

Semester 2 Final Study Guide

NOTE: Be able to read and analyze data tables and graphs. This is an important skill that is part of many of the questions!

Genetics

1. Perform monohybrid genetics crosses including:
 - a. Simple Dominant and Recessive
 - b. Blood Typing
 - c. Sex-linked
 - d. Codominance and Incomplete Dominance
2. Read and analyze pedigrees.
3. Distinguish genotype and phenotype.
4. Distinguish homozygous and heterozygous.
5. Distinguish dominant and recessive alleles.
6. Describe the following terms and concepts: meiosis, haploid, diploid.
7. Be able to identify polygenic traits based on data.
8. Know what P, F1, and F2 are in relation to monohybrid cross.

DNA, RNA, and Protein Synthesis

9. What is the definition of DNA replication?
10. Which RNA molecule carries the genetic code to make proteins?
11. Proteins are made due to the sequence of _____ in a DNA molecule.
12. Who/what determines the sequence of mRNA?
13. Genes code for _____.
14. What is the definition of Transcription? Where does it occur?
15. What is the definition of Translation? Where does it occur?
16. Know how to read a codon chart. for example - What amino acid codes for AGC?
17. What is one of the codon sequences for Leucine? Is there more than one?
18. Draw the structure of DNA. Circle 1 nucleotide.
19. Which bases go together with DNA?
20. Where in the cell does DNA get transcribed to mRNA?
21. What organic molecule are DNA and RNA examples of?
22. What makes proteins different from one another?
23. What makes a liver cell different from a skin cell? (hint: think gene expression)

Evolution

24. Define evolution.
25. Genetic differences between individuals within a population are known as _____.
26. Evolution would increase if the population was _____ and the mutation rate was _____.
27. What is natural selection. Give 1 example.

28. How does antibiotic resistance show natural selection?
29. Draw and define the 3 types of Natural Selection.
30. Know how to determine how closely related two species are.

Body Systems

31. Be able to analyze data to determine how various body systems maintain homeostasis and help you survive.