

10.2 Inheritance

Question Paper

Course	DP IB Biology
Section	10. Genetics & Evolution (HL Only)
Topic	10.2 Inheritance
Difficulty	Easy

Time allowed: 10
Score: /5
Percentage: /100

Question 1

Two pea plants are heterozygous for two traits, pod and flower colour. The dominant trait for flower colour is purple and the recessive is white. The dominant trait for pod colour is green and the recessive is yellow.

If they were to breed what would the ratio of their offspring's traits be?

The ratio is as follows: purple green : purple yellow : white green : white yellow.

- A. 2:1:1:2
- B. 1:1:1:1
- C. 9:3:3:1
- D. 3:3:1:1

[1 mark]

Question 2

In a newt, normal tail length is dominant to short tail length and green scales are dominant to white scales.

A heterozygous normal tailed newt with green scales was crossed with a short tailed newt with white scales. A large number of offspring were produced. They were either normal tailed with green scales or short tailed with white scales in equal number.

What is the most likely cause of this pattern?

- A. The genes are codominant
- B. Crossing over has occurred
- C. The two genes are linked
- D. The traits are polygenic

[1 mark]

Question 3

Hair colour is a trait controlled by polygenic inheritance. Which statement is correct?

- A. Hair colour shows discontinuous variation
- B. Individuals show a wide range of phenotypes for hair colour
- C. No two people have the same hair colour
- D. Children always have the same hair colour as one of their parents

[1 mark]

Question 4

A test cross resulted in these recombinants:

$$\frac{gR}{gr} \quad \frac{Gr}{gr}$$

Which of the following was the parental test cross?

A. $\frac{GR}{gR} \times \frac{gr}{Gr}$

B. $\frac{Gr}{gR} \times \frac{gr}{gr}$

C. $\frac{GR}{gr} \times \frac{gr}{gr}$

D. $\frac{GR}{gr} \times \frac{GR}{gr}$

[1 mark]

Question 5

In fruit flies (*Drosophila melanogaster*) brown body is dominant to black body.

If scientists want to find out the genotype of a fly with a brown body what genotype would they cross the fly with?

- A. Homozygous recessive
- B. Heterozygous recessive
- C. Homozygous dominant
- D. Heterozygous dominant

[1 mark]