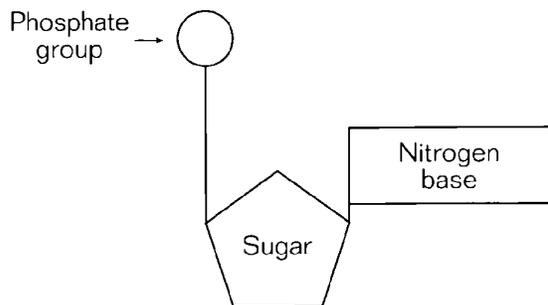


True/False

Indicate whether the sentence or statement is true(a) or false(b).

- _____ 1. It has been discovered that proteins are the genetic material, rather than DNA, because proteins are more complex than DNA.
- _____ 2. Bacteriophage are a type of bacteria that infects viruses.
- _____ 3. The five-carbon sugar in DNA nucleotides is called deoxyribose.
- _____ 4. The strands of a DNA molecule are held together by hydrogen bonding between adenine with guanine molecules and cytosine with thymine molecules.
- _____ 5. Typically, before proofreading replication only one error occurs for every 10,000 nucleotides.
- _____ 6. Errors in nucleotide sequencing that occur during replication cannot be corrected.
- _____ 7. Griffith's transformation experiments
 - a. changed proteins into DNA.
 - b. caused non-harmful bacteria to become deadly.
 - c. resulted in DNA molecules becoming proteins.
 - d. were designed to show the effect of heat on bacteria.
- _____ 8. Griffith's experiments showed that
 - a. dead bacteria could be brought back to life.
 - b. harmful bacteria were hardier than harmless bacteria.
 - c. heat caused the harmful and harmless varieties of bacteria to fuse.
 - d. genetic material could be transferred between dead bacteria and living bacteria.

- ___ 9. 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.
- ___ 10. Molecules of DNA are composed of long chains of
- amino acids.
 - fatty acids.
 - monosaccharides.
 - nucleotides.
- ___ 11. Which of the following is *not* part of a molecule of DNA?
- deoxyribose
 - nitrogen base
 - phosphate
 - ribose
- ___ 12. 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.
- ___ 13. The part of the molecule for which deoxyribonucleic acid is named is the
- phosphate group.
 - sugar.
 - nitrogen base.
 - None of the above



- ___ 14. The entire molecule shown in the diagram is called a(n)
- a. amino acid.
 - b. nucleotide.
 - c. polysaccharide.
 - d. pyrimidine.
- ___ 15. Of the four nitrogen bases in DNA, which two are purines and which two are pyrimidines?
- a. adenine—thymine; uracil—
cytosine
 - b. adenine—thymine; guanine—
cytosine
 - c. adenine—guanine; thymine—
cytosine
 - d. uracil—thymine; guanine—
cytosine
- ___ 16. Watson and Crick built models that demonstrated that
- a. DNA and RNA have the same structure.
 - b. DNA is made of two strands that twist into a double helix.
 - c. guanine forms hydrogen bonds with adenine.
 - d. thymine forms hydrogen bonds with cytosine.
- ___ 17. The amount of guanine in an organism always equals the amount of
- a. protein.
 - b. thymine.
 - c. adenine.
 - d. cytosine.
- ___ 18. 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
- a. TTGCATG.
 - b. AAGTATC.
 - c. CCTAGCT.
 - d. GGATCGA.
- ___ 19. Which of the following is *not* true about DNA replication?
- a. It must occur before a cell can divide.
 - b. Two complementary strands are duplicated.
 - c. The double strand unwinds and unzips while it is being duplicated.
 - d. The process is catalyzed by enzymes called DNA mutagens.

_____ 20 The enzymes responsible for adding nucleotides to the exposed DNA template bases are

- a. replicases.
- b. DNA polymerases.
- c. helicases.
- d. None of the above

_____ 21. The enzymes that unwind DNA are called

- a. double helixes.
- b. DNA helicases.
- c. forks.
- d. phages.