Teacher Answer Key

Case Study

1. The lateral line tracks a seal's wake (movement/pressure), while the ampullae of Lorenzini guide the final strike by detecting the seal's electrical signals (e.g., heartbeat).

2. With electrical cues removed, sharks lose the precise locator for hidden prey; sight and smell were insufficient under sand, so they lacked the final targeting signal.

Multiple Choice

1. C

2. B

3. B

Matching

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

Fill-in-the-Blank

1) lateral line, 2) ampullae of Lorenzini, 3) swim bladder

Short Answer (Sample Responses)

Q1: Schooling reduces predation risk and improves hydrodynamic efficiency; the lateral line lets fish sense neighbors' wakes to maintain spacing and align turns without visual contact.

Q2: Underwater noise from ships or drilling masks low-frequency sounds, disrupting communication and predator detection; chemical pollution can blunt olfaction, hindering homing and foraging.

Q3: Vision: clear, sunlit reef for color cues and social signals. Smell: salmon tracking natal stream chemistry. Hearing: detecting distant predators/conspecific calls via low-frequency sound.