

Group Questions Ch 9 and Ch 10

Chapter 9.

1. A site in a chromosome where DNA replication begins is
 - a. Promoter
 - b. An origin of replication
 - c. An operator
 - d. A replication fork
2. In the lagging strand, DNA is made in the direction _____ the replication fork and is made as _____.
 - a. Toward, one continuous strand
 - b. Away from, one continuous strand
 - c. Toward, Okazaki fragments
 - d. Away from, Okazaki fragments
3. To make a new DNA strand, which of the following is/are necessary?
 - a. A template strand
 - b. Nucleotides
 - c. Heavy nitrogen
 - d. Both a and b

Chapter 10.

4. Can starting a new exercise program “change your genes,” as one ad promises?
We believe that an exercise program cannot change your genes as one ad promises. The only way that a gene can be changed or altered is through mutation. Altering the DNA sequence of a gene is a type of genetic change, or mutation.
5. List the RNA sequence transcribed from the DNA template sequence
TTACACTTGCTTGAGAGTC=AAUGUGAACGAACUCUCAG
6. Reconstruct the corresponding DNA template sequence from the partial mRNA sequence
GCUAUCUGUCAUAAAAGAGGA=CGAUAGACAGUAUUUUCUCCU
7. Titin is a muscle protein named for its size - its gene has the largest known coding sequence of 80,781 DNA bases. How many amino acids are there? 26,927
8. The reading frame begins at a _____ and is read _____.
 - a. Promoter, one base at a time
 - b. Promoter, in groups of three bases
 - c. Start codon, one base at a time
 - d. Start codon, in groups of three bases
9. What is the genetic code?
 - a. The relationship between a three-base codon sequence and an amino acid or the end of translation
 - b. The entire base sequence of an mRNA molecule
 - c. The entire sequence from the promoter to the terminator of a gene
 - d. The binding of tRNA to mRNA
10. The model below represents the central dogma of molecular biology, which describes the unidirectional flow of genetic information during gene expression.

DNA Pre-mRNA Mature mRNA Protein

DNA → RNA → PROTEIN

Which of the following would block mature mRNA from being translated into protein?

- a. A substance that blocks the active site of RNA polymerase.

- b. A substance that prevents the transfer of amino acids to the growing polypeptide chain.
- c. A substance that causes a mutation in the template strand of DNA
- d. A substance that prevents the removal of noncoding sequences from pre-mRNA