

## BLITZ: Nuclear Form D-H

Name \_\_\_\_\_ Period \_\_\_\_\_

*This is a Take Home Exam. You may use your notes but you may NOT use help from human beings.*

**COPY, COMPLETE, AND BALANCE THESE EQUATIONS:**

**You MUST HAND WRITE THIS EXAM!! NO TYPED PAPERS WILL BE ACCEPTED!**

1.  ${}_{92}\text{U}^{238} + ? \rightarrow {}_{92}\text{U}^{239}$
2.  ${}_1\text{H}^2 + {}_6\text{C}^{12} \rightarrow {}_7\text{N}^{13} + ?$
3.  $? + {}_0\text{n}^1 \rightarrow {}_{94}\text{Pu}^{241}$
4.  ${}_{45}\text{Rh}^{107} \rightarrow {}_{46}\text{Pd}^{107} + ?$
5.  ${}_3\text{Li}^6 + {}_0\text{n}^1 \rightarrow ? + {}_1\text{H}^3$
6.  ${}_6\text{C}^{12} + ? \rightarrow {}_{102}\text{No}^{254} + 2 {}_0\text{n}^1$
7.  ${}_{99}\text{Es}^{254} + {}_2\text{He}^4 \rightarrow ? + 2 {}_0\text{n}^1$
8.  ${}_1\text{H}^2 + {}_1\text{H}^3 \rightarrow {}_2\text{He}^3 + ?$
9.  ${}_2\text{He}^3 + {}_{13}\text{Al}^{27} \rightarrow {}_{14}\text{Si}^{29} + ?$
10.  ${}_{92}\text{U}^{235} + {}_0\text{n}^1 \rightarrow {}_{59}\text{Pr}^{147} + ? + 3 {}_0\text{n}^1$

**ANSWER YOUR ESSAY QUESTIONS IN COMPLETE SENTENCES!**

11. Diagram a nuclear reactor and explain the function of the five parts.
12. Explain nuclear fission and fusion and give an example of each.
13. Describe TWO methods of separating isotopes.
14. Define alpha, beta, and gamma rays and with a diagram tell how they were discovered.
15. List five properties of radioactivity.
16. Discuss the meaning of half-life, and give an example.
17. Using a diagram, tell how radioactivity was discovered by Becquerel.
18. Explain critical mass and how to make an A-Bomb.
19. Diagram and describe the discovery of Ions and the Proton.
20. Using a diagram, enlighten us on the discovery isotopes.

**When finished, please STAPLE this exam onto your papers and turn in on due date.**