

Heredity & Genetics Final Exam

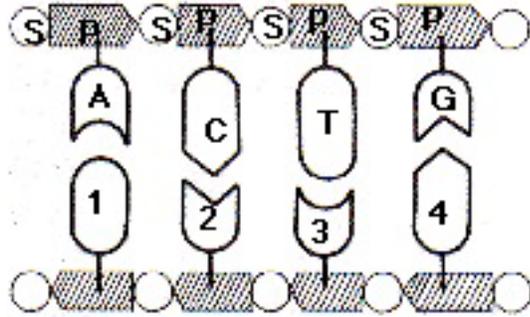


Figure 1:

1. In Figure 1: The letter S represents:
a) salt b) sodium c) sugar d) sulfur e) skittles
2. In Figure 1: The letter P represents:
a) plasma b) potassium c) phosphorus d) phosphate e) pop tarts
3. In Figure 1: The letter A represents:
a) astatine b) adenine c) arsenic d) argon e) astronaut
4. In Figure 1: The letter C represents:
a) crypton b) carbon c) chlorine d) candy e) cytosine
5. In Figure 1: The letter T represents:
a) thymine b) thallium c) tin d) target e) tomyne
6. In Figure 1: The letter G represents:
a) gallium b) guanom c) guanyne d) guanine e) go away
7. In Figure 1: The number 1 represents:
a) adenine b) thymine c) cytosine d) guanine e) all of these
8. In Figure 1: The number 2 represents
a) adenine b) thymine c) cytosine d) guanine e) all of these
9. In Figure 1: The number 3 represents
a) adenine b) thymine c) cytosine d) guanine e) all of these
10. In Figure 1: The number 4 represents
a) adenine b) thymine c) cytosine d) guanine e) all of these

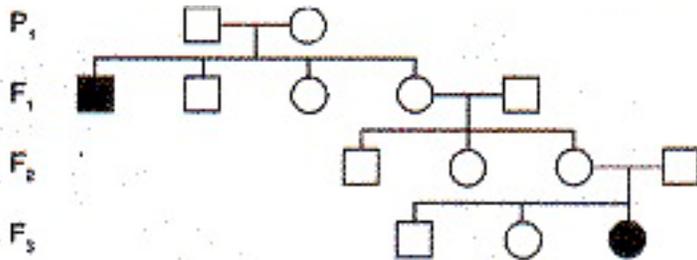


Figure 2:

11. Figure 2 is showing a:

- a) pedigree for a dominant trait
- b) pedigree for a recessive trait
- c) pedigree for no trait
- d) None of these

12. In Figure 2: does the filled in box & circle mean:

- a) these people do not have the trait
- b) these people have the trait
- c) they are the same sex
- d) none of these choices

13. The amount of this base is equal to the amount of adenine in DNA.

- a. cytosine
- b. thymine
- c. nucleotides
- d. double helix
- e. chromosome

14. This is the shape of a DNA molecule.

- a. cytosine
- b. thymine
- c. nucleotides
- d. double helix
- e. chromosome

15. The amount of this base is equal to the amount of guanine in DNA.

- a. cytosine
- b. thymine
- c. nucleotides
- d. double helix
- e. chromosome

16. DNA is the major part of these structures.

- a. cytosine
- b. thymine
- c. nucleotides
- d. double helix
- e. chromosome

17. These form traits. For each trait there must be 2 of these

- a. Genotype
- b. Dominant:
- c. Allele
- d. Recessive:
- e. Phenotype

18. This is the GENETIC alleles of a trait: BB, Bb, bb

- a. Genotype
- b. Dominant:
- c. Allele
- d. Recessive:
- e. Phenotype

19. What the organism looks like. The genetic expression of the genotype. What we see!!

- a. Genotype
- b. Dominant:
- c. Allele
- d. Recessive:
- e. Phenotype

20. The strongest allele/the one expressed, that has the ability to mask another. Always expressed in capital letter: B, R, C, etc

- a. Genotype
- b. Dominant:
- c. Allele
- d. Recessive:
- e. Phenotype

21. An allele that can only be expressed when 2 are together.

Always expressed in lower case letters: b, r, c. It can only be expressed in cases such as: rr, bb, cc.

- a. Genotype
- b. Dominant:
- c. Allele
- d. Recessive:
- e. Phenotype

22. Identical genetic alleles, that express a dominant trait. BB, CC, RR

- a. Punnett Square
- b. Homozygous Dominant
- c. Heterozygous Alleles
- d. Homozygous Recessive

23. Identical genetic alleles, that express a recessive trait. bb, cc, rr

a. Punnett Square b. Homozygous Dominant c. Heterozygous Alleles d. Homozygous Recessive

24. This is a combination of two alleles that are dominant AND recessive. The trait that is expressed is the dominant trait. It MASKS the recessive trait. Bb, Cc, Rr

a. Punnett Square b. Homozygous Dominant c. Heterozygous Alleles d. Homozygous Recessive

25. This is a box method that is used to show the genotypes of combinations:

a. Punnett Square b. Homozygous Dominant c. Heterozygous Alleles d. Homozygous Recessive

26. process of cellular division in which the daughter cells are genetically and morphologically identical to themselves and to the mother cell.

a. nucleus b. meiosis c. chromatid d. mitosis e. daughter cell

27. organelle in the center of the cell which contains the chromosomes.

a. nucleus b. meiosis c. chromatid d. mitosis e. daughter cell

28. one of two cells resulting from the division of a single cell.

