Genetic Processes — Practice Test

Ontario Biology, Grade 11, University Preparation (SBI3U) • 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 **An organism has a diploid chromosome number of 10. How many chromosomes are in one of its gametes?**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **In a dihybrid cross, about 9 out of 16 offspring show both dominant traits. Out of 160 offspring, about how many show both dominant traits?**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A dihybrid cross between two heterozygous parents gives a phenotypic ratio of about**

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

Understand It with Pulse | Flag a mistake

4 **A gene is best defined as**

- A a whole chromosome
- B a section of DNA that codes for a protein or RNA
- C a single nucleotide
- D the entire genome

Understand It with Pulse | Flag a mistake

5 **A karyotype is**

A a pedigree chart

B a DNA sequence

C a family tree only

D a photograph of chromosomes arranged by size and shape

Understand It with Pulse | Flag a mistake

6 **A mutation is**

A always harmful

B a change in phenotype only

C caused only by radiation

D a change in the DNA sequence

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7 **A pedigree chart that shows a trait appearing in every generation is most consistent with**

A a dominant trait

B a recessive trait skipping generations

C a sex linked trait only in females

D an acquired trait

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8 **A person with blood type O can receive blood from a donor with blood type**

A AB only

B O only

C A only

D any type

Understand It with Pulse | Flag a mistake

9 **An allele is**

A a different form of a gene

B a chromosome pair

C a type of cell

D a protein only

Understand It with Pulse | Flag a mistake

10 **Codominance is shown when a person with blood type AB has**

A only A antigens

B only B antigens

C both A and B antigens

D neither antigen

Understand It with Pulse | Flag a mistake

11 Crossing over during meiosis

- A creates identical gametes
- B doubles chromosome number
- C exchanges segments between homologous chromosomes, creating new allele combinations
- D prevents mutation

Understand It with Pulse | Flag a mistake

12 DNA replication produces

- A one new molecule and one old molecule destroyed
- B two molecules, each with one old strand and one new strand
- C two entirely new molecules
- D four identical molecules

Understand It with Pulse | Flag a mistake

13 **Down syndrome is caused by**

A an extra copy of chromosome 21

B a missing chromosome

C a single gene mutation on the X chromosome

D an infection

Understand It with Pulse | Flag a mistake

14 **During meiosis, a diploid cell divides to produce**

A two identical diploid cells

B four genetically different haploid cells

C four identical diploid cells

D two haploid cells only

Understand It with Pulse | Flag a mistake

15 **During mitosis, a diploid cell divides to produce**

A two genetically identical diploid cells

B four genetically different haploid cells

C two haploid cells

D one diploid cell and one haploid cell

Understand It with Pulse | Flag a mistake

16 **Genetic engineering differs from selective breeding because genetic engineering**

A takes many generations

B directly changes DNA in a laboratory

C cannot produce new traits

D only works in plants

Understand It with Pulse | Flag a mistake

17 **In a diploid organism with 2n equal to 46, a gamete normally contains**

A 46 chromosomes

B 23 chromosomes

C 92 chromosomes

D 12 chromosomes

Understand It with Pulse | Flag a mistake

18 **In a test cross, an organism showing the dominant phenotype is crossed with**

A a heterozygous organism

B a homozygous recessive organism

C a homozygous dominant organism

D itself

Understand It with Pulse | Flag a mistake

19 **In DNA, adenine always pairs with**

A cytosine

B guanine

C thymine

D uracil

Understand It with Pulse | Flag a mistake

20 **In DNA, guanine always pairs with**

A adenine

B thymine

C cytosine

D uracil

Understand It with Pulse | Flag a mistake

21 **Incomplete dominance is shown when a red flower crossed with a white flower produces**

- A all red flowers
- B all white flowers
- C pink flowers
- D no flowers

Understand It with Pulse | Flag a mistake

22 **Two heterozygous pea plants are crossed. About three quarters of the offspring show the dominant trait. Out of 40 offspring, about how many show the dominant trait?**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **An organism has a diploid chromosome number of 20. How many chromosomes are in one of its gametes?**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **In a dihybrid cross, about 9 out of 16 offspring show both dominant traits. Out of 320 offspring, about how many show both dominant traits?**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **An organism has a diploid chromosome number of 36. How many chromosomes are in one of its gametes?**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	5	**10.**	C	**19.**	C
2.	90	**11.**	C	**20.**	C
3.	A	**12.**	B	**21.**	C
4.	B	**13.**	A	**22.**	30
5.	D	**14.**	B	**23.**	10
6.	D	**15.**	A	**24.**	180
7.	A	**16.**	B	**25.**	18
8.	B	**17.**	B		
9.	A	**18.**	B		

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