

Legend

- **Bold** is answers
- **Yellow Highlighted** is going to be on the test
- **Orange Highlighted** might be on the test

1. The genetic material of all cells is **DNA**
2. A **ratio** compares or shows the relationship between two quantities
3. A **clone** is an organism, cell, or piece of genetic material that is genetically identical to the one from which it was derived
4. **Mitosis** is the process of cell division that results in the formation of cells with half the usual number of chromosomes
5. The type of reproduction that results in offspring that are genetically identical to the single parent is known as **asexual** reproduction
6. A mouse breeder crosses a black-furred mouse with a white-furred mouse. All of the offspring have gray fur. What kind of inheritance pattern explains how fur color is inherited in mice?

Incomplete Dominance

7. What process does a multicellular organism use to replace its damaged body cells?

Mitosis

8. _____
A T C G T -> A T A G T
T A G C A -> T A T C A

Substitution

9. How does a sex cell differ from a body cell?
A sex cell has half the amount of genetic material as a body cell
10. How do the chromosomes at the end of meiosis I compare with the chromosomes at the end of meiosis II

Chromosomes have two chromatids at the end of meiosis I and one chromatid at the end of of meiosis II

11. The following table shows the percentage of each base in a sample of DNA

Base	Percentage of total bases
A	12%
C	38%
T	12%
G	38%

Which of the following statements explains the data in the table?

A pairs only with T, and C pairs only with G

12. Which of the following is an advantage of asexual reproduction?

The organism can increase in number quickly

13. The diagram below shows a cross that is similar to one of Mendel's pea plant crosses.

Ff Blue Flowers		Ff Blue Flowers	
↓			
FF Blue Flowers	Ff Blue Flowers	Ff Blue Flowers	Ff White Flowers

How is blue flower color inherited in the cross shown?

As an dominant trait

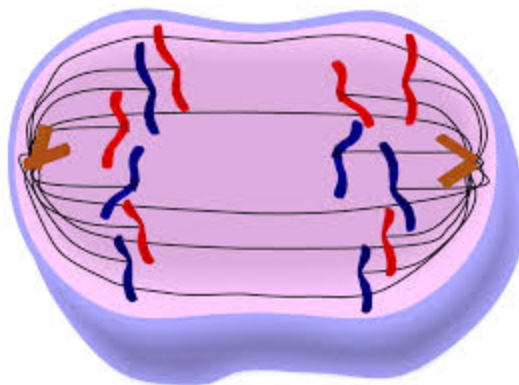
14. Which of the following statements correctly describes the function of cell division in unicellular organisms?

Cell division allows the organism to reproduce

15. Which statement about zygotes, which form by fertilization, is correct?

Zygotes have a full set of chromosomes, receiving half from each parent

16. The diagram shows a cell during the anaphase stage of mitosis



How would this diagram be different if it showed anaphase I of meiosis instead of anaphase of mitosis?

Each chromosome would still have two chromatids

17. If the sequence of bases in one strand of DNA is A T T C G A C, what will be the base sequence of the strand that is formed during replication?

T A A G C T G

18. Describes the major steps of gene transcription and translation. What molecules and organelles are involved in the process?

During transcription, DNA is used as a template to make a complementary strand mRNA. A ribosome attaches to an mRNA strand at the beginning of a gene. A tRNA

molecule enters the ribosome. A ribosome is made up of rRNA. A tRNA molecule enters the ribosome. Three bases on the tRNA match up to the 3 complementary bases on the mRNA. The tRNA then transfers its amino acid to the growing chain of acids. The tRNA is released and the process repeats as the ribosome moves along the mRNA. When the ribosome reaches the end of the mRNA strand, its chain of amino acids is released.

19. Pedigree Diagram:

Straight hair in Jake's family is a recessive allele. There are fewer people in his family that have straight hair than those of curly hair. There is a smaller chance of offspring having straight hair than curly hair. It is not sex-linked because both guys and girls can have straight hair in the family.

20. Biotechnology can cause both negative and positive results. They can make people unable to get cancer and other good stuff like that. But if something goes wrong then the person could possibly die or suffer a lot. Or it could be neutral.