

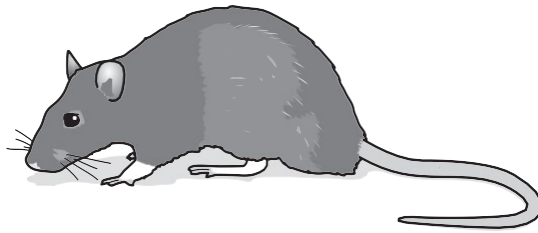
GCSE Biology A (Gateway)

J247/02 B4-B6 and B7 Foundation (Foundation Tier)

Question Set 21

1

Rats are a major pest in many areas of the world. They can reduce food security and spread diseases.



- (a) Warfarin is a chemical that is used as a rat poison. It stops platelets working in the blood.

Describe the function of platelets in the blood.

[2]

- (b) Some rats are resistant to warfarin. When fed with large amounts of warfarin the rats do not die.

Scientists found that the resistance is due to the dominant allele **R**.

Two resistant rats (**Rr**) mate.

Complete this genetic diagram to find the ratio of resistant rats to non-resistant rats that would be expected to be produced.

		Rr
R		
r		Rr

Ratio =

[3]

- (c) After several years, the percentage of resistant rats in the population had increased.

Use Darwin's theory of natural selection to explain this observation.

[3]

- (d) Scientists are now trying to find another poison to use on rats.

They have introduced a chemical called phosphine. This blocks the action of mitochondria in rat cells.

Explain why this might kill rats.

[3]

Total Marks for Question Set 21: 11

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