

1.1 Assessment

Match each term on the left with the best descriptor on the right. Each descriptor may be used only once.

1. ____ nucleotide	A. building block of a nucleic acid
2. ____ nucleic acid	B. adenine and thymine always pair together
3. ____ nitrogenous base	C. large molecules made up of repeating units of nucleotides
4. ____ complementary bases	D. component that makes up the steps of the DNA molecule

Circle the letter of the best answer for questions 5 to 24.

5. Which of the following describes DNA?

- A. It is a single-stranded protein.
- B. It is a single-stranded chromatin.
- C. It is a double-stranded nucleotide.
- D. It is a double-stranded nucleic acid.

6. Which of the following correctly identifies DNA and RNA?

A.	deoxygenome	ribogenome
B.	deoxyamino acid	riboamino acid
C.	deoxyribonucleotide	riboamino acid
D.	deoxyribonucleic acid	ribonucleic acid

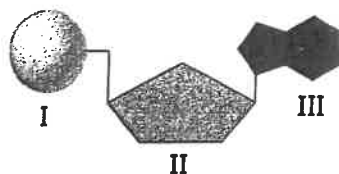
7. Which of the following are the basic building blocks of DNA and RNA?

- A. nucleotides
- B. amino acids
- C. nucleic acids
- D. chromosomes

8. Which of the following are the nitrogenous bases in DNA?

- A. adenine, uracil, cytosine, and guanine
- B. cytosine, adenine, uracil, and thymine
- C. guanine, cytosine, uracil, and thymine
- D. adenine, thymine, cytosine, and guanine

Use the following diagram to answer questions 9 to 11.



9. Which of the following identifies Structure II in the molecule shown in the diagram?
- A. sugar
 - B. amino acid
 - C. phosphate group
 - D. nitrogenous base
10. Which components make up the sides of the DNA molecule?
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II, and III
11. Which component of the molecule takes part in complementary base pairing?
- A. Structure I
 - B. Structure II
 - C. Structure III
 - D. Structure I and Structure II
12. Which of the following describes how DNA and RNA are similar?

I	They have genes.
II	They are nucleic acids.
III	They have sub-units composed of a sugar, a phosphate group, and a nitrogenous base.

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

13. Which of the following are examples of complementary bases?
- A. cytosine and guanine
 - B. guanine and thymine
 - C. thymine and cytosine
 - D. cytosine and adenine
14. Guanine and cytosine are held together by what type of bonds?
- A. ionic bonds
 - B. peptide bonds
 - C. covalent bonds
 - D. hydrogen bonds
15. If the sequence of bases in one strand of a DNA molecule is T-A-G-T-C-A, what is the sequence of complementary bases in the other strand of DNA?
- A. A-C-T-G-A-T
 - B. A-T-C-A-G-T
 - C. A-U-C-A-G-U
 - D. T-A-G-T-C-A
16. Organisms inherit their genetic information from their
- A. ribonucleic acid.
 - B. mitotic parents.
 - C. biological parents.
 - D. biological siblings.
17. Where is the genetic information stored in DNA?
- A. in the centromere of the chromosome
 - B. in the sequence of nitrogenous bases
 - C. in the bonds that hold the nitrogenous bases together
 - D. in the sequence of alternating sugar and phosphate backbone

18. Which of the following correctly identifies the form in which DNA exists during different parts of the cell cycle?

A.	chromatin	chromatin
B.	chromosome	chromosome
C.	chromatin	chromosome
D.	chromosome	chromatin

19. How many pairs of chromosomes are in a human's somatic (body) cells?

- A. 1 pair
- B. 22 pairs
- C. 23 pairs
- D. 46 pairs

20. In a genetic male, what are the X and Y chromosomes known as?

- A. the alleles
- B. the gametes
- C. the autosomes
- D. the sex chromosomes

21. What are the sections of DNA that provide instructions for an amino acid sequence called?

- A. genes
- B. alleles
- C. centromeres
- D. homologous chromosomes

22. How are the chromosomes arranged in a karyotype?

- A. in order of length from shortest to longest
- B. in order of length from longest to shortest
- C. in order of the number of genes that they carry
- D. in order of the number of bands that are displayed

23. What process makes a duplicate copy of DNA during interphase?

- A. replication
- B. translation
- C. transcription
- D. sexual reproduction

24. The variety and abundance of salamanders in a forest is an example of

- A. a population.
- B. genetic diversity.
- C. species diversity.
- D. ecosystem diversity.

25. Complete the following Frayer model diagram for nucleic acid.

