

Name: _____

Pd: _____

Date: _____

It Must Be Genetic Unit Study Guide

- The definition of an environmental trait is:
 - a trait that is only available on Earth Day
 - a trait that is passed down by an organism's biological parents, through DNA
 - a trait that is developed when you are in a forest, or jungle
 - a trait that is developed by an organism's surroundings
- Genetic disorders can be caused by
 - pedigrees
 - DNA mutations or changes in chromosomes
 - Dominant alleles only
 - Environmental factors as well as DNA mutations
- Which genetic disorder causes the body to produce unusually thick mucus in the lungs and intestines?
 - Hemophilia
 - Down Syndrome
 - Cystic Fibrosis
 - Sickle-Cell Disease
- Which of the following best describes the genetic transmittance of disease?
 - Genetic diseases are primarily passed from one person to another like a cold
 - Genetic diseases most often are passed from parents to a child
 - Genetic diseases most often appear in individuals who are heterozygous for a particular allele
 - Genetic diseases are only caused by environmental mutagens
- What are the two main causes of genetic disorders?
 - Mutations and an unhealthy diet
 - Lack of exercise and an unhealthy diet
 - Mutations and changes in chromosomes structure or number
 - Changes in chromosome structure or number and lack of exercise
- Which genetic disorder is caused by an extra copy of the 21st chromosome causing cognitive and developmental delays?
 - Hemophilia
 - Down Syndrome
 - Cystic Fibrosis
 - Sickle Cell Disease
- What genetic disorder results in abnormally shaped blood cells?
 - Hemophilia
 - Down syndrome
 - Cystic fibrosis
 - Sickle-cell disease
- Which of the following is NOT influenced by the environment?
 - Skin cancer
 - Naturally blonde hair
 - Lung cancer
 - Obesity

9. What are the three parts of the cell theory?

10. The basic unit of structure and function of all life is the _____.

11. Multi-cellular organisms are composed of cells that vary in appearance. What is likely reason these cells have different shapes?

12. List, in order from least to most complex, the levels of organization in living things.

_____ -> _____ -> _____ ->
_____ -> _____

13. List 4 influential scientists that contributed to the development of the Cell Theory (include their contributions).

14. In the creation of a baby, each parent contributes _____.

15. Define asexual reproduction.

16. Explain why sexual reproduction produces greater variety in offspring.

17. Define sexual reproduction.

18. Compare & contrast the processes of MITOSIS and MEIOSIS.

19. Explain the difference between the haploid and diploid #'s in humans (when referring to chromosomes).

20. Chromosomes are made up of _____

21. Which chromosomes result in a female human being? _____ male human being?

22. How does a geneticist use a pedigree?

23. A carrier is a person who...

24. Colorblindness is a sex-linked trait on the X chromosome. Who can be affected by colorblindness?

25. What is a sex-linked gene?

26. A man that DOES NOT have hemophilia marries a woman who is a carrier. What is the probability of them having a child with hemophilia? Show the cross.

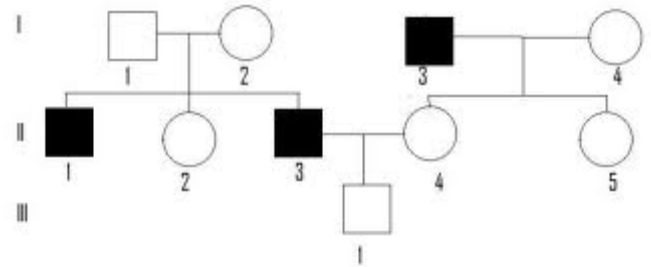
27. Explain the difference between incomplete and codominance.

28. In order for a child to display a recessive trait, what must be true of the parents?

29. What is the possible genotype for individual I-1?

30. What is the possible genotype of individual II-2?

31. What is the possible genotype of individual I-2?



32. Fred the fish has rainbow scales. His mother and father do not have rainbow scales. His 2 fish brothers, Frankie and Ferdinand do not have rainbow scales. His sister Fredina also has the rainbow scale trait. Fred married Francis, who does not have rainbow scales, and they had 2 boys and 1 girl, in which one of their boys and their girl each had rainbow scales.

a. Draw the pedigree for Fred's family AND label the genotypes for each family member.