



ADD NOTE EXIT TEST

1. Extremely high energy is required to start this process, which is making it difficult to replicate in a laboratory.



Nuclear Fusion

Nuclear Fission

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2. A process in which a very heavy nucleus splits into more stable nuclei of intermediate mass is called

- a chain reaction.
- nuclear fission.
- nuclear fusion.
- radioactive decay.

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3. A process in which two or more lighter atoms combine into a large one is called

- a chain reaction. ⊖
- nuclear fission. ⊖
- nuclear fusion. ⊖
- radioactive decay. ⊖

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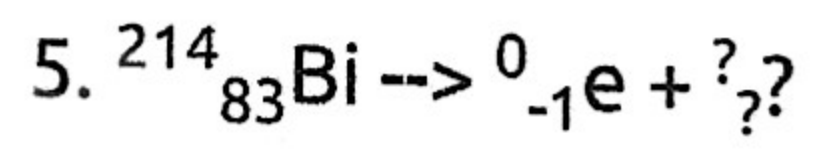
4. Produces few radioactive particles.

- Nuclear Fusion
- Nuclear Fission

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+/-

What is the atomic number that balances this nuclear equation?

- 1 2 3 4 5 6 7 8 9 10 11 12 ... NEXT

6. In nuclear reactions 

- small amounts of mass are converted to large amounts of energy. 
- large amounts of energy are converted to small amounts of mass. 
- energy is destroyed and mass is created. 
- small amounts of energy are converted to large amounts of mass. 
- mass is destroyed and energy is created. 
- large amounts of mass are converted to small amounts of energy. 

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7. Nuclear _____ occurs naturally in the sun.

fusion

bombardment

half-life

fission

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8. Which type(s) of radiation/decay match the following description?



can penetrate paper or skin, but not a thick sheet of aluminum

beta ⊖

positron ⊖

gamma ⊖

neutron ⊖

alpha ⊖

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9. Which type(s) of radiation/decay match the following description?



has the greatest penetrating power

neutron ⊖

alpha ⊖

beta ⊖

gamma ⊖

positron ⊖

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10. High density and high temperature environment is required.



Nuclear Fusion

Nuclear Fission

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11. Which of the following statements is/are true?

- All naturally occurring isotopes are radioactive.
- No man-made isotopes are radioactive.
- All man-made isotopes are radioactive.
- No naturally occurring isotopes are radioactive.
- Some man-made isotopes are radioactive.
- Some naturally occurring isotopes are radioactive.

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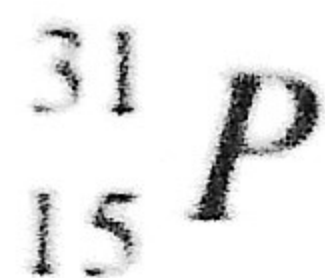
12. Radioactive nuclei 

- emit alpha particles, beta particles, or gamma rays. 
- are unstable. 
- are stable. 
- decay into another element. 

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13. Refer to the following nucleus when answering the question below:



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+/-

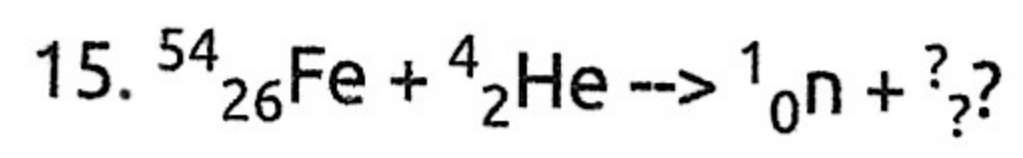
How many protons are in this nucleus?

- 7 8 9 10 11 12 13 14 15 16 17 18 ... NI



14. Does not normally occur in nature.

- Nuclear Fission
 - Nuclear Fusion
- CLEAR ALL



How many neutrons are in the nucleus of the atom that balances this nuclear equation?

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+/-

- 9 10 11 12 13 14 15 16 17 18 19 20 ... N



16. Very large nuclei tend to be unstable because of the 🚩

- attraction of electrons for the positively charge nucleus. ⊖
- repulsive forces between neutrons. ⊖
- repulsive forces between electrons. ⊖
- attraction of protons for neutrons. ⊖
- repulsive forces between protons. ⊖

CLEAR ALL



17. Which type(s) of radiation/decay match the following description?

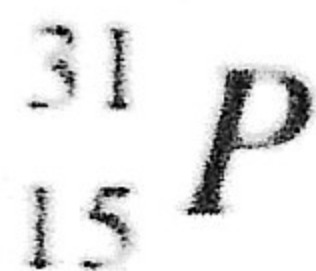
is identical to an electron

- | | | |
|--------------------------|----------|---|
| <input type="checkbox"/> | neutron | ⊖ |
| <input type="checkbox"/> | beta | ⊖ |
| <input type="checkbox"/> | gamma | ⊖ |
| <input type="checkbox"/> | alpha | ⊖ |
| <input type="checkbox"/> | positron | ⊖ |

CLEAR ALL



18. Refer to the following nucleus when answering the question below:



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+/-

How many neutrons are in this nucleus?

