Name _____ Date _____

Cell Division and Genetics

1.
Black fur is dominant over brown fur in a particular population of guinea pig. The genetic information that gives a guinea pig brown fur is described as having —

A. genes from both parents that are dominant
B. genes from both parents that are recessive
C. one dominant and one recessive gene from each parent
D. one recessive gene from one parent and a dominant gene from the other parent

2.
In a particular species of pea plant, yellow seeds are dominant over green seeds. If a plant has green seeds, it must be —

A. homozygous for green color
B. heterozygous for green color
C. homozygous for yellow color
D. heterozygous for yellow color

3.
In fruit flies, long wings are dominant over short wings. Which of the following must be true about the genetic material of a fruit fly with long wings?

A. It must be homozygous for long wings OR heterozygous for long wings.
B. It must be homozygous for long wings OR homozygous for short wings.
C. It must be heterozygous for long wings OR heterozygous for short wings.
D. It must be heterozygous for short wings OR homozygous for short wings.

4.
Pea pods can be green or yellow. A student crosses two pea plants, each of which has green pea pods. Of the 40 offspring produced, all have green pea pods. The student explains the results by saying that the trait for green pods is dominant. There is scientific evidence that another conclusion could have been made by the student. Using what the student has learned about genetics, there is evidence that both parent plants could also be —

A. pure dominant
B. mutants
C. pure recessive
D. hybrids

5.
A student hypothesizes that green pod color in pea plants is dominant and yellow pod color is recessive. Which observation would disprove this hypothesis?

A. Two plants with green pods produce an offspring with green pods.
B. Two plants with yellow pods produce an offspring with green pods.
C. Two plants with green pods produce an offspring with yellow pods.
D. Two plants with yellow pods produce an offspring with yellow pods.

6.
In a particular species of pea plant, yellow seeds are dominant over green seeds. If a plant has green seeds, it must be —

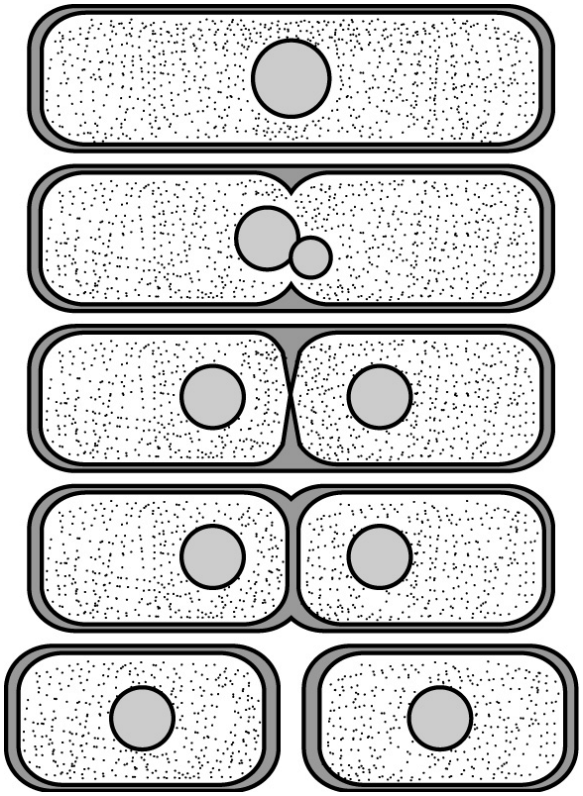
A. homozygous for green color
B. heterozygous for green color
C. homozygous for yellow color
D. heterozygous for yellow color

7.
In one student's family, two of the children have curly hair, one child has wavy hair, and the fourth child has straight hair. Which of these processes is responsible for the variety of hair texture in this family?

A. Binary fission
B. Sexual reproduction
C. Asexual reproduction
D. Vegetative propagation

8.
African violets are plants that can be grown from leaf cuttings. The cuttings form both roots and shoots. How does the genetic material of the offspring of new plants grown from cuttings compare to the genetic material of the parent plant?

