**Question 27**

The atomic and mass numbers for four different atoms are given below. Which two are isotopes **of the same**element?

|  |  |  |
| --- | --- | --- |
| Atom | Atomic Number | Mass Number |
| A | 100 | 257 |
| B | 101 | 257 |
| C | 101 | 260 |
| D | 102 | 259 |

 A and B

 B and C

 B and D

 C and D

**Question 30**

Describe at least two experiments, including the observed results, that caused the scientific community to accept changes to Dalton’s original model of the atom.

#### Question 31

Explain, in your own words, why different elements produce different colors of light when heated.

#### Question 32

Carbon has an atomic number of 6, but the following orbital notation for carbon is incorrect. Explain the error in terms of the rules for electron arrangements.

