CALIFORNIA BIOLOGY · UNIT 3 · 10 QUESTIONS

Heredity: Inheritance and Variation — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1

Gel electrophoresis separates DNA fragments by size because smaller fragments move through the gel

A Only toward the negative end

B Slower than larger fragments

C Farther than larger fragments

D Only when heated

Understand It with Pulse

Flag a mistake

2 **A sex linked recessive trait carried by a mother who is a carrier has a chance of appearing in each son of**

A 100 percent

B 0 percent

C 50 percent

D 25 percent

Understand It with Pulse | Flag a mistake

3 **Polygenic traits, such as human height, are controlled by**

A Mitochondria only

B One gene only

C The X chromosome only

D Many genes together with the environment

Understand It with Pulse | Flag a mistake

4 **The environment can affect gene expression, for example when temperature affects coat colour in some animals, showing that phenotype results from**

A Genotype only

B Genotype interacting with environment

C Meiosis only

D Mutation only

Understand It with Pulse | Flag a mistake

5 **A karyotype is a picture of an organisms chromosomes arranged by**

A Size and shape

B Colour only

C Function only

D Age

Understand It with Pulse | Flag a mistake

6 **Sickle cell disease is caused by a mutation in the gene for**

- A Insulin
- B Haemoglobin
- C Collagen
- D Keratin

Understand It with Pulse | Flag a mistake

7 **A silent mutation changes a DNA base but does not change the amino acid produced, often because the genetic code is**

- A Redundant, with several codons for one amino acid
- B Not copied
- C Only in mitochondria
- D Read backwards

Understand It with Pulse | Flag a mistake

8 **In a pedigree, two unaffected parents have an affected child The trait is most likely**

A Recessive

B Dominant

C Codominant only

D Sex linked dominant

Understand It with Pulse | Flag a mistake

9 **A plant with genotype Rr is crossed with a plant with genotype rr, where R is round and r is wrinkled The expected fraction of wrinkled offspring is**

ANSWER _____

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10 **A human gamete normally has 23 chromosomes After fertilization, the zygote normally has how many chromosomes**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	C	**5.**	A	**9.**	0.5
2.	C	**6.**	B	**10.**	46
3.	D	**7.**	A		
4.	B	**8.**	A		

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