BIOLOGY · NEBRASKA

Biology
Practice Test

Unit 2: Genetics and Heredity

25 Questions

Original practice test based on the Nebraska curriculum. Work through each question, then check your answers at the end.

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.

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Question 1

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

A) Chromosome

B) Protein

C) Lipid

D) Cell

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Question 2

Different forms of the same gene are called

A) Alleles

B) Codons

C) Proteins

D) Chromatids

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Question 3

An organism genotype is its

A) Observable traits

B) Number of chromosomes

C) Genetic makeup

D) Cell type

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Question 4

An organism phenotype is its

A) DNA sequence

B) Allele pair

C) Chromosome count

D) Observable traits

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Question 5

An organism with two identical alleles for a gene is

A) Homozygous

B) Heterozygous

C) Hybrid

D) Recessive

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Question 6

An organism with two different alleles for a gene is

A) Homozygous

B) Heterozygous

C) Purebred

D) Dominant

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Question 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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Question 8

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

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Question 9

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

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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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

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Question 16

A female human normally has which pair of sex chromosomes

A) XY

B) YY

C) XX

D) XO

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Question 17

Down syndrome is usually caused by an extra copy of chromosome

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Question 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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Question 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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Question 20

A pedigree chart is most useful for tracing

A) Enzyme activity

B) Cell division

C) A trait through a family

D) Protein shape

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Question 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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Question 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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Question 23

During meiosis crossing over exchanges genetic material between

A) Sister chromatids

B) Homologous chromosomes

C) Ribosomes

D) Mitochondria

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Question 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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Question 25

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

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ANSWER KEY

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

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