**Nuclear Basics and Nuclear Equation No Decay Series Quiz**

**Name:**

**Period: Seat #:**

**Directions:**

- Show work when told to. No work, no credit.

- Only answers bubbled on the bubble sheet will receive credit.

|  |  |  |
| --- | --- | --- |
| 1. | Gamma radiation can be stopped by which of the following materials? | |
| A) | Tin foil |
| B) | Paper |
| C) | Lead sheets |
| D) | Clothing |

|  |  |  |
| --- | --- | --- |
| 2. | Alpha particles are | |
| A) | helium nuclei |
| B) | neutrons |
| C) | electrons |
| D) | protons |

|  |  |  |
| --- | --- | --- |
| 3. | Which particle must the radioactive substance be emitting? | |
| A) | Beta |
| B) | Gamma |
| C) | Alpha |
| D) | None of the above |

|  |  |  |
| --- | --- | --- |
| 4. | **SHOW WORK -** Polonium is a naturally radioactive element decaying with the loss of an alpha particle.? What is the second product of this decay? | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

|  |  |  |
| --- | --- | --- |
| 5. | **SHOW WORK -** When the palladium-106 nucleus is struck with an alpha particle, a neutron () is produced, along with a new element. What is this new element? | |
| A) | silver-109 |
| B) | cadmium-112 |
| C) | cadmium-109 |
| D) | silver-108 |

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| D) | silver-108 |

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| --- | --- | --- |
| 6. | **SHOW WORK -** Which of the following is a product of  decay of U? | |
| A) | Np |
| B) | U |
| C) | Th |
| D) | Pa |

|  |  |  |
| --- | --- | --- |
| 7. | **SHOW WORK -** What particle is missing from the following equation? | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

|  |  |  |
| --- | --- | --- |
| 8. | **SHOW WORK -** Thorium-234 undergoes beta particle production. What is the other product? | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

|  |  |  |
| --- | --- | --- |
| 9. | Radioactivity is not useful for: | |
| A) | Producing electricity in a power plant |
| B) | Treating cancer by killing cancer cells |
| C) | Making chemicals like soap |
| D) | Carbon dating artifacts and rocks |

|  |  |  |
| --- | --- | --- |
| 10. | The atomic particle having a mass of 0 amu and a charge of -1 is | |
| A) | a proton |
| B) | an alpha particle |
| C) | an beta particle |
| D) | a gamma ray |

|  |  |  |
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**Answer Key**

|  |  |
| --- | --- |
| 1. | C |
| 2. | A |
| 3. | C |
| 4. | A |
| 5. | C |
| 6. | C |
| 7. | B |
| 8. | D |
| 9. | C |
| 10. | C |