Inheritance and Evolution

GCSE Science • **Combined and Triple** • Grades 4–7

Name: _____ Class: _____ Total: _____ / 51

Show all your working. Marks are given for correct method as well as the final answer.

1. Name the molecule that carries genetic information. **[1 mark]**

Answer: _____

2. Define a gene. **[2 marks]**

Answer: _____

3. Define the genome of an organism. **[1 mark]**

Answer: _____

4. Write down the number of chromosomes in a normal human body cell. **[1 mark]**

Answer: _____

5. Write down the number of chromosomes in a human gamete. **[1 mark]**

Answer: _____

6. Give two differences between mitosis and meiosis. **[2 marks]**

Answer: _____

7. Define a dominant allele. **[2 marks]**

Answer: _____

8. Define a recessive allele. **[2 marks]**

Answer: _____

9. Explain the difference between genotype and phenotype. **[2 marks]**

Answer: _____

10. Write down what Bb is called. **[1 mark]**

Answer: _____

11. Write down what bb is called. **[1 mark]**

Answer: _____

12. Two heterozygous parents (Bb) are crossed. Complete the Punnett square. **[2 marks]**

	B	**b**
B		
b		

Answer: _____

13. Using that cross, write down the ratio of dominant to recessive phenotypes. **[2 marks]**

	B	**b**
B		
b		

Answer: _____

14. Using that cross, write down the probability of a homozygous recessive offspring. **[2 marks]**

Answer: _____

15. A homozygous dominant (BB) is crossed with a homozygous recessive (bb). Write down the genotypes of the offspring. **[3 marks]**

Answer: _____

16. Write down the sex chromosomes of a human male and a human female. **[2 marks]**

Answer: _____

17. Explain why the chance of having a boy is 50%. **[3 marks]**

Answer: _____

18. Define natural selection. **[3 marks]**

Answer: _____

19. A population of beetles lives on dark bark. Most are pale, a few are dark.

(a) Explain how the population could become mostly dark. **[4 marks]**

(b) State where the dark colour originally came from. **[2 marks]**

Answer: _____

20. Cystic fibrosis is caused by a recessive allele (f). Two carriers (Ff) have a child.

(a) Work out the probability the child has the disorder. **[3 marks]**

(b) Work out the probability the child is a carrier. **[3 marks]**

Answer: _____

21. Bacteria can become resistant to antibiotics.

(a) Explain how a resistant population develops. **[4 marks]**

(b) Give two ways doctors slow this down. **[2 marks]**

Answer: _____

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