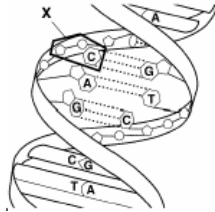


Name: _____ Date: _____ Test Date: _____

Review for DNA/RNA Test: Chapters 12 and 13

Study your Review, DNA Replication Quiz, Notes, Activities, and Homework over DNA, Protein Synthesis, and Mutations. This is a study tool, this is not the test.

1. This is the structure of what? _____



2. Name the three main parts of a nucleotide found in DNA?

3. Because of base pairing, the percentage of thymine molecules in DNA is about equal to the percentage of _____ molecules and the percentage of guanine molecules is about equal to the percentage of _____ molecules.

4. Based on Chargaff's rule, in the diagram below, the percentages of guanine bases in chicken DNA should be around _____.

Nitrogenous Bases (%)				
	A	G	T	C
Human		19.9	29.4	
Chicken	28.8			21.5
Bacterium (<i>S. lutea</i>)	13.4			

5. What did Rosalind Franklin contribute to the understanding of DNA?

6. What scientists figured out the "double-helix" shape of DNA? _____

7. _____ forms a base pair with thymine and _____ forms a base pair with cytosine.

8. Watson and Crick discovered the two strand in DNA run how?

9. When DNA is replicated, the result is two DNA molecules, each with _____ new strand and _____ original strand.

10. A DNA strand that has the bases _____ produces a strand with the bases _____.

11. What enzyme works to add DNA to ends of chromosomes in rapidly dividing cells such as those found in an embryo, to prevent genes from being lost during replication? _____.

12. In the diagram below, what nucleotide is going to be added at point “2”? _____.
 What nucleotide is going to be added at point “1”? _____.

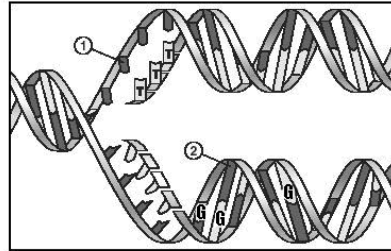


Figure 12-5

13. Enzymes end in “ase.” What enzyme adds base pairs to a new strand of DNA? _____.

14. Where is DNA located in eukaryotes? _____.

15. In both prokaryotes and eukaryotes, DNA replication happens before or after cell division? (Circle either _____ or “after”).

16. RNA contains what sugar? _____.

17. What base is found in RNA but isn't found in DNA? _____. What base found in DNA is not found in RNA? _____. In other words, DNA contains _____ while RNA contains _____.

18. Is RNA double-stranded or _____? (Circle one).

19. What are the three types of RNA? _____, _____ and _____.

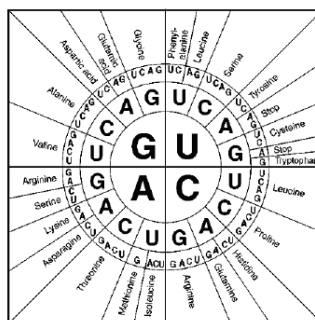
20. What type of RNA brings information in the genetic code from the nucleus to other parts of the cell? _____.

21. Which molecules are involved in protein synthesis (3 Types of RNA)? _____.

22. Messenger RNA (mRNA) molecules are transcribed from _____ molecules.

23. _____ are produced during transcription _____.

24. The diagram below shows _____.



25. In the diagram below, which amino acid is specified by the mRNA code CCC? _____.

Codons Found in Messenger RNA

		Second Base					
		U	C	A	G		
First Base	U	Phe Phe Leu Leu	Ser Ser Ser Ser	Tyr Tyr Stop Stop	Cys Cys Stop Tyr	U C A G	
	C	Leu Leu Leu Leu	Pro Pro Pro Pro	His His Gln Gln	Arg Arg Arg Arg	U C A G	
	A	Ile Ile Ile Met	Thr Thr Thr Thr	Asn Asn Lys Lys	Ser Ser Arg Arg	U C A G	
	G	Val Val Val Val	Ala Ala Ala Ala	Asp Asp Glu Glu	Gly Gly Gly Gly	U C A G	

26. Which code in the diagram above specifies the same amino acid as UAU? _____.

27. What happens during translation? _____

28. During translation, the type of amino acid added to the growing polypeptide depends on the _____ on the mRNA and the _____ on the tRNA.

29. What is a promoter? _____

30. A protein is being assembled when RNA is being _____.

31. The correct sequence of the transfer of information in most organisms is from _____ to _____ to _____.

32. What happens during “gene expression?” _____

33. In eukaryotes, transcription takes place in the _____ and translation takes place in the _____.

34. What is a “point mutation?” _____.

35. What is a “chromosomal mutation?” _____

36. Name the types of “chromosomal mutations.” _____

37. Most mutations have _____ effect on an organism