Teacher Answer Key

Case Study

1. Lunch #1 was concentrated refined carbohydrates, which raised insulin and shifted the ratio of tryptophan to other large neutral amino acids so more tryptophan could cross into the brain. Eating quickly and eating a lot pushed the parasympathetic response harder, and staying indoors in dim light afterward added to the pull toward sleep.

2. After Lunch #2 she ate slowly, drank water, and went for a walk outside in cold sun, and daylight and movement both push alertness up. The turkey was the same on both days, which is what shows the sleepiness came from meal composition, pacing, and setting rather than from the meat.

Multiple Choice

1. A

2. B

3. C

Matching

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

Fill-in-the-Blank

1) LNAA (large neutral amino acid), 2) barrier, 3) circadian

Short Answer (Sample Responses)

Q1: Fiber slows gastric emptying and glucose absorption, flattening the insulin spike; steadier blood sugar reduces the sharp post-meal slump even at equal calories.

Q2: Seek daylight and a short walk; pace eating and keep portions moderate; hydrate; maintain brighter lighting—any two with brief explanation.

Q3: Alcohol is a CNS depressant that promotes initial sedation but fragments later sleep by disrupting REM and causing awakenings, reducing overall sleep quality.