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Crash Course Chemistry #38: Nuclear Chemistry

Name: _____ Date: _____

You can access the video here → https://youtu.be/KWAsz59F8gA?si=3jv4xyOA_xD_D-Fm

1. The study of changes in the nucleus of an atom is known as _____.
2. A change in the number of protons turns one element into a _____ element.
3. Atoms of the same element with different numbers of neutrons are called _____.
4. The process of changing one element or isotope into another is called _____.
5. Atoms undergo nuclear changes to reach a more _____ configuration.
6. When an unstable nucleus breaks down to form a different nucleus, it's called _____.
7. The time it takes for half of a radioactive sample to decay is called its _____.
8. Radiation that has enough energy to knock electrons out of atoms is called _____ radiation.
9. The type of radioactive decay that releases a helium nucleus is called _____ decay.
10. The type of decay that releases an electron is called _____ decay.
11. In nuclear notation, an electron is represented with a mass number of 0 and an atomic number of _____.
12. Radiation that releases only energy and no particles is called _____ decay.
13. When electrons drop from an excited state to a ground state, they release _____ radiation.
14. A rare type of decay where an atom splits into two smaller atoms without external input is called _____.
15. The only element that undergoes spontaneous fission at a useful rate is _____-254.

Crash Course Chemistry #38: Nuclear Chemistry KEY

1. The study of changes in the nucleus of an atom is known as **Nuclear Chemistry**.
2. A change in the number of protons turns one element into a **different** element.
3. Atoms of the same element with different numbers of neutrons are called **isotopes**.
4. The process of changing one element or isotope into another is called **transmutation**.
5. Atoms undergo nuclear changes to reach a more **stable** configuration.
6. When an unstable nucleus breaks down to form a different nucleus, it's called **radioactive decay**.
7. The time it takes for half of a radioactive sample to decay is called its **half-life**.
8. Radiation that has enough energy to knock electrons out of atoms is called **ionizing** radiation.
9. The type of radioactive decay that releases a helium nucleus is called **alpha** decay.
10. The type of decay that releases an electron is called **beta** decay.
11. In nuclear notation, an electron is represented with a mass number of 0 and an atomic number of **-1**.
12. Radiation that releases only energy and no particles is called **gamma** decay.
13. When electrons drop from an excited state to a ground state, they release **gamma** radiation.
14. A rare type of decay where an atom splits into two smaller atoms without external input is called **spontaneous fission**.
15. The only element that undergoes spontaneous fission at a useful rate is **Californium-254**.

15 Questions

Answer Key Included

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