1.15 DNA, Genetics and Inheritance: 10-minute Pack

AQA 8464 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Different forms of the same gene are called alleles.

(a) Define the term 'allele'. **(1)**

(b) Define the term 'genotype'. **(1)**

(c) Define the term 'phenotype'. **(1)**

(Total for Question 1 is 3 marks)

2 A student observes that in a species, a gene for blue eyes is dominant to a gene for brown eyes. Use B for blue and b for brown.

(a) Write the genotype of a homozygous blue-eyed individual. **(1)**

(b) A heterozygous blue-eyed individual (Bb) is crossed with a brown-eyed individual. Give the expected phenotype ratio for their offspring. **(1)**

(Total for Question 2 is 2 marks)

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3 In a genetic cross, the probability that an offspring has a particular genotype is 3 in 8.

(a) Write this probability as a fraction, in its simplest form. **(1)**

.....

(b) Write this probability as a decimal. **(1)**

.....

(c) Write this probability as a percentage. **(1)**

.....

(Total for Question 3 is 3 marks)

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Mark scheme · 1.15 DNA, Genetics and Inheritance: 10-minute Pack

Question 1

(a) one of the alternative/different forms of a gene, oe **B1**

(a) Answer: One of the different forms of a gene.

(b) the combination of alleles an organism has for a particular characteristic, oe **B1**

(b) Answer: The combination of alleles an organism has for a characteristic.

(c) the observable physical characteristics of an organism, resulting from its genotype (and, in some cases, the environment), oe **B1**

(c) Answer: The observable physical characteristics of an organism.

Question 2

(a) BB cao **B1**

(a) Answer: BB

(b) 1 blue : 1 brown (or 1:1) cao **B1**

(b) Answer: 1 blue : 1 brown

Question 3

(a) 3/8 cao (already in simplest form) **B1**

(a) Answer: 3/8

(b) 0.375 cao **B1**

(b) Answer: 0.375

(c) 37.5% cao, ft from (b) **B1**

(c) Answer: 37.5%

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