

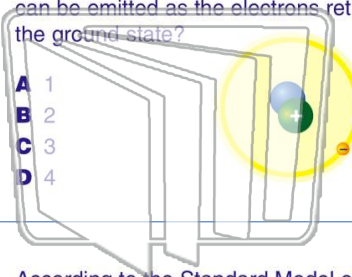


Name _____ Class _____ Date _____

1

After electrons in hydrogen atoms are excited to the $n = 3$ energy state, how many **different frequencies of radiation** can be emitted as the electrons return to the ground state?

- A 1
- B 2
- C 3
- D 4



2

Which phenomenon best supports the theory that **matter** has a **wave nature**?

- A electron momentum
- B electron diffraction
- C photon momentum
- D photon diffraction

3

According to the Standard Model of Particle Physics, a **meson** is composed of

A a quark and a muon neutrino

4

A **microwave** and an **x ray** are traveling in a **vacuum**. Compared to the wavelength and period of the microwave, the **x ray** has

5



PREVIEW

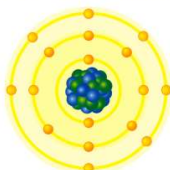
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7

- A 5.0×10^{-20} C
- B 8.0×10^{-20} C
- C 3.2×10^{-19} C
- D 5.0×10^{-19} C

Which type of force **overcomes** the repulsive electrostatic force between **protons** in the nucleus of an atom?

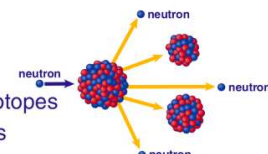
- A magnetic
- B nuclear
- C gravitational
- D centrifugal



10

High-energy neutrons are released in all nuclear fission reactions. What **material** is used in a reaction to **reduce the energy** of these neutrons to thermal levels?

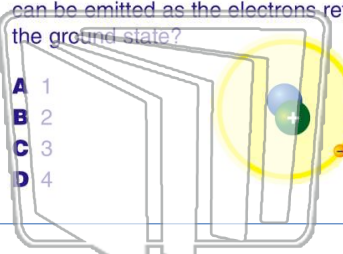
- A shielding
- B moderators
- C fissionable isotopes
- D thin metal foils





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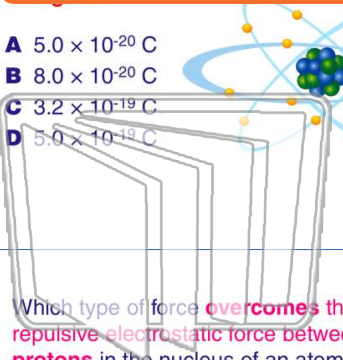
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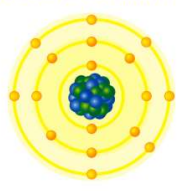
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- A opposite sign and a smaller magnitude
- B opposite sign and the same magnitude
- C same sign and a smaller magnitude
- D same sign and the same magnitude

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