**Transcription, Translation, Protein Synthesis** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ # \_\_\_\_\_

**Review Questions**

1. What are genes and what do they code for?

2. Proteins are made of chains of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. How do cells use proteins?

4. The subunits making up polypeptides are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. How many amino acids are there?

6. Sketch and label the basic structure of an amino acid.

7. What part of the amino acid is different & gives the amino acid its unique properties? \_\_\_\_\_\_\_\_\_\_\_

8. DNA is found in the \_\_\_\_\_\_\_\_\_\_\_\_ of a cell and begins the process of making a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

9. Where are proteins made?

10. Describe the structure of a ribosome.

11. The first step in protein synthesis is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the nucleus.

12. What nucleic acid contains the master code for making proteins?

13. What nucleic acid acts as a blueprint in copying the master code?

14. Compare and contrast the sugars on DNA and RNA.

15. Compare and contrast the nitrogen bases on DNA and RNA.

16. RNA is made of a \_\_\_\_\_\_\_\_\_\_\_\_ strand, while DNA is a \_\_\_\_\_\_\_\_\_\_\_ stranded molecule.

17. What base replaces thymine in RNA?

18. Name the 3 types of RNA molecules.

19. Why is mRNA edited? Include exactly HOW it is edited (ex- what is spliced out & what remains?).

20. What is rRNA?

21. Explain the function of tRNA. Also, draw a sketch, including the 2 attachment sites.

22. Explain what happens when the transcript arrives at the ribosome.

23. What are the A, P and E sites? Explain how this ‘system’ works.

24. A. What is a codon?

B. What is an anticodon?

24. What type of bond forms between amino acids?

25. How is translation terminated?

26. Transcribe and translate this template half of DNA: (ASSUME NO INTRON EXCISION)

3’TACGGCATACCATATCCCAAAACT5’

27. There are \_\_\_\_\_\_ amino acids and \_\_\_\_\_\_ possible codons.

28. Sketch the pathway for making a protein, beginning in the nucleus and ending at the Golgi. BE NEAT and LABEL.

29. What is the function(s) of RNA polymerase?

30. What is a TATA box? What is its function?

31. Sketch and label a ribosome with both its subunits, its 3 tRNA sites, and the attached mRNA transcript.

32. What happens after polypeptides are synthesized?