Independent Practice: The Structure and Function of DNA

Fill in the blanks and answer the following questions about DNA using your notes.

1. DNA stands for __D_____ __N_____ __A_____.

2. What do you call the shape of a DNA molecule? _____

3. Label the three parts of the DNA nucleotide shown to the right:

    A: _____

    B: _____

    C: _____
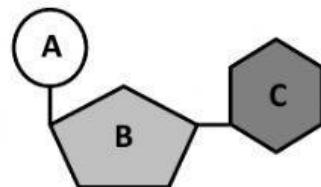
4. Label the nitrogen bases found in DNA nucleotides.

A   T   G   C

_____   _____   _____   _____
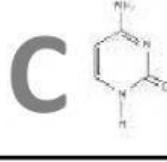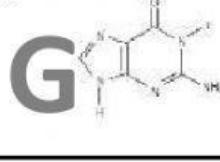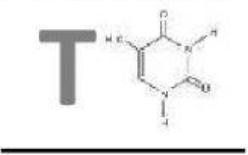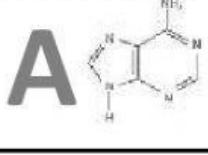
7. Inside the cell, DNA is packaged into very large structures known as –
A chromosomes   **B** lysosomes   **C** enzymes   **D** peroxisomes

8. DNA contains the instructions for making what other biomolecule?
A lipids   **B** carbohydrates   **C** polysaccharides   **D** proteins

9. How is this *information* carried within the DNA?
A Along the sugar-phosphate backbone   **C** By the arrangement of the sugars
B Between the peptide bonds   **D** In the sequence of nitrogen bases

10. While DNA is found in all cells, in eukaryotic cells the DNA is found inside of the –
A mitochondrion   **B** vacuole   **C** nucleus   **D** Golgi body

11. The information in DNA is written according to the genetic code. The genetic code is used to translate the information in DNA into a specific protein. The genetic code is –
A unique to each individual species   **C** unique to each family of organisms
B the same for all living things   **D** different for every single living thing

12. The genetic code is used for translating the information from DNA into a protein. This means that the sequences of nitrogen bases are coding for –

A fatty acids   **B** monosaccharides   **C** disaccharides   **D** amino acids

13. Most scientists believe that the genetic code provides evidence that all organisms are related. This is primarily because –

A all living things use the same basic code   **C** some species use similar codes
B each species code is a little different   **D** every species has some form of code

14. Practice your base pairing by completing the strands of DNA below.

| A | T | G | A | C | G | C | G | A | G | A | T | C | G | A | G | T |

| A | G | G | T | A | C | G | A | C | G | T | C | T | A | G | C | A |
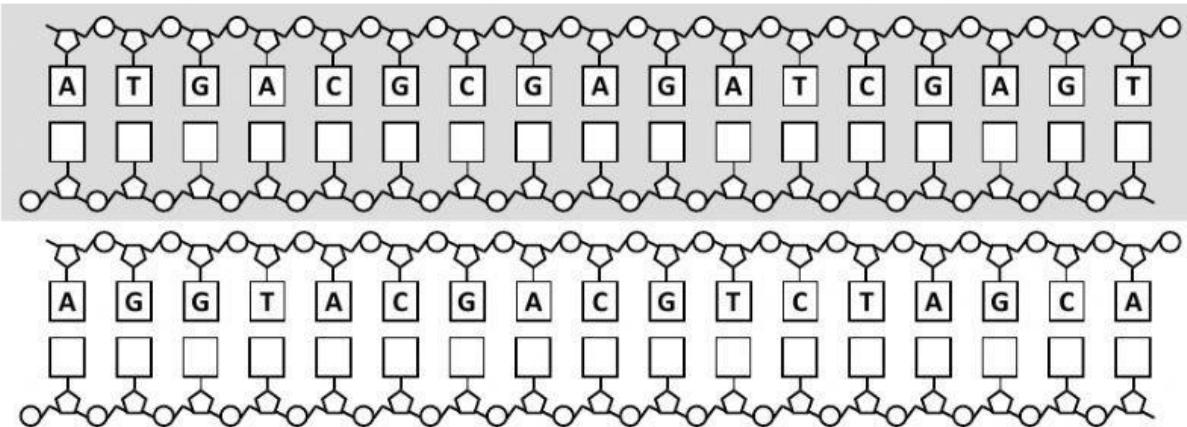
15. Write out the complimentary strands of DNA for the sequences below.

⁵'G T A C T G A C C³'   ⁵'A C T T A G G C A³'   ⁵'G T C C A T T G A³'

_____   _____   _____