BLITZ: Nuclear Form I-L

Name _____ Period ____

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

EXPLAIN IN COMPLETE SENTENCES AND GIVE EXAMPLES:

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

1. Define alpha, beta, and gamma rays, and using a diagram tell how they were discovered.

2. Using a diagram, explain how the charge-mass ratio of an electron is determined.

3. Explain nuclear fission and fusion and give an example of each.

4. Using a diagram, explain Isotopes and how they were discovered.

5. Using a diagram, describe how ions and the proton were found.

6. Discuss the meaning of half-life, and give an example.

7. Using a diagram, tell the function of the five parts of a nuclear reactor.

8. Using a diagram, tell how X-Rays are produced and two things they show us about atomic structure.

9. Explain critical mass and the chain reaction.

10. List five properties of radioactivity.

*** COPY THESE EQUATIONS AND COMPLETE THEM ON YOUR PAPER:

11. $_{99}Es^{254} + {}_{2}He^{4} \rightarrow ? + 2\ {}_{0}n^{1}$

12. $_{6}C^{12} + ? \rightarrow {}_{102}No^{254} + 2\ {}_{0}n^{1}$

13. $_{94}Pu^{239} + {}_{0}n^{1} \rightarrow ?$

14. $_{1}H^{2} + {}_{1}H^{3} \rightarrow {}_{2}He^{4} + ?$

15. $_{2}He^{4} + {}_{13}Al^{27} \rightarrow {}_{14}Si^{30} + ?$

16. $_{1}H^{2} + {}_{6}C^{12} \rightarrow {}_{7}N^{13} + ?$

17. $? + {}_{0}n^{1} \rightarrow {}_{94}Pu^{241}$

18. $_{5}B^{11} + {}_{94}Pu^{251} \rightarrow ? + 3\ {}_{0}n^{1}$

19. $_{92}U^{238} + ? \rightarrow {}_{92}U^{239}$

20. $_{3}Li^{6} + {}_{0}n^{1} \rightarrow ? + {}_{1}H^{3}$

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