

Regents Nuclear Review

For each Nuclide, show complete notation for their decay reactions

Nuclide	Name of Radiation emitted	Complete Decay Reaction
Fe-53		
H-3		
Th-232		
U-238		
Cs-137		
P-32		
K-37		
Fr-220		

2. If you start with 100.0 grams of K-42, how long until you have just 12.5 grams left? What are you other 87.5 grams now?

3. Someone hands you 512 grams of P-32 and you misplace it in your messy garage for a while. When you find it you find that only 2.0 grams of the stuff remains. How long has it been lost?

4. If a scientist finds a frozen horse and measures that it contains only one quarter of the radioactive C-14 present that normal, that scientist could state that this horse died how many years ago?

5. Compare and contrast FISSION and FUSION reactions.

6. Explain what is meant by this expression: $E=mc^2$

7. What is mass defect?

8. Compare and contrast natural and artificial transmutation.

9. Define HALF LIFE.

10. Define ISOTOPE vs. RADIOISOTOPE

11. Define Radioactivity.

12. What makes an isotope's nucleus unstable?