**Half Life 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. | **SHOW WORK -** If you started with 32.50 grams of a radioactive substance, how much would you have left over after 5 half-lives? | |
| A) | 0 |
| B) | 81.25 |
| C) | 6.5 |
| D) | 1.015625 |

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| --- | --- | --- |
| 2. | **SHOW WORK -** The Cs-131 nuclide has a half-life of 30. years. After 146 years, about 3.0 grams remain. The original mass of the Cs-131 sample is closest to | |
| A) | 87 g |
| B) | 175 g |
| C) | 306 g |
| D) | 44 g |

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| --- | --- | --- |
| 3. | The half-life of a radioactive nuclide is | |
| A) | the time it takes to reduce the radioactivity by 100%. |
| B) | the time it takes for 50% of the original number of atoms to undergo radioactive decay. |
| C) | the time in which 25% of the original number of atoms undergoes radioactive decay. |
| D) | the time in which the isotope becomes nonradioactive. |

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| 4. | **SHOW WORK -** The half life of a radioactive sample is 7.5 years. If you started with 60.7 grams, how many grams will still be radioactive after 20.74 years? | |
| A) | 83.927867 |
| B) | 8.927717 |
| C) | 47.24221 |
| D) | 412.702379 |

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| 5. | **SHOW WORK -** A radioactive element has a half-life of 6.78 days. What percent of the original sample is left after 15.0 days? | |
| A) | 21.6% |
| B) | 43.2% |
| C) | 46.5% |
| D) | 10.8% |

VERSION 3

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VERSION 3

**Answer Key**

|  |  |
| --- | --- |
| 1. | D |
| 2. | A |
| 3. | B |
| 4. | B |
| 5. | A |