Teacher Answer Key

Case Study

1. Upwelling brings nutrient-rich water to the surface, fueling massive phytoplankton blooms.

2. El Niño reduces upwelling, leading to declines in phytoplankton and fish populations.

Multiple Choice

1. D

2. A

3. D

Matching

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

Fill-in-the-Blank

1) photic, 2) fisheries, 3) climate

Short Answer (Sample Responses)

Q1: Red wavelengths are absorbed quickly, but blue and green light penetrate deeper.

Q2: It produces oxygen and removes carbon dioxide, preventing climate imbalance.

Q3: Examples: diatoms with silica shells, dinoflagellates with mobility, coccolithophores with carbonate plates, cyanobacteria with light-capturing pigments.