VIRGINIA BIOLOGY · UNIT 2

Genetics and Heredity — Practice Test

Virginia Biology • 25 questions

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 **A gene is best described as a section of DNA that codes for a**

- A Chromosome
- B Protein
- C Lipid
- D Cell

Understand It with Pulse | Flag a mistake

2 **Different forms of the same gene are called**

A Alleles

B Codons

C Proteins

D Chromatids

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3 **An organism genotype is its**

A Observable traits

B Number of chromosomes

C Genetic makeup

D Cell type

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4 **An organism phenotype is its**

A DNA sequence

B Allele pair

C Chromosome count

D Observable traits

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5 **An organism with two identical alleles for a gene is**

A Homozygous

B Heterozygous

C Hybrid

D Recessive

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6 **An organism with two different alleles for a gene is**

A Homozygous

B Heterozygous

C Purebred

D Dominant

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7 **In a cross between two heterozygous pea plants Aa times Aa what fraction of offspring are expected to show the dominant trait**

A One fourth

B One half

C Three fourths

D All of them

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8 **In a cross between Aa and aa what percent of offspring are expected to be heterozygous Aa**

ANSWER _____

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9 **If two heterozygous parents have 200 offspring about how many are expected to show the recessive trait**

ANSWER _____

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10 **Mendel law of segregation states that allele pairs separate during the formation of**

A Gametes

B Proteins

C Ribosomes

D Enzymes

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11 **Mendel law of independent assortment states that genes for different traits are inherited**

A Always together

B Independently

C Only from the mother

D Only from the father

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12 **When a red flower and a white flower produce pink offspring the pattern is called**

A Codominance

B Complete dominance

C Incomplete dominance

D Linked inheritance

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13 **In human blood type a person with type AB blood shows both A and B antigens This is an example of**

- A Incomplete dominance
- B Recessive inheritance
- C Sex linkage
- D Codominance

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14 **A dihybrid cross between two heterozygous parents is expected to give a phenotype ratio of**

- A 9 to 3 to 3 to 1
- B 3 to 1
- C 1 to 2 to 1
- D 1 to 1

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15 **A trait carried on the X chromosome appears more often in males because males have**

A Two X chromosomes

B Only one X chromosome

C No Y chromosome

D Two Y chromosomes

Understand It with Pulse | Flag a mistake

16 **A female human normally has which pair of sex chromosomes**

A XY

B YY

C XX

D XO

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17 **Down syndrome is usually caused by an extra copy of chromosome**

ANSWER _____

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18 **The failure of chromosomes to separate properly during meiosis is called**

A Nondisjunction

B Transcription

C Replication

D Crossing over

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19 **A change in the DNA sequence of a gene is called a**

- A Codon
- B Mutation
- C Allele
- D Phenotype

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20 **A pedigree chart is most useful for tracing**

- A Enzyme activity
- B Cell division
- C A trait through a family
- D Protein shape

Understand It with Pulse | Flag a mistake

21 **A carrier of a recessive disorder has one copy of the recessive allele and usually**

A Shows the disorder

B Has no copies

C Cannot pass it on

D Does not show the disorder

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22 **DNA replication produces two molecules each with one old strand and one new strand This is called**

A Semiconservative replication

B Conservative replication

C Translation

D Transcription

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23 **During meiosis crossing over exchanges genetic material between**

- A Sister chromatids
- B Homologous chromosomes
- C Ribosomes
- D Mitochondria

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24 **Which process creates new combinations of alleles in offspring and increases genetic variation**

- A Mitosis
- B Cloning
- C Sexual reproduction
- D Binary fission

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25

Two parents are both heterozygous for a trait What percent of their offspring are expected to be homozygous dominant

ANSWER

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ANSWER KEY

1. B
2. A
3. C
4. D
5. A
6. B
7. C
8. 50
9. 50
10. A
11. B
12. C
13. D
14. A
15. B
16. C
17. 21
18. A
19. B
20. C
21. D
22. A
23. B
24. C
25. 25

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