

AQA, OCR, Edexcel

GCSE Science

GCSE Biology

Genes and Inheritance Answers

Name:

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Total Marks: /20

Q1: What is an allele?

A= Different forms of the same gene / Variants

(1 mark)

Q2: Describe what is meant by a dominant allele.

A= Coding of a characteristics present on only one chromosome

(1 mark)

Q3: What is a recessive allele?

A= Characteristic coded on both chromosomes

(1 mark)

Q4: Discuss the differences between a heterozygote and a homozygote.

A= 1 mark for each of the following:

- Homozygote – 2 identical alleles
- Heterozygote – 2 different alleles

(2 marks)

Q5: Blue eyes are an inherited characteristic draw a punnet square to show the possible offspring with blue eyes.

Genotype	B	b
B	BB	Bb
b	Bb	bb

A= 1 mark for correct square labels, 1 mark for each correct combination

(5 marks)

Q6: Explain how a genetic diagram is useful to scientists.

A= 1 mark for continuous prose and 3 of the following:

- Shows parents alleles/characteristics
- Shows possible inheritance of alleles
- Shows possible phenotypes
- Shows gene dominance

(4 marks)

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Q7: Define the term phenotype and give an example of a mouse phenotype.

A= 1 mark for each of the following:

- Physical appearance of a particular characteristic
- E.g. Fur colour

(2 marks)

Q8: Using the punnet square below what is the percentage chance of male sex inheritance.

Gametes	X	Y
X	XX	XY
X	XX	XY

A= 50%

(1 mark)

Q9: Why are genetic characteristic family trees useful?

A= Accept 3 of the following:

- Track inherited diseases
- Show likeliness of inherited diseases
- Show allele dominance
- Likelihood homozygous/ heterozygous

(3 marks)