BLITZ: Nuclear Form M-R

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. Explain critical mass and how to make an A-Bomb.

2. Using a diagram, explain how Ions and the Proton were discovered.

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

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

5. Give five properties of radioactivity.

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

7. Describe the diffusion method of separating isotopes.

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

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

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

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

11. $? + {}_0n^1 \rightarrow {}_{94}Pu^{241}$

12. ${}_5B^{11} + {}_{94}Pu^{251} \rightarrow ? + 3\ {}_0n^1$

13. ${}_3Li^6 + {}_0n^1 \rightarrow ? + {}_1H^3$

14. ${}_{94}Pu^{239} + {}_0n^1 \rightarrow ?$

15. ${}_{99}Es^{254} + {}_2He^4 \rightarrow ? + 2\ {}_0n^1$

16. ${}_6C^{12} + ? \rightarrow {}_{102}No^{254} + 2\ {}_0n^1$

17. ${}_1H^2 + {}_1H^3 \rightarrow {}_2He^4 + ?$

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

19. ${}_2He^4 + {}_{13}Al^{27} \rightarrow {}_{14}Si^{30} + ?$

20. ${}_1H^2 + {}_6C^{12} \rightarrow {}_7N^{13} + ?$

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