Chemistry 115 - Name

Dr. Cary Willard

Quiz 3A (20 points) September 23, 2008

All work must be shown to receive credit.

1. (8 points) A small metal horse is weighed and found to have a mass of 973.7 grams. The horse was then submerged in a large graduated cylinder containing 250.0 mL of water. The volume of the cylinder rose to 359.4mL. Calculate the density of the metal in g/mL and predict its composition.

|  |  |
| --- | --- |
| element | density |
| V | 6.0 g/mL |
| Cr | 7.2 g/mL |
| Ni | 8.9 g/mL |
| Ag | 10.5 g/mL |
| Pd | 12.0 g/mL |

Density in g/mL

1. (3 points) John Dalton proposed a new theory based on the work of Democritus. Summarize the important parts of the theory that John Dalton proposed.
2. (3 points) Rutherford shot alpha particles at a thin sheet of gold. What did he observe and what did he propose as the structure of an atom based on his observations?
3. (6 points) Give the number of protons, neutrons, and electrons in an atom of 30Si.

Protons \_\_\_\_\_\_

Neutrons \_\_\_\_\_

Electrons \_\_\_\_\_

Chemistry 115 - Name

Dr. Cary Willard

Quiz 3B (20 points) September 23, 2008

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1. (8 points) A small metal horse is weighed and found to have a mass of 787.7 grams. The horse was then submerged in a large graduated cylinder containing 250.0 mL of water. The volume of the cylinder rose to 359.4mL. Calculate the density of the metal in g/mL and predict its composition.

|  |  |
| --- | --- |
| element | density |
| V | 6.0 g/mL |
| Cr | 7.2 g/mL |
| Ni | 8.9 g/mL |
| Ag | 10.5 g/mL |
| Pd | 12.0 g/mL |

Density in g/mL

1. (3 points) John Dalton proposed a new theory based on the work of Democritus. Summarize the important parts of the theory that John Dalton proposed.
2. (3 points) Rutherford shot alpha particles at a thin sheet of gold. What did he observe and what did he propose as the structure of an atom based on his observations?
3. (6 points) Give the number of protons, neutrons, and electrons in an atom of 59Mn.

Protons \_\_\_\_\_\_

Neutrons \_\_\_\_\_

Electrons \_\_\_\_\_