**Section 3.2 Study Guide: The Structure of the Atom**

**Completion**

*Complete each statement.*

1. An atom is electrically neutral because the number of \_\_\_ \_\_\_\_\_\_\_\_\_ and \_\_\_ \_ \_\_\_\_\_\_\_\_ are equal.

2. Most of the volume of an atom is occupied by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cloud.

3. forces are the short-range forces that hold nuclear particles together.

4. Because atomic radii are small, they are expressed using the which equals m.

5. The nuclei of atoms of different elements differ in their number of .

**Matching**

|  |  |
| --- | --- |
| a. | Democritus |
| b. | Dalton |
| c. | Thomson |
| d. | Millikan |
| e. | Rutherford |
| f. | Bohr |

\_\_\_\_ 6. Named the atom

\_\_\_\_ 7. Created the plum pudding model

\_\_\_\_ 8. Proposed the atomic theory

\_\_\_\_ 9. American physicist famous for the oil drop experiment

\_\_\_\_ 10. Stated that atoms could not be created or destroyed

\_\_\_\_ 11. Bombarded a thin piece of gold foil with alpha particles. Some particles passed through the foil while a few actually reflected back.

\_\_\_\_ 12. Used a cathode ray tube with gases low pressure and discovered that all gasses must contain a negatively charged particle

\_\_\_\_ 13. Proposed a model in which electrons surrounded the positively charged nucleus

\_\_\_\_ 14. Measured the charge of an electron

\_\_\_\_ 15. Discovered the nucleus of an atom

**Other**

16.

|  |  |  |  |
| --- | --- | --- | --- |
| **Particle** | **Mass number** | **Relative charge** | **Location** |
| Proton |  |  |  |

17.

|  |  |  |  |
| --- | --- | --- | --- |
| **Particle** | **Mass number** | **Relative charge** | **Location** |
| Neutron |  |  |  |

18.

|  |  |  |  |
| --- | --- | --- | --- |
| **Particle** | **Mass number** | **Relative charge** | **Location** |
| Electron |  |  |  |