Teacher Answer Key

Case Study

1. The museum used photogrammetry by taking many overlapping photographs of the original scarab from different angles. Software calculated the 3D shape, and the resulting digital model was sent to a 3D printer to produce a physical replica at the same scale.

2. Replicas provide meaningful tactile experiences and make artifacts accessible to people who cannot see the originals. However, something is lost because replicas lack the material authenticity of the original, and the reading acknowledges that replicas are not substitutes but rather preservations of form and detail.

Multiple Choice

1. A

2. B

3. D

Matching

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

Fill-in-the-Blank

1) CyArk, 2) photogrammetry, 3) Mosul

Short Answer (Sample Responses)

Q1: Photogrammetry has become more accessible because it can now be done with consumer cameras and smartphones rather than expensive specialized equipment. This means more archaeological data is being preserved in 3D than ever before, especially at smaller projects that lack large budgets.

Q2: For education, VR reconstructions let people walk through ancient spaces like a Roman forum, creating a visceral connection to the past. For research, virtual models at sites like Stonehenge have been used to test theories about astronomical alignment and simulate different construction stages.

Q3: Climate change, rising sea levels, armed conflict, development, and natural disasters all threaten archaeological sites. Digital preservation is sometimes the only option because the physical threats are too large or expensive to stop, so creating detailed digital records ensures knowledge survives even when the sites do not.