

Using Radionuclides to Date Materials

With information drawn from the enrichment reading “Using Radionuclides to Date Materials” and your own knowledge, answer the following questions. Do additional research if necessary. (The Internet might be the quickest tool for brief additional information.) If your teacher tells you to work in groups, be sure to discuss your reasoning with each other.

Some of the following items could be dated by the technique of radiocarbon (carbon-14) dating; some could not. If the item could be dated by carbon-14 dating, place a capital “Y” (for “Yes”) on the line next to the item’s description. If it could not be dated by this method, place a capital “N” (for “No”) next to the item. After each item, briefly explain why you chose “Y” or “N.”

1. _____ The bones of a horse owned by one of the Roman emperors
2. _____ A pure gold drinking cup
3. _____ Dinosaur bones
4. _____ “Oetzi,” the frozen intact, middle-to-late stone-age (specifically, copper-age) hunter found by hikers in the Italian/Australian Alps in 1991
5. _____ Petrified bone or skin of an Egyptian mummy
6. _____ A recently excavated diamond
7. _____ The pages of a medieval manuscript made of stretched goat skins
8. _____ A papyrus manuscript from ancient Egypt
9. _____ Fossilized kernels of grain found in the cooking area of an Athenian home from the time of the Peloponnesian War