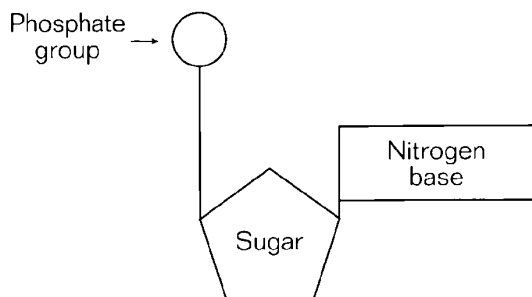


Chapter 9 DNA: The Genetic Material

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ___ 1. The scientists credited with establishing the structure of DNA are
- Avery and Chargaff.
 - Hershey and Chase.
 - Mendel and Griffith.
 - Watson and Crick.
- ___ 2. Using radioactive tracers to determine the interactions of bacteriophages and their host bacteria, Hershey and Chase demonstrated without question that
- genes are composed of protein molecules.
 - DNA and proteins are actually the same molecules located in different parts of cells.
 - bacteria inject their DNA into the cytoplasm of bacteriophages.
 - DNA is the molecule that stores genetic information in cells.
- ___ 3. Which of the following is *not* part of a molecule of DNA?
- deoxyribose
 - nitrogen base
 - phosphate
 - ribose
- ___ 4. A nucleotide consists of
- a sugar, a protein, and adenine.
 - a sugar, an amino acid, and starch.
 - a sugar, a phosphate group, and a nitrogen base.
 - a starch, a phosphate group, and a nitrogen base.
- ___ 5. What is responsible for adding nucleotides to the exposed DNA template bases?
- replicases.
 - enzymes
 - helicases.
 - None of the above
- ___ 6. The part of the molecule for which deoxyribonucleic acid is named is the
- phosphate group.
 - sugar.
 - nitrogen base.
 - None of the above
- ___ 7. Avery and his research team concluded that
- RNA was the genetic material.
 - protein bases were the genetic material.
 - DNA and RNA were found in the human nucleus.
 - DNA was the genetic material.
- ___ 8. During DNA replication, a complementary strand of DNA is made for each original DNA strand. Thus, if a portion of the original strand is CCTAGCT, then the new strand will be
- TTGCATG.
 - AAGTATC.
 - CCTAGCT.
 - GGATCGA.



- ___ 9. Referring to the above Diagram: What group of nucleotides does the above base belong to?
- Purines
 - Urines
 - Pyrimidines
 - Nucleotides
- ___ 10. Griffith's experiments showed that
- dead bacteria could be brought back to life.
 - harmful bacteria were hardier than harmless bacteria.
 - heat caused the harmful and harmless varieties of bacteria to fuse.
 - genetic material could be transferred between dead bacteria and living bacteria.
- ___ 11. adenine : thymine
- protein : DNA
 - Watson : Crick
 - guanine : cytosine
 - adenine : DNA
- ___ 12. Watson and Crick built models that demonstrated that
- DNA and RNA have the same structure.
 - DNA is made of two strands that twist into a double helix.
 - guanine forms hydrogen bonds with adenine.
 - thymine forms hydrogen bonds with cytosine.
- ___ 13. Of the four nitrogen bases in DNA, which two are purines and which two are pyrimidines?
- adenine—thymine; uracil—cytosine
 - adenine—thymine; guanine—cytosine
 - adenine—guanine; thymine—cytosine
 - uracil—thymine; guanine—cytosine
- ___ 14. If a Nucleotide sequence is TGCGGATC then what is the complementary strand to it?
- GGCATCGC
 - ACGCCTAG
 - AATTTGGC
 - TGCCATCG
- ___ 15. Avery's experiments showed that transformation
- is prevented by protein-destroying enzymes.
 - is prevented by DNA-destroying enzymes.
 - causes protein to become DNA.
 - is caused by a protein.
- ___ 16. A vaccine is
- a substance that kills bacteria or viruses.
 - an antibody.
 - a plasmid that contains disease-causing genes.
 - a harmless version of a disease-causing microbe.
- ___ 17. Molecules of DNA are composed of long chains of
- amino acids.
 - fatty acids.
 - monosaccharides.
 - nucleotides.
- ___ 18. What base always pairs with Thymine
- Cytosine
 - Uricine
 - Guanine
 - Adenine
- ___ 19. Griffith's transformation experiments
- changed proteins into DNA.
 - caused harmless bacteria to become deadly.
 - resulted in DNA molecules becoming proteins.
 - were designed to show the effect of heat on bacteria.
- ___ 20. The amount of guanine in an organism always equals the amount of
- protein.
 - thymine.
 - adenine.
 - cytosine.

Chapter 9 DNA: The Genetic Material

Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: I OBJ: 9.2.3
STA: Bio 3F
2. ANS: D PTS: 1 DIF: II OBJ: 9.1.3
STA: Bio 3F
3. ANS: D PTS: 1 DIF: I OBJ: 9.2.1
STA: TAKS 2 Bio 6A
4. ANS: C PTS: 1 DIF: I OBJ: 9.2.1
STA: TAKS 2 Bio 6A
5. ANS: B PTS: 1 DIF: I OBJ: 9.3.1
STA: TAKS 2 Bio 6B (11th)
6. ANS: B PTS: 1 DIF: I OBJ: 9.2.1
STA: TAKS 2 Bio 6A
7. ANS: D PTS: 1 DIF: I OBJ: 9.1.2
STA: Bio 3F
8. ANS: D PTS: 1 DIF: III OBJ: 9.2.4
STA: TAKS 2 Bio 6A
9. ANS: C PTS: 1
10. ANS: D PTS: 1 DIF: I OBJ: 9.1.1
STA: TAKS 1 Bio/IPC 2C | Bio 3F
11. ANS: C PTS: 1 DIF: III OBJ: 9.2.4
STA: TAKS 2 Bio 6A
12. ANS: B PTS: 1 DIF: II OBJ: 9.2.3
STA: Bio 3F
13. ANS: B PTS: 1 DIF: II OBJ: 9.2.1
STA: TAKS 2 Bio 6A
14. ANS: B PTS: 1
15. ANS: B PTS: 1 DIF: I OBJ: 9.1.2
STA: Bio 3F
16. ANS: D PTS: 1 DIF: I OBJ: 9.1.1
STA: TAKS 1 Bio/IPC 2C | Bio 3F
17. ANS: D PTS: 1 DIF: I OBJ: 9.2.1
STA: TAKS 2 Bio 6A
18. ANS: D PTS: 1
19. ANS: B PTS: 1 DIF: I OBJ: 9.1.1
STA: TAKS 1 Bio/IPC 2C | Bio 3F
20. ANS: D PTS: 1 DIF: I OBJ: 9.2.4
STA: TAKS 2 Bio 6A