



Chemistry

Name: _____

Section _____

RADIOACTIVITY WS

Date: _____

Directions (1-14): For *each* statement or question, choose the word or expression that, of those given, best completes the statement or answers the question.

- What is the mass number of an alpha particle?
(1) 1 (3) 0
(2) 2 (4) 4
- Which radioisotope is matched with its decay mode?
(1) H-3 and γ (3) N-16 and α
(2) K-42 and β^+ (4) P-32 and β^-
- Which radioisotope has an atom that emits a particle with a mass number of 0 and a charge of +1?
(1) ^3H (3) ^{19}Ne
(2) ^{16}N (4) ^{239}Pu
- Which particle is emitted when an atom of ^{85}Kr spontaneously decays?
(1) an alpha particle (3) a neutron
(2) a beta particle (4) a proton
- Which nuclear emission has the greatest mass?
(1) alpha particle (3) gamma ray
(2) beta particle (4) positron
- Which two radioisotopes have the same decay mode?
(1) ^{37}Ca and ^{53}Fe (3) ^{37}K and ^{42}K
(2) ^{220}Fr and ^{60}Co (4) ^{99}Tc and ^{19}Ne
- Which total mass is the *smallest*?
(1) the mass of 2 electrons
(2) the mass of 2 neutrons
(3) the mass of 1 electron plus the mass of 1 proton
(4) the mass of 1 neutron plus the mass of 1 electron
- Which particle has the *least* mass?
(1) ^4_2He (3) ^1_0n
(2) ^1_1H (4) $^0_{-1}\text{e}$
- Which subatomic particle is negatively charged?
(1) electron (3) positron
(2) neutron (4) proton
- Which particle has the greatest mass?
(1) an alpha particle (3) a neutron
(2) a beta particle (4) a positron
- The nucleus of a radium-226 atom is unstable, which causes the nucleus to spontaneously
(1) absorb electrons (3) decay
(2) absorb protons (4) oxidize
- A proton has a charge that is opposite the charge of
(1) an alpha particle (3) an electron
(2) a neutron (4) a positron
- A beta particle may be spontaneously emitted from
(1) a ground-state electron
(2) a stable nucleus
(3) an excited electron
(4) an unstable nucleus
- Which list of nuclear emissions is arranged in order from the least penetrating power to the greatest penetrating power?
(1) alpha particle, beta particle, gamma ray
(2) alpha particle, gamma ray, beta particle
(3) gamma ray, beta particle, alpha particle
(4) beta particle, alpha particle, gamma ray