A. Equal in amount and identical
B. Less material than the parent plant
C. More material than the parent plant
D. Equal in amount, but with distinct differences

9.


Compared with the genetic material of the original cell in the diagram, each of the two new cells contains —

A. half the genetic material of the parent cell
B. twice as much genetic material as the parent cell
C. genetic material that is identical to the parent cell
D. new genetic material that is different from that of the parent cell

GO ON

10.
A plant breeder is MOST likely to produce offspring with new combinations of traits by —

A. cutting one leaf from a plant and placing the leaf in moist soil
B. exchanging grains of pollen between two different colored roses
C. grafting a branch from an apple tree onto the branch of a pear tree
D. taking the young plants that grow on the runners of a strawberry plant

11.
The table shows three advances in science.

Advance	Description
1	Learning that genes are located on chromosomes
2	Learning that traits can be dominant or recessive
3	Recognizing that DNA has a shape like a twisted ladder

Which of the following lists these advances in the order in which they occurred, from earliest to most recent?

A. 2, 3, 1
B. 1, 3, 2
C. 2, 1, 3
D. 3, 1, 2

12.
In pea plants, tall plants were crossed with short plants, and all of the offspring were tall. The tall parent plants most likely carry —

A. two recessive traits
B. two dominant traits
C. one trait for tallness and one trait for shortness
D. a mutated trait that prevents offspring from being short

13.
Which of these occurs in sexual reproduction but not in asexual reproduction?

A. Genes carry genetic information.
B. An offspring is made of cells.
C. Cells from two organisms combine.
D. An offspring inherits a set of traits.

14.
DNA molecules consist of many sections of —

A. genes.
B. proteins.
C. amino acids.
D. carbohydrates.

15.
Traits such as hair color pass on through the parents' —

A. genes.
B. introns.
C. skin cells.
D. carbohydrates.

16.
Genes carry genetic information that codes for specific —

A. exons.
B. proteins.
C. nucleic acids.
D. carbohydrates.

17.
During animal development, what process creates new cells?

A. Mitosis
B. Meiosis
C. Fertilization
D. Gastrulation

18.
A body cell passes on its DNA by dividing into two identical halves by a process known as —

A. mitosis.
B. meiosis.
C. synthesis.
D. respiration.

19.
After a cut in the skin, what process replaces lost skin cells?

A. Mitosis
B. Meiosis
C. Coagulation
D. Reformation

Answer Key

#	Name	Answer	Align.	Stimulus
1	3135633	B	Grade 7 > 2 > 2b	-
2	3135636	A	Grade 7 > 2 > 2b	-
3	3135638	A	Grade 7 > 2 > 2b	-
4	3182334	C	Grade 7 > 2 > 2b	-
5	3182337	B	Grade 7 > 2 > 2b	-
6	3182351	A	Grade 7 > 2 > 2b	-
7	3182359	B	Grade 7 > 2 > 2b	-
8	3182360	A	Grade 7 > 2 > 2b	-
9	3182361	C	Grade 7 > 2 > 2c	-
10	3182363	B	Grade 7 > 2 > 2b	-
11	3240921	C	Grade 7 > 2 > 2a	-
12	3240943	B	Grade 7 > 2 > 2b	-
13	3240982	C	Grade 7 > 2 > 2b	-
14	SCI72A01	A	Grade 7 > 2 > 2a	-
15	SCI72A02	A	Grade 7 > 2 > 2a	-

#	Name	Answer	Align.	Stimulus
16	SCI72A03	B	Grade 7 > 2 > 2a	-
17	SCI72C01	A	Grade 7 > 2 > 2c	-
18	SCI72C02	A	Grade 7 > 2 > 2c	-
19	SCI72C03	A	Grade 7 > 2 > 2c	-

Checklist List

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)

13)

Student Response Sheet

Name _____ Date _____

Question #	Student Response
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	