a. nucleus b. meiosis c. chromatid d. mitosis e. daughter cell

29. one half of a replicated chromosome which is joined to the other half at the centromere.

a. nucleus b. meiosis c. chromatid d. mitosis e. daughter cell

30. produces sex cells

a. nucleus b. meiosis c. chromatid d. mitosis e. daughter cell

31. Genes are:

a. floating in the cell b. on chromosomes inside the nucleus
c. always perfect d. made up of STA e. something we wear

32. In humans DNA is split into

a. 12 pieces b. 22 pieces c. 34 pieces d. 46 pieces e. 92 pieces

33. Meiosis Makes :

a. nose cells b. daughter cells c. cells with all the chromosomes d. sex cells

34. Sex cells :

a. daughter cells b. go through only 1 division c. are sperm for girls
d. contain 1/2 the number of chromosomes found in body cells e. are eggs for boys

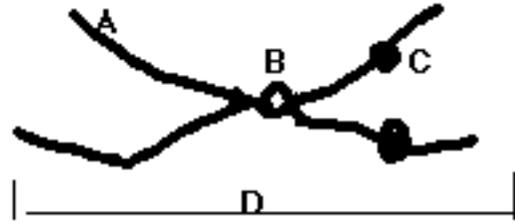
35. Sex linked traits are: _____

a) more common in females b) controlled by genes on the Y chromosome
c) controlled by genes on the X-chromosome d) usually controlled by dominant genes
e) inherited by sons from their fathers

Choices for 36-40:

- a. DNA b. allele c. chromosome
d. chromatid e. centomere

36. Letter A represents: (The "strand" is A)
37. Letter B represents:
38. Letter C represents:
39. This makes up C
40. Letter D represents: (The whole unit is D)



41) Which equation represents two heterozygous parents:

- a) $GG \times Gg$ b) $Gg \times Gg$ c) $gg \times gg$ d) $GG \times gg$ e) $gg \times Gg$

42) Which represents a homozygous recessive parent and a heterozygous parent:

- a) $GG \times Gg$ b) $Gg \times Gg$ c) $gg \times gg$ d) $GG \times gg$ e) $gg \times Gg$

43) Which represents a homozygous recessive parent and a homozygous recessive parent:

- a) $GG \times Gg$ b) $Gg \times Gg$ c) $gg \times gg$ d) $GG \times gg$ e) $gg \times Gg$

44) Which represents a homozygous dominant parent and a homozygous recessive parent:

- a) $GG \times Gg$ b) $Gg \times Gg$ c) $gg \times gg$ d) $GG \times gg$ e) $gg \times Gg$

45) Which equation represents a homozygous dominant parent and a heterozygous parent:

- a) $GG \times Gg$ b) $Gg \times Gg$ c) $gg \times gg$ d) $GG \times gg$ e) $gg \times Gg$

For questions 46-55 use the following percentages as they pertain to the information given:

- a) 0% b) 25% c) 50% d) 75% e) 100%

46) What are the chances of $hh \times HH$ parents having a homozygous recessive offspring: ____

47) What are the chances of $Hh \times Hh$ having a homozygous dominant offspring: ____

48) What percent of $Hh \times hh$ offspring will be heterozygous: ____

49) What percentage of $Rr \times rr$ homozygous recessive: ____

50) What percentage of $Rr \times rr$ homozygous dominant: ____

51) What is the percent of $aa \times aa$ parents having heterozygous offspring: ____

52) What is the percent of $Aa \times Aa$ having heterozygous offspring: ____

53) What is the percent of $Aa \times Aa$ having homozygous recessive offspring: ____

54) What percentage of $Bb \times Bb$ offspring will have a dominant phenotype? ____

55) What percentage of $Bb \times Bb$ offspring will have a recessive phenotype? ____

56. This occurs when both alleles for a trait are equally dominant
 a. codominance b. incomplete dominance c. dihybrid d. polygenic e. none of these
57. An organism that is heterozygous for 2 traits
 a. codominance b. incomplete dominance c. dihybrid d. polygenic e. none of these
58. AB blood is this
 a. codominance b. incomplete dominance c. dihybrid d. polygenic e. none of these
59. Blond hair with blue eyes is this
 a. codominance b. incomplete dominance c. dihybrid d. polygenic e. none of these
60. Red hair or curly/wavy hair is this
 a. codominance b. incomplete dominance c. dihybrid d. polygenic e. none of these
61. A trait produced by several genes or multiple alleles
 a. codominance b. incomplete dominance c. dihybrid d. polygenic e. none of these

Questions 62-70: Identify the following gene mutations or lack of mutation.

Normal is: 123456

Choices: a) deletion b) translocation c) inversion d) duplication e) no mutation

62. 123345
63. 987123
64. 123456
65. 154326
66. 12_456
67. a chromosome mutation in which a section of chromosome is transferred or breaks off and attaches to another chromosome
68. a mutation in which a section of the chromosome is duplicated
69. a chromosome mutation in which a portion of the chromosome is left out or deleted.
70. a mutation in which a section of the chromosome is inverted

71. The Jelly Sandwich Lab was an example of:

- a) hemophilia b) colorblindness c) pedigrees d) gene mutation e) cooking with Gillum

72. In the word "**Mitosis**" the "**t**" stands for:

- a. toe b. tubular c. two d. tomorrow e. tea

73. Genes are found on: a. chromosomes b. alleles c, proteins d. anthers

74. The process that produces sex cells is: a. mitosis b. photosynthesis c. meiosis d. probability