



Name _____

Date _____

Time Taken _____

Radioactivity - A Cyberphysics Crossword

Clues Across:

- 3 A couple of centimetres of this or about 1m of air will absorb beta rays from a source.
- 5 The [30 across] [13 across] is the number of protons inside the nucleus. This is the same for all atoms of a particular element. It is also termed the [5 across] [13 across].
- 7 A dense material like this is needed to shield a gamma ray source and reduce the count from it to a low level.
- 9 All radioactive particles are emitted from the _____ of the atom.
- 11 A [11 across] [4 down] [24 across] is used to measure radioactive count.
- 13 The [30 across] [13 across] is the number of protons inside the nucleus. This is the same for all atoms of a particular element. It is also termed the [5 across] [13 across].
- 14 The process of decay is _____. Each radioactive atom in a sample has an equal chance of decaying. The laws of probability apply.
- 16 A radioactive particle made up of two protons and two neutrons.
- 19 The helical molecule that carries the genetic code. This can be altered by ionizing radiation.
- 20 [20 across] [17 down] is the time it takes for half of the radioactive atoms in a sample to decay.
- 22 Radioactive elements in the _____ contribute to the background radiation.
- 24 A [11 across] [4 down] [24 across] is used to measure radioactive count.
- 28 [23 down] [28 across] from space contribute to the background radiation count.
- 29 If a radioactive substance is used to find the path something takes (through the body or in nature, say, the path of a stream) it is called a _____
- 30 The [30 across] [13 across] is the number of protons inside the nucleus. This is the same for all atoms of a particular element. It is also termed the [5 across] [13 across].
- 31 Radioactive rays are _____. They make neutral atoms gain a charge.
- 32 [32 across] [1 down] can be used to find out how old artefacts are.
- 33 The antimatter radioactive particle that is like an electron only positive!
- 34 This is the term that is used to describe what happens when a radioactive nucleus gives out radiation.

Clues Down:

- 1 [32 across] [1 down] can be used to find out how old artefacts are.
- 2 Gamma rays can be used in _____ food and medical instruments. They kill bacteria.
- 4 A [11 across] [4 down] [24 across] is used to measure radioactive count.
- 6 A couple of sheets of this or 6 cm of air is enough to absorb alpha rays.
- 8 [8 down] [12 down] can be caused by ionizing radiation. That is why reproductive organs should always be carefully shielded when working with radiation.
- 10 This description of radioactive decay means that it is not possible for us to influence an atom (by changing pressure or temperature for example) and MAKE it decay.
- 11 Pure electromagnetic energy emitted from the nucleus of a radioactive atom.
- 12 [8 down] [12 down] can be caused by ionizing radiation. That is why reproductive organs should always be carefully shielded when working with radiation.
- 15 Gamma rays are the most _____ because they produce the least localized ionization.
- 17 [20 across] [17 down] is the time it takes for half of the radioactive atoms in a sample to decay.
- 18 The [18 down] [13 across] is sometimes used for the nucleon number - the total number of nucleons (protons plus neutrons) in the nucleus. But really this term is used for the average nucleon number and can contain fractions!
- 21 One of these changes into a proton when a beta particle is emitted.
- 22 This is a radioactive gas that contributes to the background radiation count.
- 23 [23 down] [28 across] from space contribute to the background radiation count.
- 25 Radiation _____ is the name of the treatment that kills tumours by bombarding cancerous tissue with ionizing radiation.
- 26 A radioactive particle that is identical in every way to an electron BUT originates from INSIDE the nucleus.
- 27 This can be caused by ionizing radiation