MENDELIAN GENETIC CH. 6.3-6.5

Review Activity

Question 1

- Who is considered to be the “father of genetics”?

Answer 1

- Gregor Mendel

Question 2

- What part of DNA directs a cell to make a certain protein?

Answer 2

- Gene

Question 3

- What was Mendel trying to figure out in his experiments using pea plants?

Answer 3

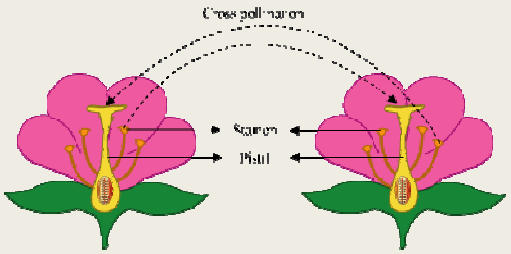
- The inheritance of traits

Question 4

- During Mendel's 1st Experiment, he used 2 purebred parents. Pollen from one plant is used to fertilize another plant, this type of fertilization is called_____?

Answer 4

Cross-Pollination



Question 5

- What do the following letters stand for? They are used in Mendel's experiment.
- P
- F1
- F2

Question 5

- P= Parent Generation
- F1- First generation offsprings
- F2- Second generation offsprings

Question 6

- During Mendel's 1st experiment, he used a monohybrid cross. Explain what that means.

Answer 6

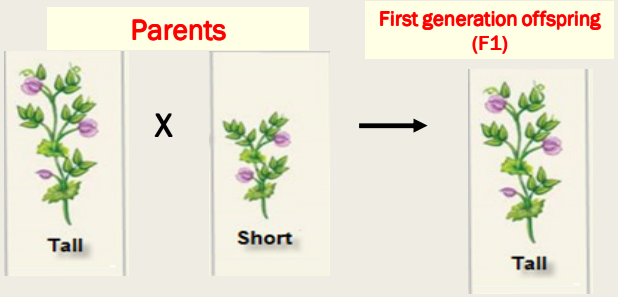
- Crossing one trait at a time

Question 7

- In Mendel's 1st Experiment, what did all the offsprings look like?

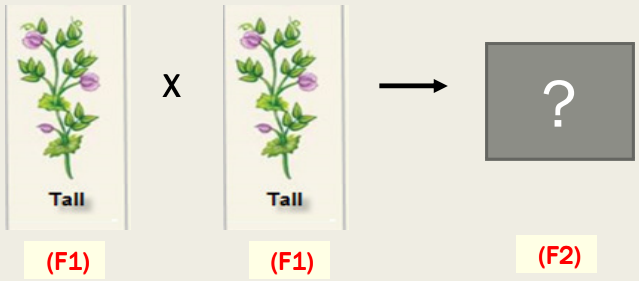
Answer 7

- The alleles for tall were dominant



Question 8

- When F1 offsprings are allowed to self-pollinate, what are the results of the F2 offsprings?



Answer 8

- Some tall, some short

Question 9

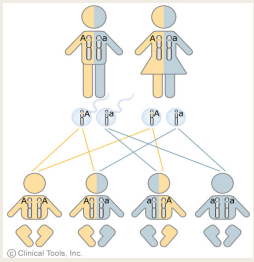
- According to Mendel's results, how are traits inherited?

Answer 9

- Traits are inherited from parents to offsprings

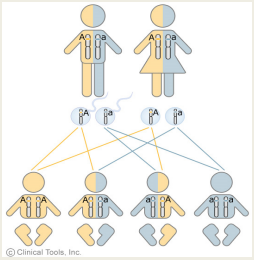
Question 10

- What law states that an organism inherits two copies of a gene, one from each parent?



Answer 10

- Law of Segregation

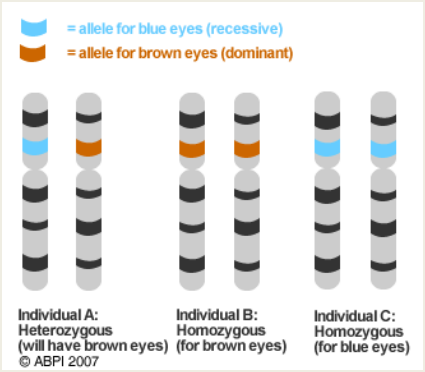


Question 11

- A gene that has different versions are called _____.

