

1. The basic unit of the DNA molecule is

- (1) **a nucleotide**                      (2) an amino acid                      (3) a phosphate group                      (4) a nitrogen base

2. The coded information of a DNA molecule is determined by the

- (1) sequence of amino acids                      (3) **sequence of the nitrogenous bases**  
(2) number of ribose units                      (4) sequence of the sugar-phosphate units

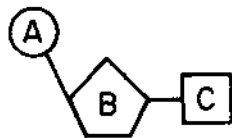
3. Which is the sugar component of a DNA nucleotide?

- (1) adenine                      (2) **deoxyribose**                      (3) glucose                      (4) phosphate

4. Which substances are components of a DNA nucleotide?

- (1) phosphate, deoxyribose, and uracil                      (3) **thymine, deoxyribose, and phosphate**  
(2) phosphate, ribose, and adenine                      (4) ribose, phosphate, and uracil

5. Which is the correct identification of the parts of the DNA nucleotide in the diagram below?



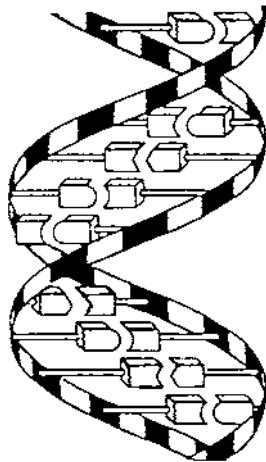
(1) *A* = uracil, *B* = deoxyribose, *C* = thymine

(2) *A* = phosphate, *B* = ribose, *C* = uracil

(3) *A* = thymine, *B* = ribose, *C* = uracil

(4) *A* = **phosphate**, *B* = **deoxyribose**, *C* = **thymine**

6.



In the diagram of a polymer above, the repeating subunits are known as

- (1) amino acids                      (2) polysaccharides                      (3) **nucleotides**                      (4) fatty acids

7. Which pair of molecules, when bonded together, would most likely be found in a nucleotide of DNA?

- (1) ribose and adenine                      (3) **deoxyribose and guanine**  
(2) ribose and thymine                      (4) deoxyribose and uracil

8. In nucleotides, the letters *A*, *G*, *C*, and *T* represent

- (1) phosphate groups                      (2) deoxyribose sugars                      (3) **nitrogenous bases**                      (4) ribose sugars

9. Which diagram best represents a basic structural unit of DNA?

Key

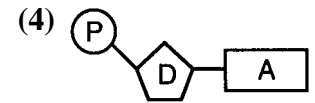
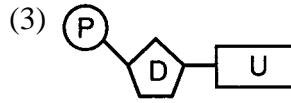
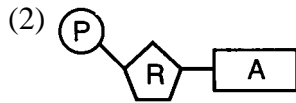
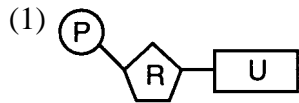
P = Phosphate

D = Deoxyribose sugar

R = Ribose sugar

U = Uracil

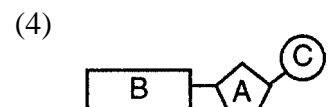
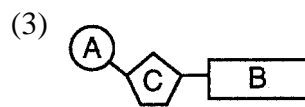
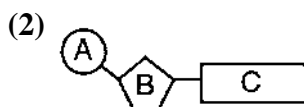
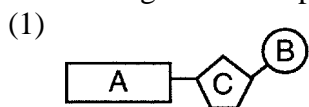
A = Adenine



10. The parts of a DNA nucleotide are indicated in the chart below by letters A, B, and C, An X indicates which chemical elements are present in each part.

DNA Nucleotide Parts	Elements				
	C	O	H	N	P
A		X	X		X
B	X	X	X		
C	X	X	X	X	

Which diagram best represents a DNA nucleotide.



11. When bonded together chemically, deoxyribose, phosphate, and an adenine molecule make up

- (1) **a DNA nucleotide**      (2) an RNA nucleotide      (3) a DNA molecule      (4) an RNA molecule

12. In addition to a phosphate group, a DNA nucleotide could contain

- (1) **thymine and deoxyribose**      (3) thymine and ribose  
 (2) uracil and deoxyribose      (4) uracil and ribose

13. Which molecule is correctly paired with its building blocks?

- (1) cellulose – polypeptides      (3) protein – monosaccharides  
 (2) **DNA – nucleotides**      (4) fat – disaccharides

14. The specificity of genetic material is the result of the

- (1) type of sugar present in DNA      (3) **order of the nitrogen bases in DNA**  
 (2) type of phosphate found in a cell      (4) order of the amino acids in a protein

15. During the replication of a DNA molecule, separation or "unzipping" of the DNA molecule will normally occur when hydrogen bonds are broken between

- (1) thymine and thymine      (2) guanine and uracil      (3) adenine and cytosine      (4) **cytosine and guanine**