

2024 Bi H1 Q17

Section: Metabolism and Survival

Topic: Environmental Control of Metabolism

Question Summary:

The graph shows the effect of different concentrations of disinfectant on bacterial survival time. The question asks what conclusion can be drawn from the results.

Worked Solution:

- The disinfectant kills bacteria over time. The higher the concentration, the faster the bacteria are killed.
- At low concentrations, bacterial numbers decline slowly, taking longer to reach zero survival.
- At high concentrations, the disinfectant acts more rapidly, so all bacteria are killed in a shorter time.

Therefore, increasing the disinfectant concentration decreases the time required to kill all bacteria.

Final Answer: **D** (As concentration of disinfectant increases, the time taken to kill all bacteria decreases).

Revision Tips:

- Concentration and time are inversely related for chemical control of microbial growth.
- Disinfectants and antiseptics reduce or eliminate microbial populations.

- Graph questions often test 'trend recognition' — describe what the data shows, not just the numbers.