General Biology –Chapter 11Review

Mary Stangler Center for Academic Success

This review is meant to highlight basic concepts from Chapter11. It does not cover all concepts presented by your instructor. Refer back to your notes, unit objectives, labs, handouts, etc. to further prepare for your exam.

1. Briefly explain how the basics of heredity were discovered, who discovered them, and what organism was used.
2. Describe how traits are passed on between parents and offspring.
3. Describe a genotype using the terms homozygous, heterozygous, dominant, and recessive.
4. Briefly explain what a pedigree shows and give a brief description of each of the following types:
   a. Autosomal dominant pedigree
   b. Autosomal recessive pedigree
   c. X-linked pedigree

Matching: Heredity

5. _____passing of traits from parent to offspring
6. _____characteristic of an organism
7. _____section of DNA at a specific location on a specific chromosome that holds information for a trait
8. _____alternate state of a gene, provides different variations of the same trait
9. _____having identical alleles
10. _____having different alleles
11. _____total set of alleles for a trait, the letters
12. _____physical description or appearance of a trait
13. _____crossing of 1 trait
14. _____crossing of 2 traits
15. _____diagrammatic method used to predict genotypes and phenotypes of genetic crosses
16. _____trait seen in F1 generation, the trait is expressed when present in either the heterozygous or homozygous condition
17. _____trait not seen in F1 generation, the trait that is hidden when combined with a dominant allele, it is only expressed in the homozygous condition
18. _____traits are not completely dominant, traits are an intermediate, red x white = pink
19. _____multiple genes control the phenotype of a trait, skin color and height are examples, the traits seen are of a range of phenotypic values rather than discrete either/or values
20. _____a single gene has more than one effect on a phenotype, albinism – if gene is present, the skin, hair, eyes, etc. are all affected
21. _____the heterozygote expresses both alleles of a gene equally, an example is the AB blood type

    a. Allele
    b. codominance
    c. Dihybrid cross
    d. Dominant
    e. Gene
    f. Genotype
    g. Heredity
    h. Heterozygous
    i. Homozygous
    j. Incomplete dominance
    k. Monohybrid cross
    l. Phenotype
    m. Pleiotropy
    n. Polygenic inheritance
    o. Punnett square
    p. Recessive
    q. Trait

Fill in the blank/True or False: Heredity (if false, what makes the statement true?):

22. Using classic Mendelian genetics - The monohybrid cross of the F_1 generation would yield F_2 offspring in the following ratio: 50% yellow seeds and 50% green seeds. Dominant trait = yellow seeds (Y), recessive trait = green seeds (y). True or False?
23. The recessive genotype for the above pea plant would be expressed as yy. True or False?
24. The dominant genotype for the above pea plant would be expressed as either YY or Yy. True or False?
25. Using classic Mendelian genetics - The dihybrid cross of the F_1 generation would yield F_2 offspring in the following standard ratio:_____.
26. A homozygous dominant individual is crossed with a heterozygous individual, the offspring are as follows: 50% dominant phenotype, 50% recessive phenotype. True or False?
27. Autosomal pedigrees show a condition carried on the X-Chromosome. True or False?
28. Blood type is an example of _____ because both type A ($I^{A)}$ and B (I^{B}) are fully expressed in the presence of the other..
29. An example of _____ is when a long stemmed flower is crossed with a short stemmed flower to produce a medium length stemmed flower.
30. Marfan Syndrome and Sickle-Cell Disease are example s of _____ in which a single mutant gene affects many unrelated traits.
31. Height is an example of _____ because it is controlled by 2 or more sets of alleles.
32. X-linked recessive traits appear in males and females at a similar rate. True or False?
33. An X-linked condition cannot have a male as a carrier. True or False?