Teacher Answer Key

Case Study

1. Marcus noticed lip-sync mismatches between audio and mouth movements, an unnatural smoothness to the face, and a lack of blinking over 30 seconds. These clues reflect real limitations of current GAN-based deepfakes, which often struggle to accurately replicate natural micro-movements like blinking and precise audio-visual synchronization.

2. Even when warning signs were present, social pressure and the excitement of a viral rumor overrode critical thinking. Students wanted the news to be true, which made them dismiss skepticism — showing that deepfakes succeed partly through exploiting emotional desire and peer conformity, not just technological deception.

Multiple Choice

1. A

2. B

3. C

Matching

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

Fill-in-the-Blank

1) fake, 2) generator, 3) authentic

Short Answer (Sample Responses)

Q1: A GAN pits a generator network against a discriminator network. Each time the discriminator catches a fake, the generator refines its technique. After thousands of iterations, the generator becomes extremely skilled at creating realistic fakes because it has been specifically trained to fool the most sophisticated detector available.

Q2: At the harmless end, deepfake technology helps filmmakers de-age actors or lets museum exhibits 'resurrect' historical figures for education. At the dangerous end, politically motivated deepfakes of world leaders can trigger panic, market crashes, or violence before verification is possible. The same tool produces different outcomes based entirely on intent and target.

Q3: As deepfake generation improves, detection tools must constantly update to keep pace — but generation consistently outpaces detection. This arms race dynamic suggests that technology alone cannot solve the problem; human critical thinking,

media literacy, and verification habits are essential components of any realistic defense.