

## Protein Synthesis review

1. Which series is the correct pathway for protein synthesis?
  - a. DNA, RNA, protein synthesis
  - b. protein synthesis, RNA, DNA
  - c. DNA, protein synthesis, RNA
2. Translation is the first part of protein synthesis.
  - a. True
  - b. False
3. Transcription is the second part of protein synthesis.
  - a. True
  - b. False
4. Protein synthesis occurs on a ribosome. Is this transcription or translation?
  - a. transcription
  - b. translation
5. What does DNA stand for?  
What is protein synthesis called?  
What are the steps of proteins synthesis?
6. The site for the synthesis of proteins is the
  - a. ribosome.
  - b. cisternae.
  - c. cytoplasm.
  - d. nucleus.
7. Which molecules are involved in protein synthesis?
  - a. ribosomal RNA, transfer RNA, and mutagens
  - b. messenger RNA, ribosomal RNA, and transfer RNA
  - c. messenger RNA, introns, and ribosomal RNA
  - d. transfer RNA, introns, and mutagens
8. The process of producing proteins is
  - a. protein synthesis.
  - b. chromosomes.
  - c. photosynthesis.
9. The genetic specifications for assembling a protein are in the DNA. The first step in protein synthesis is for that code to be:

10. RNA serves as the master blueprint for protein synthesis.
- True
  - False
11. Which series is the correct order of protein synthesis?
- transcription, translation, replication
  - replication, translation, transcription
  - replication, transcription, translation
12. What type of RNA is a component of the site of protein synthesis?
- RNA
  - mRNA
  - rRNA
  - tRNA
13. Amino acids are transported to mRNA by
- DNA.
  - protein synthesis.
  - tRNA.
  - meiosis.
14. The process of reading a DNA molecule and creating a mRNA is called \_\_\_\_\_.
- Transcription.
  - Replication.
  - Translation.
  - Protein synthesis.
15. The process of making a strand of RNA from a strand of DNA is
- translation.
  - transcription.
  - protein synthesis.
  - metabolism.
16. Amino acids are linked during protein synthesis with \_\_\_\_\_ bonds.
- carboxylic
  - amide
  - peptide
  - protein
17. During protein synthesis each triplet specifies coding for an amino-acid.
- True
  - False
18. Compare the structures that make up the code of language (letters, words, sentences, paragraphs, punctuation) to corresponding parts of the code of protein synthesis.

19. The enzyme used in the synthesis of mRNA is
- restriction enzyme.
  - DNA ligase.
  - DNA polymerase.
  - RNA polymerase.
20. What are the two main steps for using genes to create proteins?
- replication and synthesis
  - translation and replication
  - transcription and replication
  - transcription and translation
21. Transcription takes place inside the\_\_\_\_\_.
22. The purpose of transcription is to produce
- proteins.
  - DNA.
  - RNA.
  - amino acids.
23. A. What is the Central Dogma of Genetics?  
B. Why is it called this?  
C. Is there a 'life form" (which may or may be considered 'living) where this does not occur?
24. Which is NOT a nitrogen base found in RNA?
- thymine
  - adenine
  - guanine
  - uracil
25. What passes through the nuclear pores?
- RNA
  - DNA
  - DNA and RNA
  - None of these
26. What is the structure of RNA?
- double stranded
  - single stranded
  - ladder
  - polypeptide chain
27. Which enzyme links RNA bases together to generate mRNA?
- DNA polymerase
  - helicase
  - RNA polymerase

28. List the three MAIN differences between RNA and DNA.
29. RNA contains which bases?
- a. adenine, thymine, guanine, cytosine, uracil
  - b. adenine, thymine, guanine, cytosine
  - c. thymine, guanine, cytosine, uracil
  - d. adenine, guanine, cytosine, uracil
30. What segment of DNA does not code for proteins?
- a. introns
  - b. RNA
  - c. DNA
  - d. mRNA
31. What sections of DNA contain information that codes for proteins?
- a. exons
  - b. introns
  - c. codons
  - d. rRNA
32. If the codon is UGT then the anti-codon is \_\_\_\_\_.
33. The amino acid for the start codon AUG is
- a. methionine.
  - b. alanine.
  - c. proline.
  - d. serine.
34. How many codon combinations are on a codon table?
- a. 64
  - b. 45
  - c. 20
  - d. 57
35. What is a codon?
36. The codon AUG, which codes for the amino acid methionine, also serves as a
- a. lac operon.
  - b. promoter.
  - c. stop codon.
  - d. start codon.

37. A group of three nucleotides that translate to an amino acid is called a(n) \_\_\_\_\_.  
a. Dictionary.  
b. Initiator.  
c. Codon  
d. Uncodon
38. Which RNA molecule has an anticodon?  
a. rRNA  
b. tRNA  
c. mRNA  
d. bRNA
39. If a strand of mRNA is AUAGCCUU, then what is the corresponding anticodon?  
a. ATAGCCTT  
b. CACGCCAA  
c. UAUCGGAA  
d. GUGCAAUU
40. The DNA codon AGT codes for an amino acid carried by a tRNA with the anticodon  
a. TCA.  
b. UCA.  
c. AGU.  
d. AGT.  
e. TCU.
41. To read the genetic code, the bases of DNA or RNA are grouped in threes.  
a. True  
b. False
42. RNA codons code for amino acids according to genetic code. AUG is a start code. What are the 3 STOP codes?  
a. GAU, AGU, and AAU  
b. UAA, UGG, and UGA  
c. UAA, UAG, and UGA  
d. TAA, TAG, and TGG
43. Make the Protein & DNA:

DNA=  
mRNA=UCGU CGACGAUGAUCAUCGGCUACUCGA  
tRNA=  
Protein=