Grossmont College Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemistry 141

Quiz 7 (24 points)

1. (8 points) Indicate why the following sets of quantum numbers are wrong (must explain in terms of quantum numbers):

|  |  |
| --- | --- |
| Sets of quantum numbers | Explanation |
| A) n =1 , *l* = 1 , *ml* = 0 , Name = 1p |  |
| B) n = 4 , *l* = 3 , *ml* = +3 , name = 4d |  |
| C) n = 3 , *l* = 1 , *ml* = -2 , Name = 3p |  |
| D) Name = 2d |  |

1. (3 points) Write the short-hand electron configuration for polonium (Po).

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1. (3 points) Give the orbital diagram for the valence shell configuration of manganese (II) ion.
2. (5 points) Below is a list of successive ionization energies in kJ/mol for a period 3 element. Identify the element and explain how you came to that conclusion.

IE1 = 1012; IE2 = 1900; IE3 = 2910; IE4 = 4960; IE5 = 6270; IE6 = 22,200

1. (5 points) Define shielding and effective nuclear charge. What is the connection between the two (must be in words the equation alone is not sufficient answer)?