Study Guide for Module #7

1. A. Genetics - The science that studies how characteristics get passed from parent to offspring.

B. Genetic Factors - The general guideline of traits determined by a persons DNA.

C. Enviromental Factors - Those "nonbiological" factors that are involved in a person's surroundings such as the nature of the person's parents, the person's friends, and the persons behavioral choices.

D. Spiritual Factors - The factors in a person's life that are determined by the quality of his or her relationship with God.

E. Gene - A section of DNA that codes for the production of a protein or a portion of protein, thereby causing a trait.

F. ~~Messag~~ messenger RNA - The RNA that performs transcription.

G. Anticodon - A three-nucleotide base sequence on tRNA.

H. Codon - A sequence of three nucleotide bases on mRNA that refers to a specific amino acid.

I. Chromosome - DNA coiled around and supported by proteins, found in the nucleus of a cell.

J. mitosis - A process of asexual reproduction in eukaryotic cells.

K. Interphase - The time interval between cellular reproduction.

L. Centromere - The region that joins two sister chromatids.

M. mother cell- A cell ready to begin reproduction, containing duplicated DNA centrioles.

N. Karyotype - The figure produced when the chromsomes of a species during metaphase are arranged according to their homologous pairs.

O. Diploid Cell- A cell with chromosomes that come in homologous pairs.

P. Haploid cell - A cell that has only one representative of each chromosome pair.

Q. Diploid Number - (2N) The number of Chromosomes in a diploid cell.

R. Haploid Number - (N) The number of homologus pairs in a diploid cell.

S. Meiosis - The process by which a diploid cell forms gametes.

T. Gametes - Haploid cells produced by diploid cells for the purpose of sexual reproduction.

U. Virus - A non-cellular infectious agent that has two characteristics...
(1) It has genetic material (RNA or DNA) inside a protective protein coat.
(2) It cannot reproduce on its own.

V. Antibodies - Specialized proteins that aid in destroying infectious agents.

W. Vaccine - A weakened or inactive version of a pathogen that stimulates the body's production of antibodies which can aid in destroying the pathogen.

2. A DNA strand has the following sequence of nucleotides:
guanine, cytosine, adenine, adenine, thymine, guanine

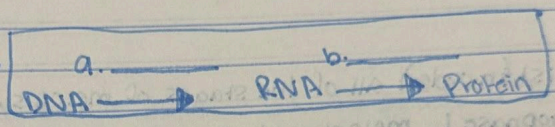
a. What will the mRNA sequence be?
Cytosine, guanine, uracil, uracil, adenine, cytosine

b. How many amino acids will the mRNA code for? • 3

c. How many codons will the mRNA have? • 18

d. What are the anticodons on the tRNAs that will bond to the mRNAs?
• IdK?

3. Fill in the blanks:



a) transcription. b) translation

4. An RNA strand has an anticodon. Is it tRNA or mRNA?
tRNA.

5. Protein synthesis is occurring in a ribosome. Is this a part of transcription or translation? • translation

6. ... would that mean that murders are not a fault for what they do? Why or why not? its is their fault that they murder but it is not their fault that th have the urge to. This because of genetic factors.

7. If you looks under a microscope and see distinct chromosomes in a cell, is the cell in interphase? Why or why not? • yes. Because if they wer not then they would be splitting.

8. List (in order) the four stages of mitosis.
Prophase, metaphase, anaphase, telophase.

9. Identify the stage of mitosis for each of the following pictures:
a.) telophase b.) prophase c.) metaphase d.) anaphase

10. The diploid number of a cell is 16. What is its haploid number?
• 8

11. The haploid number of a cell is 9. What is its diploid number?
• 18

12. What is the difference between a gamete and a regular animal cell?

13. List (in order) all of the stages of meiosis.
Prophase I, metaphase I, anaphase I, telophase I, Prophase II, metaphase II, anaphase II, telophase II.

14. Which is closer to mitosis: meiosis I or meiosis II?

15. A single cell with seven pairs of homologous chromosomes goes through meiosis I. How many cells result at the end of meiosis I? How many chromosomes exist in each cell? Are the chromosomes in each cell duplicated or not? • 1) 28 2) 4 3) yes.

16. Four cells that originally (prior to meiosis I) had seven pairs of homologous chromosomes go through meiosis II. How many cells result? How many (total) chromosomes exist in each cell? Are the chromosomes in each cell duplicated or not? • 28 • 28 • not

17. What are gametes produced in the male animals called? What are gametes produced in female animals called? • sperm • eggs

18. How many useful gametes are produced in the meiosis of male animals? What about female animals? • male = 4 • female = 1

19. What is the difference between a polar body and an egg?
• eggs are fertile and larger, Polar bodies are neither of these.

20. Which gamete can move on its own: the male gamete or the female gamete?
• male gamete

21. What is the purpose of the lytic pathway?
• viruses move through this.

22. If a virus uses DNA as its genetic material, is it alive? Why or Why not?
• Virus are not alive so no

23. A person decides to wait until he contracts measles before getting the vacine. What is wrong with this strategy? • virus doesn't have enough time to heal it.