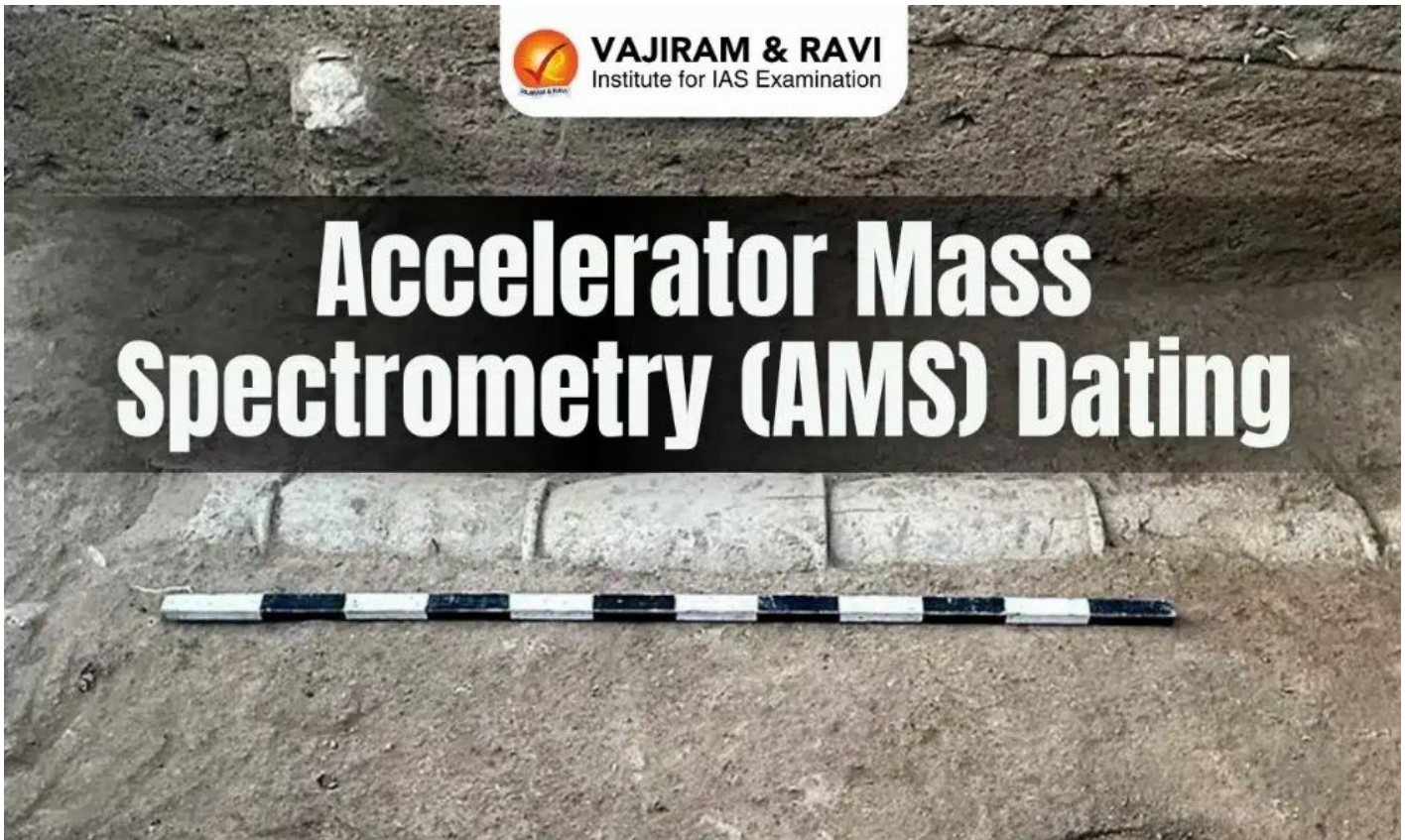


Accelerator Mass Spectrometry (AMS) Dating

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Accelerator Mass Spectrometry (AMS) Dating Latest News

The Tamil Nadu State Department of Archaeology (TNSDA) has dispatched 23 charcoal samples to the Beta Analytic laboratory in the United States for Accelerator Mass Spectrometry (AMS) dating.

About Accelerator Mass Spectrometry (AMS) Dating

- It is a precise method for **measuring the radioactive isotope** values of **Carbon-14** (C-14).
- It involves accelerating the ions to extraordinarily high kinetic energies followed by mass analysis.
- It is used primarily in **determining carbon 14 content** of archaeological artifacts and geological samples.
- It **detects atoms of specific elements** according to their atomic weights.
- There are essentially two parts in the process of radiocarbon dating through accelerator mass spectrometry.
- The first part involves accelerating the ions to extraordinarily **high kinetic energies**, and the subsequent **step involves mass analysis**.
- **Applications:** It is most widely used for isotope studies of ^{14}C , which has applications in a variety of fields such as radiocarbon dating, climate studies, and biomedical analysis.

Advantages of Accelerator Mass Spectrometry (AMS) Dating

- **Sample size:** Accelerator mass spectrometers **need only as little as 20 milligrams** and as high as 500 milligrams for certain samples whereas conventional methods need at least 10 grams in samples.
- **Time:** It **takes less time to analyze samples** for carbon 14 content compared to radiometric dating methods that can take one or two days.
- AMS measurements usually **achieve higher precision** than radiometric dating methods.

Source: TH

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