Name _____

Creating the Unseen: The Science of Synthetic Elements

Short Answer Key

1. Particle accelerators accelerate charged particles to high speeds, allowing them to collide with target atoms, leading to the creation of synthetic elements.
2. The study of synthetic elements is valuable in nuclear physics because it helps scientists understand the behavior of atomic nuclei, the limits of nuclear stability, and the interactions between subatomic particles.
3. An example of a synthetic element used in medical imaging is technetium-99m.
4. Challenges associated with synthetic elements include their extreme instability, short half-lives, and the need for specialized equipment. Ethical considerations include ensuring safety and responsible research practices.
5. It is essential for scientists to adhere to ethical considerations when working with synthetic elements to ensure the safety of experiments, protect the environment, and uphold ethical standards in research.