Teacher Answer Key

Case Study

1. Titus faces a structural failure risk in an aqueduct arch and must weigh quick fixes against more expensive but reliable solutions, all under pressure from commanders who want results immediately. This shows the constant tension between maintaining durable infrastructure and the political/logistical demands of daily life.

2. The fact that Titus's job is still needed after eleven years — and that Roman aqueducts required ongoing professional maintenance — shows that while the materials were durable, Roman infrastructure required human expertise and sustained effort to function properly.

Multiple Choice

1. D

2. B

3. A

Matching

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

Fill-in-the-Blank

1) 80,000, 2) concrete, 3) one (1)

Short Answer (Sample Responses)

Q1: Roads allowed rapid movement of troops, goods, and official messages across a vast empire, making Roman military response and economic integration possible. Unlike dirt paths, Roman roads were engineered with layers of gravel, concrete, and stone slabs with drainage ditches to ensure year-round usability.

Q2: Scientists found that seawater reacts with Roman volcanic ash concrete to create mineral crystals that reinforce the material over time, unlike modern concrete which is degraded by seawater. This could inspire more durable and sustainable building materials for coastal infrastructure.

Q3: The Cloaca Maxima sewer system dramatically reduced disease in one of the ancient world's densest cities, representing a public health achievement not matched in Western history until the 1800s. Clean water in and waste removed efficiently were inseparable parts of what made Roman cities survivable at large scale.