Answer 11

- Alleles



Question 12

- The "Principle of Dominance" states some alleles are _____ and some are _____.

Answer 12

- Dominant, recessive

Question 13

- When two alleles are identical for a particular trait, they are said to be _____.

Answer 13

- Homozygous

Question 14

- List all the heterozygous alleles from the list below.

DD	Ff	BB	cc
Ee	QQ	Vv	Gg
gg	Rr	AA	Tt

Answer 14

- Ff
- Ee
- Vv
- Gg
- Rr
- Tt

Question 15

A. The physical appearance of a trait is a _____.
   1. Provide an example

B. The genetic makeup of a trait is a _____.
   1. Provide an example

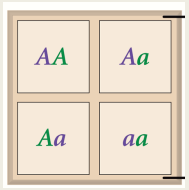
Answer 15

A. Phenotype
   1. Ex: blond hair, green eyes

B. Genotype
   1. Ex: Bb, AA

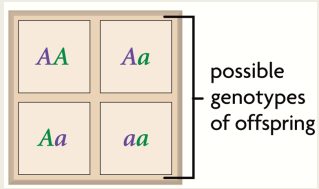
Question 16

- The letters inside a Punnett Square tells you an offsprings _____.



Answer 16

- Genotypes



Question 17

- A homozygous dominant parent is crossed with a homozygous recessive parent. Identify the parent alleles. Use any letter

_____ x _____

Answer 17

A homozygous dominant parent is crossed with a homozygous recessive parent.

- AA x aa

Question 18

- In angel fish, bright colors are dominant to dull colors. Cross a heterozygous bright fish with a homozygous recessive fish? What the are the parent genotypes?
- _____ x _____

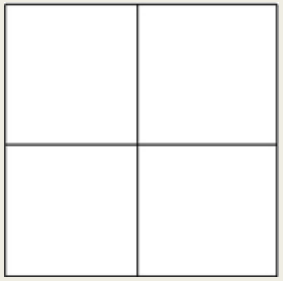
Answer 18

In angel fish, bright colors are dominant to dull colors. Cross a heterozygous bright fish with a homozygous recessive fish? What the are the parent genotypes?

- Bb x bb

Question 19

- In angel fish, bright colors are dominant to dull colors. Cross a heterozygous bright fish with a homozygous recessive fish? What the are the parent genotypes?
- Bb x bb

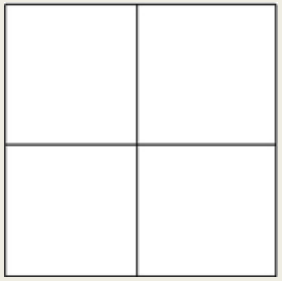


Genotypes: _____

Phenotypes: _____

Answer 19

- Genotypes:0 BB: 2 Bb : 2 bb
- Phenotypes: 2 bright color: 2 dull color



Question 20

- How many traits are involved in a Dihybrid Cross?

Answer 20

- Two traits

Question 21

- Using the alleles below, what is the phenotype of the genotype RRYy?
  - R= round
  - r= wrinkled
  - Y=yellow
  - y= green

Answer 21

- RRYy = round yellow

Question 22

- When crossing two heterozygous parents in a Dihybrid cross RrYy x RrYy, what would be the possible allele pairs that are used in the Punnett square for one parent.

?	?	?	?

Answer 22

RrYy x RrYy

	RY	Ry	rY	ry
RY				
Ry			X	
rY				
ry				

Identify the genotype found the box with the X.

RrYy

Question 23

- What are always the phenotypic ratios when crossing two heterozygous parents in a dihybrid cross?

Answer 23

- 9:3:3:1

Question 24

- What law states that the inheritance of one gene doesn't influence the inheritance of another gene?

Answer 24

- The Law of Independent Assortment

Question 25

- Mendel's principles apply to what types of organisms?

Answer 25

- All organisms that reproduces sexually.. Plants/Animals

Question 26

- Give one reason why Mendel chose to use plants instead of animals for his research?

Answer 26

- Reproduce faster
- More specimens
- Less management
- More traits to manipulate