiple choice portion of the exam.
Part 2. Short Answer and Problem Solving.



1. **Consider a neutral atom of bromine (Br)**
   a. Draw an Aufbau diagram for Br

   b. Give the electron configuration using the noble gas abbreviation: _____

   c. An atom of bromine has a larger atomic radius than an atom of oxygen. Justify this statement.

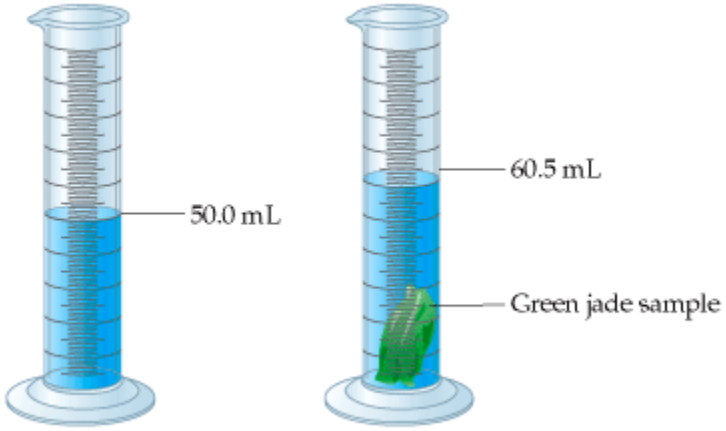
2. **A neutral atom, X, has 47 protons, 60 neutrons, and 47 electrons.**
   a. Write the nuclear symbol for this atom in the space to the right. 

   b. There is one other isotope of element X, with 62 neutrons that makes up 48.16% of naturally occurring X. Calculate the average atomic mass of element X.

3. **A 55.0 g sample of iron is heated from 27.3 °C to 101.0 °C which requires 1875 J of energy.**
   a. Calculate the specific heat capacity of iron. Include units with your answer. Round answers to the appropriate number of significant figures.

   b. The accepted value for the specific heat of iron is 0.450 J/g°C. Calculate the student's percent error.

4. **A sample of green jade is placed in a graduated cylinder of water as shown in the diagram below. What is the mass of the green jade sample if the density of green jade is 2.98 g/mL.** Round your answer to the appropriate number of significant figures and include units.



5. **A parking lot is 85 yards long. How long is the parking lot in millmeters? Record your answer in scientific notation using the correct number of significant figures.** (1 yard = 3 ft) (1 in = 2.54 cm)