**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 6.05 days. What percent of the original sample is left after 15.0 days? |
| A) | 35.9% |
| B) | 42.3% |
| C) | 17.9% |
| D) | 9.0% |

|  |  |
| --- | --- |
| 2. | **SHOW WORK -** The half life of a radioactive sample is 12.0 years. If you started with 73.1 grams, how many grams will still be radioactive after 20.74 years?  |
| A) | 63.170583 |
| B) | 48.948998 |
| C) | 242.213058 |
| D) | 22.06161 |

|  |  |
| --- | --- |
| 3. | **SHOW WORK -** If you started with 22.00 grams of a radioactive substance, how much would you have left over after 7 half-lives?  |
| A) | 0.000002 |
| B) | 3.142857 |
| C) | 0.171875 |
| D) | 77 |

|  |  |
| --- | --- |
| 4. | 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. |

|  |  |
| --- | --- |
| 5. | **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) | 279 g |
| B) | 159 g |
| C) | 40 g |
| D) | 80 g |

VERSION 6

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VERSION 6

**Answer Key**

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

**Answer Key**

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