Quiz 2.2 – Electronic Structure

Name: Key

Question 1

List the four different types of electron subshells and roughly sketch what orbitals in the first three look like

s, p,  d,  f, redacted

Question 2

Tell how many electrons can be contained in each of the following:

- A *d* orbital 2
- A *p* subshell 6
- The 3rd shell 18

Question 3

List all subshells in order of increasing energy from 1*s* to 7*p*

1s - 2s - 2p - 3s - 3p - 4s - 3d - 4p - 5s - 4d - 5p - 6s - 4f - 5d - 6p - 7s - 5f - 6d - 7p

Question 4

Give the complete electronic configuration for the following:

- O $1s^2 2s^2 2p^4$
- Mg $1s^2 2s^2 2p^6 3s^2$
- Ti $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^2$
- B $1s^2 2s^2 2p^1$

Question 5

Give the electronic configuration using noble-gas notation for the following:

- Br $[Ar] 4s^2 3d^{10} 4p^5$
- Pt $[Xe] 6s^2 4f^{14} 5d^8$
- U $[Rn] 7s^2 5f^4$ (-or- $[Rn] 7s^2 6d^1 5f^3$)
- Bi $[Xe] 6s^2 4f^{14} 5d^{10} 6p^3$