

SECTION 10-2 REVIEW

RNA

VOCABULARY REVIEW Define the following terms.

1. messenger RNA _____

2. transfer RNA _____

3. transcription _____

4. promoter _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Ribose is a type of

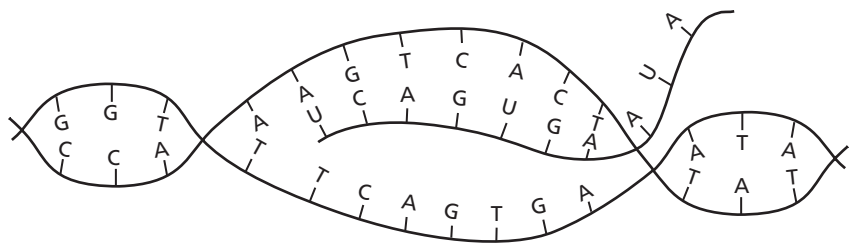
| | |
|------------------------------|------------|
| a. nitrogen-containing base. | c. sugar. |
| b. amino acid. | d. enzyme. |
- _____ 2. In RNA, thymine is replaced by

| | | | |
|-------------|-------------|--------------|------------|
| a. adenine. | b. guanine. | c. cytosine. | d. uracil. |
|-------------|-------------|--------------|------------|
- _____ 3. The type of RNA that carries the instructions for making a protein is called

| | | | |
|----------|----------|----------|----------|
| a. mRNA. | b. pRNA. | c. rRNA. | d. tRNA. |
|----------|----------|----------|----------|
- _____ 4. In eukaryotic cells, RNA is copied from DNA in the

| | |
|---------------|----------------------|
| a. ribosomes. | c. nuclear membrane. |
| b. nucleus. | d. cytosol. |
- _____ 5. What process is shown in the diagram below?

| | |
|-----------------------|--|
| a. proofreading. | |
| b. protein synthesis. | |
| c. replication. | |
| d. transcription. | |



SHORT ANSWER Answer the questions in the space provided.

1. Describe three ways that RNA differs from DNA. _____

2. Describe the shapes of the three types of RNA. _____

3. How is information about making proteins transmitted from the DNA to the site of protein synthesis?

4. What would be the nucleotide sequence of the RNA that is transcribed from DNA with a nucleotide sequence of G-C-T-A-A-T-C-C-G? _____

5. **Critical Thinking** How would the transcription of a eukaryotic gene be affected if a replication error changed the nucleotide sequence of the termination signal for that gene? _____

STRUCTURES AND FUNCTIONS Arrange the following steps in transcription in the correct order by writing the numbers 1–5 in the spaces before the steps.

- _____ a. RNA polymerase attaches to the first DNA nucleotide of the template chain.
- _____ b. RNA polymerase binds to the promoter on the template chain of DNA.
- _____ c. RNA polymerase reaches the termination signal and releases the DNA and RNA molecules.
- _____ d. The two chains of the DNA molecule separate near the promoter.
- _____ e. Complementary RNA nucleotides are added to the newly forming RNA molecule.