Biology 1: CHAPTER 8 TEST REVIEW SHEET

Please answer all of the following questions in complete sentences. Refer to sections 8.2, 8.3, 8.4, 8.5, 8.7 the text book and chapter 8 assignments.

1. What three parts make-up a DNA nucleotide?

   phosphate group, sugar, nitrogen containing base

2. What are the four nitrogen bases found in DNA?

   Adenine Cytosine
   Guanine Thyamine

3. Describe what DNA looks like. What holds the base pairs together? What is the name of the twisted ladder shape of a DNA molecule? Double Helix Hydrogen Bonds

   Two stranded twisted ladder

4. What are the 2 mechanisms that pass on copies of DNA?

   replication, mitosis

5. What is the main job of replication?

   Copy DNA

6. In DNA, what nitrogen base does each pair with?

   A-T
   C-G

7. What is the first step of DNA replication? What happens next? What helps to reform the bond between nev nucleotides? 2 sides are unzipped Free nucleotides pair with exposed bases

   DNA polymerase

8. What occurs directly after a DNA molecule is "unzipped"?

   Free nucleotides pair with exposed bases

9. What is the complimentary DNA strand to the base sequence: TGGCATT

   ACCGTAA

10. What is the nucleotide sequence of the RNA strand that would be complimentary to the DNA strand:

    CATCAGT

    GUAGUCA

11. What is the name for the three-nucleotide sequence that codes for an amino acid?

Codon

12. What are proteins made of?

amino acids

13. Which code is used for the synthesis of proteins?

mRNA

14. How many amino acids are used in living things?

20

15. Where are in the cell are proteins made? Where in the cell is DNA found?

Cytoplasm nucleus

16. What are three ways that RNA structure is different from DNA?

Single strand Double strand
Uracil Thyamine
Ribose sugar Deoxyribose sugar

17. What is the main job of transcription?

making RNA

18. What is the main job of translation?

making proteins

19. What is a gene (DNA) mutation?

a change in the DNA

20. In what types of cells do mutations occur if they are passed on to offspring?

Sex cells

21. What is a point mutation?

one base is substituted for another

22. What would happen if a single base were to get lost from a DNA strand? What would happen to every codc after that? What kind of mutation is that? Frameshift mutation

It would change all the codons after the mutation

23. What are ~~four~~ 2 environmental factors that can cause mutations?

UV rays (sunlight)
Chemicals

24. What did Watson and Crick discover about DNA?

It's structure (double helix)

25. Why is the process of making DNA semiconservative?

One new strand is paired with one old strand

26. What would the complimentary DNA sequence be for the strand: GCT ACT CCG

CGA TGA GGC

27. What would the complimentary RNA sequence be for the strand: ACT GTA CGA

UGA CAU GCU

28. What is the main function of tRNA?

to bring amino acids to the ribosomes

29. What is a codon?

3 base code that tells the order of amino acids

30. Which type of mutation has no effect on phenotype?

point mutation

31. In which type of cells do mutations occur that can affect offspring?

sex cells

32. How do the four DNA nucleotides differ from each other?

2 are double rings, 2 are single rings

33. What "message" does mRNA carry?

the recipe from the DNA to make proteins

34. What are the base-pairing rules?

A pairs with T C pairs with G

35. What are RNA's four nitrogen bases?

Adenine Cytosine
Guanine Uracil