

2024 Bi H1 Q7

Section: DNA and the Genome

Topic: Natural Selection (Peppered Moths)

Question Summary:

Light and dark peppered moths rely on camouflage to avoid predation. In unpolluted habitats, light moths are favoured and dark moths are predated more. Which row describes the selection and identifies the type of selection?

Worked Solution:

- Predation selects against the more visible phenotype. This is selection acting due to environmental conditions, so it is non-random (not by chance).
- Because one phenotype (light) is consistently favoured over the other (dark) in that environment, the population is pushed towards one extreme. This is directional selection.

Therefore, the correct row is: non-random; directional.

Final Answer: **B** (non-random, directional).

Revision Tips:

- Directional selection -> one extreme phenotype is favoured.
- Disruptive selection -> both extremes favoured over intermediates (not the case here).
- Stabilising selection -> intermediate phenotype favoured.