

Name _____ Period _____ Date _____

Quantum Model HW – Ch. 4

(p. 98 – 104)

PART A – WAVES & QUANTUM MECHANICS

1. What experimental evidence supported de Broglie's idea that electrons have wave-like properties?
2. Explain the difference between Schrödinger's orbitals and Bohr's electron orbits.

PART B – QUANTUM NUMBERS

3. For each quantum number, list the symbol and give a brief description.

Quantum #	Symbol	Description
Principal		
Angular Momentum		
Magnetic		
Spin		

4. Draw the shapes of the following types of orbitals:

s-orbital

p-orbital

5. Complete the following table to indicate the total number of orbitals in each energy level (n). In the remaining columns, specify how many of those orbitals are s, p, d, and f.

Level n	Total # of orbitals	# of s-orbitals	# of p-orbitals	# of d-orbitals	# of f-orbitals
1					
2					
3					
4					