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- Which radioisotope is used in dating geological formations?
A) I-131 B) U-238
C) Ca-37 D) Fr-220
 - Which nuclides are used to date the remains of a once-living organism?
A) C-14 and C-12 B) Co-60 and Co-59
C) I-131 and Xe-131 D) U-238 and Pb-206
 - A radioactive-dating procedure to determine the age of a mineral compares the mineral's remaining amounts of isotope ^{238}U and isotope
A) ^{206}Pb B) ^{206}Bi C) ^{214}Pb D) ^{214}Bi
 - Which procedure is based on the half-life of a radioisotope?
A) accelerating to increase kinetic energy
B) radiating to kill cancer cells
C) counting to determine a level of radioactivity
D) dating to determine age
 - Which radioactive isotope is used in geological dating?
A) uranium-238 B) iodine-131
C) cobalt-60 D) technetium-99
 - Which radioisotope is used to treat thyroid disorders?
A) Co-60 B) I-131
C) C-14 D) U-238
 - Which radioactive isotope is used in treating cancer?
A) carbon-14 B) cobalt-60
C) lead-206 D) uranium-238
 - The radioisotope I-131 is used to
A) control nuclear reactors
B) determine the age of fossils
C) diagnose thyroid disorders
D) trigger fission reactors
 - The radioactive isotope carbon-14 can be used for
A) determining the age of a sample
B) determining medical disorders
C) controlling fission reactions
D) controlling speeds of neutrons
 - Which element is used for dating archaeological discoveries?
A) carbon-12 B) carbon-13
C) carbon-14 D) carbon-15
 - Radioisotopes used for medical diagnosis must have
A) long half-lives and be quickly eliminated by the body
B) long half-lives and be slowly eliminated by the body
C) short half-lives and be quickly eliminated by the body
D) short half-lives and be slowly eliminated by the body
 - Which radioisotope is used to diagnose thyroid disorders?
A) lead-206 B) iodine-131
C) cobalt-60 D) strontium-90
 - Radiation used in the processing of food is intended to
A) increase the rate of nutrient decomposition
B) kill microorganisms that are found in the food
C) convert ordinary nutrients to more stable forms
D) replace chemical energy with nuclear energy
 - Iodine-131 is used for diagnosing thyroid disorders because it is absorbed by the thyroid gland and
A) has a very short half-life
B) has a very long half-life
C) emits alpha radiation
D) emits gamma radiation
 - A radioisotope which is sometimes used by doctors to pinpoint a brain tumor is
A) carbon-12 B) lead-206
C) technetium-99 D) uranium-238
 - Which nuclide is used to investigate human thyroid gland disorders?
A) carbon-14 B) potassium-37
C) cobalt-60 D) iodine-131
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17. The decay of which radioisotope can be used to estimate the age of the fossilized remains of an insect?
- A) Rn-222 B) I-131
C) Co-60 D) C-14
18. Cobalt-60 and iodine-131 are radioactive isotopes that are used in
- A) dating geologic formations
B) industrial measurements
C) medical procedures
D) nuclear power
19. Which nuclide is paired with a specific use of that nuclide?
- A) carbon-14, treatment of cancer
B) cobalt-60, dating of rock formations
C) iodine-131, treatment of thyroid disorders
D) uranium-238, dating of once-living organisms
20. Which isotope is used to treat cancer?
- A) C-14 B) U-238
C) Co-60 D) Pb-206
21. Which isotope is most commonly used in the radioactive dating of the remains of organic materials?
- A) ^{14}C B) ^{16}N C) ^{32}P D) ^{37}K
22. Which isotopic ratio needs to be determined when the age of ancient wooden objects is investigated?
- A) uranium-235 to uranium-238
B) hydrogen-2 to hydrogen-3
C) nitrogen-16 to nitrogen-14
D) carbon-14 to carbon-12
23. Which radioisotope is used for diagnosing thyroid disorders?
- A) U-238 B) Pb-206
C) I-131 D) Co-60
24. 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
25. The course of a chemical reaction can be traced by using a
- A) polar molecule B) diatomic molecule
C) stable isotope D) radioisotope
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