Teacher Answer Key

Case Study

1. A deep covered pot insulates its own center, so the exterior cooled while the middle held heat for hours. The center stayed in the 41 to 135 danger zone all night while bacteria doubled roughly every twenty minutes.

2. The chili blew past both cooling stages, spending far more than six hours in the danger zone and more than the four cumulative hours allowed. Once that limit is exceeded the food must be discarded, because reheating does not remove toxins already produced.

Multiple Choice

1. C

2. C

3. D

Matching

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

Fill-in-the-Blank

1) 165, 2) 20, 3) 32

Short Answer (Sample Responses)

Q1: Bacteria multiply exponentially, so the harm depends on how long food stays warm as well as how warm it gets. A short trip through the danger zone is survivable, but hours in it produce enough bacteria to cause illness.

Q2: A large mass insulates its own center, so the outside cools while the middle stays in the danger zone for hours. Heating moves food through the zone quickly, but cooling can leave it there overnight without any visible sign.

Q3: Hot holding equipment maintains temperature rather than raising it. Lukewarm food will sit in the danger zone for a long time while the steam table slowly warms it, giving bacteria hours to multiply.