**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 -** A radioactive element has a half-life of 7.03 days. What percent of the original sample is left after 15.0 days? |
| A) | 22.8% |
| B) | 45.6% |
| C) | 47.7% |
| D) | 11.4% |

|  |  |
| --- | --- |
| 2. | **SHOW WORK -** The half life of a radioactive sample is 3.0 years. If you started with 53.5 grams, how many grams will still be radioactive after 20.74 years?  |
| A) | 0.443847 |
| B) | 184.931667 |
| C) | 6448.734327 |
| D) | 48.396103 |

|  |  |
| --- | --- |
| 3. | **SHOW WORK -** The Cs-131 nuclide has a half-life of 30. years. After 142 years, about 3.0 grams remain. The original mass of the Cs-131 sample is closest to |
| A) | 40 g |
| B) | 80 g |
| C) | 279 g |
| D) | 159 g |

|  |  |
| --- | --- |
| 4. | **SHOW WORK -** If you started with 35.00 grams of a radioactive substance, how much would you have left over after 6 half-lives?  |
| A) | 105 |
| B) | 5.833333 |
| C) | 0 |
| D) | 0.546875 |

|  |  |
| --- | --- |
| 5. | The half-life of a radioactive nuclide is |
| A) | the time it takes for 50% of the original number of atoms to undergo radioactive decay. |
| B) | the time it takes to reduce the radioactivity by 100%. |
| C) | the time in which the isotope becomes nonradioactive. |
| D) | the time in which 25% of the original number of atoms undergoes radioactive decay. |

VERSION 4

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VERSION 4

**Answer Key**

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

**Answer Key**

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