## Teacher Answer Key

### Case Study

1. CT scanning allows researchers to see inside a mummy without unwrapping or cutting it open, preserving the integrity of the specimen while revealing internal structures, implanted objects, and potential cause of death. Without CT scanning, the metallic object in the chest cavity would have remained invisible — or detecting it would have required destructive physical examination that could damage a 3,300-year-old artifact.

2. From the outside, the mummy looked like an ordinary upper-class burial. Only the CT scan showed a metal object in a location consistent with a penetrating wound to the heart. The reading gives a similar example: a CT scan revealed an arrowhead lodged in Otzi's left shoulder, showing that he was murdered. Both cases suggest that burials and records can hide how a person died, while scans of the body can reveal the cause of death without unwrapping it.

### Multiple Choice

1. C

2. A

3. B

### Matching

1-E, 2-D, 3-B, 4-A, 5-C

### Fill-in-the-Blank

1) natron, 2) glacier, 3) sphagnum

### Short Answer (Sample Responses)

Q1: CT scanning is non-invasive, meaning it reveals internal anatomy, foreign objects, and pathological conditions without physically cutting or unwrapping the specimen. For rare or irreplaceable mummies, this is critical — physical dissection destroys the very evidence it seeks to find, and cannot be undone. CT scanning also produces images that can be shared and analyzed by researchers worldwide.

Q2: Bog bodies are preserved by the acidic, cold, oxygen-poor conditions of peat bogs, which tan the skin like leather but often dissolve the bones. Egyptian mummies, by contrast, are preserved through intentional desiccation using natron, which dries both soft tissue and bone. Bog bodies excel at preserving skin, hair, and

gut contents; Egyptian mummies preserve the overall body form and internal organs more completely.

Q3: Otzi's body reveals a middle-aged man in reasonably good health who was carrying sophisticated equipment — a copper axe, bow and arrows, tailored clothing — indicating a relatively advanced material culture. The arrowhead in his shoulder and defensive wounds on his hands show that interpersonal violence, including lethal ambush attacks, was a reality of Copper Age life, not just a feature of later historical periods.