Teacher Answer Key

Case Study

1. First: Night Mode or low-light processing — the photo was taken in a dimly lit room. The AI took multiple exposures and merged them, producing the bright, detailed, low-noise image the grandmother saw. Second: Portrait mode (semantic segmentation) — the background is naturally blurred and the grandmother's face is sharp. The AI classified her face and body as foreground and applied simulated blur to everything else. Both processes were invisible to Lena but fundamental to the photo's quality.

2. The distinction matters in contexts where photos are expected to reflect physical reality. For a personal family portrait, it may not matter much — the photo captures a real moment and the grandmother's real face. But the reading points to contexts where it does matter: news photography, legal evidence, identity documents. The Samsung moon controversy illustrates the extreme case: when AI generates detail that wasn't there, the photo is no longer evidence of what the camera saw. Lena's hesitation is well-founded — 'my phone' does not fully capture what created that image.

Multiple Choice

1. A
2. C
3. B

Matching

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

Fill-in-the-Blank

1) Pixel, 2) semantic, 3) poster

Short Answer (Sample Responses)

Q1: Night Mode takes 9-15 rapid exposures, each slightly different due to hand movement and lighting variation. An AI model analyzes all frames simultaneously, aligns them to account for motion, and merges the best-exposed regions into one composite. The result is 'constructed' because no single exposure was ever taken — the final image is a synthesized blend that did not exist as a single captured moment.

Q2: The Samsung moon example is the clearest case of fabrication: the AI added lunar surface detail to a photo of a poster of the moon — detail that was not in the actual captured image and did not exist in the real scene. Skin smoothing applied by default in portrait mode is another arguable example — it removes real detail from someone's actual appearance, replacing it with an AI-generated version. The distinction from enhancement is that fabrication adds or removes real-world detail rather than clarifying it.

Q3: Benefits of disclosure: photographers, journalists, and courts using phone images as evidence need to know what was algorithmically altered. Consumers making purchasing decisions about cameras should know what role AI plays. Human subjects photographed might prefer transparency about how their appearance was processed. Potential objections: manufacturers might argue disclosure is technically complex, disrupts user experience, or is commercially sensitive. The most defensible position is that AI-generated detail — as opposed to noise reduction or exposure correction — should require disclosure.