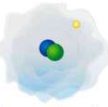




Name _____ Class _____ Date _____

- 1 In the currently accepted model of the atom, a **fuzzy cloud** around a hydrogen nucleus is used to **represent** the
- A electron's actual path, which is not a circular orbit
 B general region where the atom's proton is most probably located
 C general region where the atom's electron is most probably located
 D presence of water vapor in the atom



- 3 Which device is used to **detect nuclear radiation**?
- A cyclotron
 B Geiger counter
 C linear accelerator
 D Van de Graaff generator



- 2 The **isotopes** of an element can be **separated** using a
- A cathode ray tube
 B diffraction grating
 C Geiger counter
 D mass spectrometer

- 4 A medical lab has a **16-gram** sample of a radioactive isotope. After **6.0 hours**, it is found that **12 grams** of the sample have decayed. **What is the half-life** of the isotope?
- A 6.0 hr
 B 2.0 hr
 C 3.0 hr



PREVIEW

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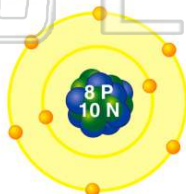
- B 6
 C 8
 D 14



- B 1.89 eV
 C 3.40 eV
 D 4.91 eV



- 9 If **nitrogen nuclei** are bombarded with alpha particles they can be **changed** into **oxygen nuclei**. This **phenomenon** is known as
- A nuclear fission
 B nuclear fusion
 C artificial transmutation
 D particle scattering



- 10 **One atomic mass unit** is defined as
- A the mass of an electron
 B the mass of an alpha particle
 C the mass of an atom of carbon-12
 D $\frac{1}{12}$ the mass of an atom of carbon-12



ANSWER KEY

In the currently accepted model of the atom, a **fuzzy cloud** around a hydrogen nucleus is used to **represent** the

- A electron's actual path, which is not a circular orbit
- B general region where the atom's proton is most probably located
- C general region where the atom's electron is most probably located
- D presence of water vapor in the atom



(C)

The **isotopes** of an element can be **separated** using a

- A cathode ray tube
- B diffraction grating
- C Geiger counter
- D mass spectrometer

(d)

Which device is used to **detect nuclear radiation**?

- A cyclotron
- B Geiger counter
- C linear accelerator
- D Van de Graaff generator



(b)

A medical lab has a **16-gram** sample of a radioactive isotope. After **6.0 hours**, it is found that **12 grams** of the sample have decayed. **What is the half-life of the isotope?**

- A 6.0 hr
- B 2.0 hr
- C 3.0 hr
- D 12.0 hr



(c)



PREVIEW

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- C 8
- D 14

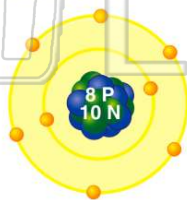


- C 3.40 eV
- D 4.91 eV



If **nitrogen nuclei** are bombarded with alpha particles they can be **changed** into **oxygen nuclei**. This **phenomenon** is known as

- A nuclear fission
- B nuclear fusion
- C artificial transmutation
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(C)

One atomic mass unit is defined as

- A the mass of an electron
- B the mass of an alpha particle
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- D $\frac{1}{12}$ the mass of an atom of carbon-12

(d)