

Solutions

2.1 A When blood glucose is high, insulin helps increase glucose uptake and storage as glycogen. When it is low, glucagon supports release of glucose from stores. These responses are coordinated, not identical effects of two hormones.

2.2 percentage increase = $(5.0 - 4.0) / 4.0 \times 100 = 25\%$.

2.3 False. Negative feedback does not mean the response is harmful or the measured value becomes negative. Diabetes has different mechanisms; do not treat every case as a failure to make insulin.

2.4 homeostasis. homeostasis means Maintenance of suitable internal conditions.

3.1 The disturbance is +25%. A negative-feedback response opposes it. Recovery is consistent with regulation but cannot by itself identify sensor, signalling pathway or rule out another cause.