



Name _____ Class _____ Date _____

- 1 The **main function** of a **coolant** in a nuclear fission reactor is to
- A slow down the speed of the neutrons
 - B absorb energy produced by the reaction
 - C shield the wall of the reactor from radiation damage
 - D adjust the number of neutrons available for reaction

- 2 Which two substances are most commonly used for **shielding** in a **nuclear reactor**?
- A water and heavy water
 - B beryllium and graphite
 - C molten sodium and molten lithium
 - D steel and high-density concrete

- 3 Which statement best describes what happens in a **fission reaction**?
- A Heavy nuclei split into lighter nuclei.
 - B Light nuclei form into heavier nuclei.
 - C Energy is released and less stable elements are formed.

- 4 The **half-life** of ^{131}I is 8.07 days. What **fraction** of a sample of ^{131}I **remains** after 24.21 days?

- A $\frac{1}{2}$
- B $\frac{1}{4}$
- C $\frac{1}{8}$



PREVIEW

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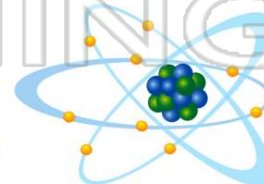
- 6
- A proton → alpha particle → electron
 - C electron → proton → alpha particle
 - D alpha particle → electron → proton

- A $\frac{1}{2}$
- B $\frac{1}{4}$
- C $\frac{1}{8}$
- D $\frac{1}{16}$

- 9 Which reaction **represents natural nuclear decay**?
- A $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$
 - B $\text{KClO}_3 \rightarrow \text{K}^+ + \text{ClO}_3^-$
 - C $^{235}_{92}\text{U} \rightarrow ^4_2\text{He} + ^{231}_{90}\text{Th}$
 - D $^{14}_7\text{N} + ^4_2\text{He} \rightarrow ^{17}_8\text{O} + ^1_1\text{H}$

- 10 The **spontaneous decay** of an **atom** is called

- A ionization
- B crystallization
- C combustion
- D transmutation





ANSWER KEY

The **main function** of a **coolant** in a nuclear fission reactor is to

- A slow down the speed of the neutrons
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(b)

Which two substances are most commonly used for **shielding** in a **nuclear reactor**?

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(d)

Which statement best describes what happens in a **fission reaction**?

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- D Energy is absorbed and more stable elements are formed.

(a)

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(c)



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D alpha particle \rightarrow electron \rightarrow proton

- B $\frac{1}{4}$
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Which reaction **represents natural nuclear decay**?

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(c)

The **spontaneous decay** of an **atom** is called

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(d)

