**Makeup Quiz: Flame Test & Average Atomic Mass**

1. What is the difference between a line spectrum and continuous spectrum? (3 pt)
2. How does spectroscopy work? (4 pt)
3. Fill out the blanks in the following chart: (0.5 pt each space)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Protons | Neutrons | Electrons | Mass (amu) | Atomic number |
|  | 121 |  |  | 203 |  |
|  |  |  | 97 | 267 |  |
|  | 86 |  |  | 222 |  |
| Ba |  | 76 |  |  |  |

1. Explain why the nucleus of an atom has to contain neutrons. (4 pt)
2. Why does every element have several different isotopes? Explain, using your knowledge of how isotopes work. (5 pt)
3. What is the average atomic mass of an element that has the following information: (4 pt)

78Br Abundance = 8.2%

79Br Abundance = 87.9%

81Br Abundance = 3.9%