

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## **Chemistry**

### *"Trinity and Beyond: The Atomic Bomb Movie" WS 1*

I. Answer the following questions using information presented by the movie or found online:

1. How much TNT was exploded in the Trinity scale test in May 1945?
2. What prompted FDR to begin the Manhattan Project?
3. What scientific accomplishment was achieved by Enrico Fermi on December 2, 1942?
4. Where was the first atomic bomb assembled?
5. Who is Dr. Edward Teller?
6. What was the name of the first atomic weapon ever exploded? When was it exploded? What radioisotope was it made of?
7. Was Germany able to develop an atomic bomb?
8. First atomic bomb dropped on Japan:  
City: \_\_\_\_\_ Yield: \_\_\_\_\_  
Bomb Name: \_\_\_\_\_ # Killed: \_\_\_\_\_  
Date: \_\_\_\_\_
9. Second atomic bomb dropped on Japan:  
City: \_\_\_\_\_ Yield: \_\_\_\_\_  
Bomb Name: \_\_\_\_\_ # Killed: \_\_\_\_\_  
Date: \_\_\_\_\_
10. What was the purpose of Operation Crossroads? What bombs were tested there?
11. How were the islands at Enewetak Atoll prepared for Operation Sandstone?

12. What was the yield for shot X-Ray, the first bomb to use “yield-boosting” technology?
13. What was Sandia Laboratories' primary purpose?
14. What country detonated its first atomic bomb on August 29, 1949, five years earlier than predicted?
15. Because of the high cost of testing in the Pacific, what US state became the site for atomic weapons testing in 1951?
16. What was the purpose of shot Easy during Operation Greenhouse?
17. What radioisotope of hydrogen was used to boost the yield of shot Item by more than double?
18. What was the yield of shot George, the first device to use thermonuclear technology? How many times larger was George than Little Boy (Hiroshima)?
19. Why did Edward Teller feel we should continue developing nuclear weapons?
20. Why was shot Ivy Mike called a “wet bomb”?
21. What was the purpose of the long plywood tube leading from the Ivy Mike device?
22. What was the significance of Ivy Mike? What was its yield?
23. What was the purpose of Operation Upshot-Knothole?
24. What is a precursor?

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## **Chemistry**

### *"Trinity and Beyond: The Atomic Bomb Movie" WS 2*

I. *Answer the following questions using information presented by the movie or found online:*

1. What was the significance of shot Castle Bravo, a.k.a. "The Big One"?
2. When did the Russians detonate their first hydrogen bomb?
3. What was the purpose of shot Charlie?
4. How many nuclear tests were performed during Operation Redwing in 1956?
5. What was the significance of shot Cherokee?
6. Why were barges later used for nuclear tests?
7. How was radiation exposure measured in the human body?
8. How is strontium-90 similar to calcium? Why is it dangerous?
9. How many nuclear tests were performed during Operation Plumbbob in 1957?
10. What was the purpose of Operation Plumbbob?
11. What was the purpose of the Rainier event?
12. How many nuclear tests were performed during Operation Hardtack in 1958?

13. By this point, why were nuclear weapons tests criticized?
14. What did the Soviets do one year before Operation Hardtack that concerned the US?
15. What was the significance of shot Teak? What was the result of shot Teak's EMP?
16. What did the Soviets announce four days after Khrushchev took office?
17. How large was the yield of the Soviets' "Monster Bomb"?
18. What was the United States' response to the Soviets' detonation of their "Monster Bomb"?
19. Approximately how many tests were conducted by the US soon after the nuclear test moratorium?
20. What was the purpose of high-altitude nuclear tests?
21. Which US President signed the Limited Test Ban Treaty in 1963?
22. What was the significance of shot Tightrope?
23. What is prohibited by the Limited Test Ban Treaty?
24. How many atmospheric nuclear tests were conducted by the United States between 1945-1962?
25. How many countries signed the Limited Test Ban Treaty? What country violated the Limited Test Ban Treaty just one year after signing it?