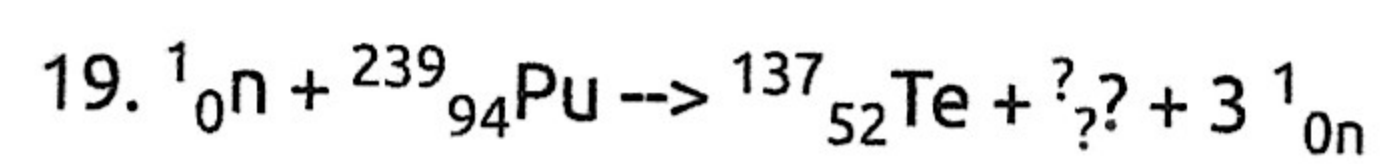
- 12 13 14 15 16 17 18 19 20 21 22 23 ...

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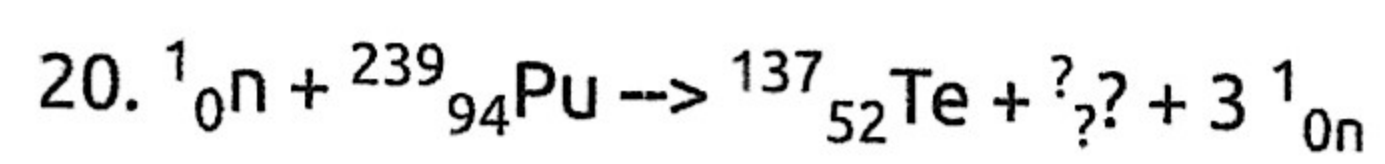
+/-

What is the mass number that balances this nuclear equation?

- 13 14 15 16 17 18 19 20 21 22 23 24 ... N

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+/-

How many protons are in the nucleus of the atom that balances this nuclear equation?

- 14 15 16 17 18 19 20 21 22 23 24 25 ... N



ADD NOTE EXIT TEST

21. Process that takes place inside a hydrogen bomb.

Nuclear Fusion

Nuclear Fission

CLEAR ALL



22. Which type(s) of radiation/decay match the following description?



has no mass or charge

- | | | |
|--------------------------|----------|-----------------------|
| <input type="checkbox"/> | beta | <input type="radio"/> |
| <input type="checkbox"/> | gamma | <input type="radio"/> |
| <input type="checkbox"/> | positron | <input type="radio"/> |
| <input type="checkbox"/> | alpha | <input type="radio"/> |
| <input type="checkbox"/> | neutron | <input type="radio"/> |

CLEAR ALL



23. Which type(s) of radiation/decay match the following description?



changes the mass number of an atom

- | | | |
|--------------------------|----------|-----------------------|
| <input type="checkbox"/> | beta | <input type="radio"/> |
| <input type="checkbox"/> | alpha | <input type="radio"/> |
| <input type="checkbox"/> | positron | <input type="radio"/> |
| <input type="checkbox"/> | gamma | <input type="radio"/> |
| <input type="checkbox"/> | neutron | <input type="radio"/> |

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24. Critical mass of the substance and high-speed neutrons are required.



Nuclear Fission

Nuclear Fusion

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25. If the half-life of substance X is 2.5 years, how long would it take for 48grams of substance X to decay so that only 3 grams remain?

+/-

- 19 20 21 22 23 24 25 26 27 28 29 30 NE



26. Produces many highly radioactive particles.



Nuclear Fission ⊖

Nuclear Fusion ⊖

CLEAR ALL



27. Which type(s) of radiation/decay match the following description?



identical to a helium nucleus

- | | | |
|--------------------------|----------|---|
| <input type="checkbox"/> | neutron | ⊖ |
| <input type="checkbox"/> | gamma | ⊖ |
| <input type="checkbox"/> | alpha | ⊖ |
| <input type="checkbox"/> | beta | ⊖ |
| <input type="checkbox"/> | positron | ⊖ |

CLEAR ALL



28. Process that takes place inside an atomic bomb.

- Nuclear Fusion
 - Nuclear Fission
- CLEAR ALL

29. Half-life

is the mass of an isotope remaining after half a second.

depends on temperature and pressure.

is the time it takes for half the mass of a sample to decay.

can be changed by varying the conditions in the lab.

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- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28
- 29
- 30
- NE



30. Currently used in nuclear power plants to generate electricity.



- Nuclear Fusion ⊖
- Nuclear Fission ⊖

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