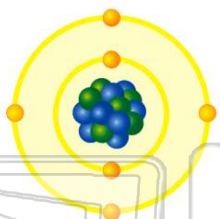




Name _____ Class _____ Date _____

1 A **radioactive isotope** used in the study of many **organic reaction mechanisms** is

- A carbon-12
- B carbon-14
- C oxygen-16
- D oxygen-18



2 **High energy** is a **requirement** for fusion reactions to occur because the nuclei involved

- A attract each other because they have like charges
- B attract each other because they have unlike charges
- C repel each other because they have like charges
- D repel each other because they have unlike charges

3 Which substance is a **gaseous radioactive waste product** that is released into the atmosphere after it has decayed to a safe radiation level?

- A radon-222
- B radium-226
- C uranium-235
- D plutonium-239



4 Which type of radiation has **zero mass** and **zero charge**?

- A alpha
- B beta
- C neutron
- D gamma

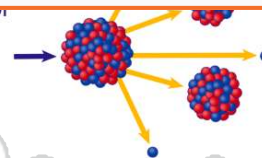


PREVIEW

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7 **gamma ray emission from the nucleus**
C movement of electrons to higher energy levels
D return of electrons to lower energy levels

- A an accelerator
- C a fuel rod
- D shielding



9 Which statement explains why **fusion reactions are difficult to initiate**?

- A Positive nuclei attract each other.
- B Positive nuclei repel each other.
- C Neutrons prevent nuclei from getting close enough to fuse.
- D Electrons prevent nuclei from getting close enough to fuse.

10 A **particle accelerator** is used to provide charged particles with sufficient

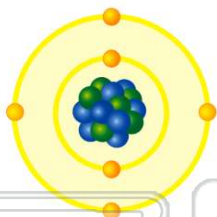
- A kinetic energy to penetrate a nucleus
- B kinetic energy to penetrate an electron cloud
- C potential energy to penetrate a nucleus
- D potential energy to penetrate an electron cloud



ANSWER KEY

A **radioactive isotope** used in the study of many **organic reaction mechanisms** is

- A carbon-12
- B carbon-14
- C oxygen-16
- D oxygen-18



(b)

High energy is a **requirement** for **fusion reactions to occur** because the nuclei involved

- A attract each other because they have like charges
- B attract each other because they have unlike charges
- C repel each other because they have like charges
- D repel each other because they have unlike charges

(c)

Which substance is a **gaseous radioactive waste product** that is released into the atmosphere after it has decayed to a safe radiation level?

- A radon-222
- B radium-226
- C cesium-137
- D cobalt-60



(a)

Which type of radiation has **zero mass** and **zero charge**?

- A alpha
- B beta
- C neutron
- D gamma



(d)

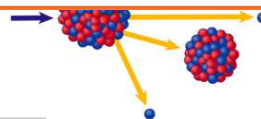


PREVIEW

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- C movement of electrons to higher energy levels
- D return of electrons to lower energy levels

D shielding



Which statement explains why **fusion reactions are difficult to initiate**?

- A Positive nuclei attract each other.
- B Positive nuclei repel each other.
- C Neutrons prevent nuclei from getting close enough to fuse.
- D Electrons prevent nuclei from getting close enough to fuse.

(b)

A **particle accelerator** is used to provide charged particles with sufficient

- A kinetic energy to penetrate a nucleus
- B kinetic energy to penetrate an electron cloud
- C potential energy to penetrate a nucleus
- D potential energy to penetrate an electron cloud

(a)