Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 3 Test Review

1. How many cells are formed by meiosis? Mitosis?
2. Are the cells formed by meiosis identical to each other?
3. Compare the number of chromosomes in a gamete to the number in a body cell.
4. Compare the number of chromosomes in a diploid cell with those in a haploid cell.
5. What happens in crossing over? During which phase of meiosis does it occur?
6. What is the purpose of the exchange of genetic material in crossing over?
7. Genes contain instructions for assembling \_\_\_\_\_\_\_\_\_\_.
8. Which specific component of DNA provides the instructions for the production of a protein?
9. How are the four DNA nucleotides different from each other?
10. What are the differences between DNA and RNA?
11. What is produced during transcription? Translation?
12. What is the ultimate source of genetic variability?
13. How is a point mutation different from a frameshift mutation?
14. Draw examples: point mutation and frameshift mutation.
15. What does homozygous mean? Heterozygous?
16. Cross a homozygous dominant white dog with a black dog. Explain the results.
17. What is polygenic inheritance? Give an example.
18. What is codominance? Give an example.
19. What is meant by multiple alleles? Give an example.
20. What is incomplete dominance? Give an example.
21. If round and blue are dominant, give the genotype for a heterozygous round and yellow individual.
22. List the possible gametes for a parent with a genotype of CcDd.
23. Cross a ggHh parent with a GgHH parent. What are the results?
24. Explain the process of DNA fingerprinting.
25. Is everyone’s DNA fingerprint unique? Explain.
26. What is gel electrophoresis used for?
27. What information can be learned from a DNA fingerprint?
28. What is a karyotype? What information can be learned from a karyotype?
29. What is nondisjunction? What does it look like on a karyotype?
30. What process is likely responsible for bringing together two recessive alleles for a genetic defect?
31. How many chromosomes does a normal human have in body cell? Gametes?
32. What are the sex chromosomes for a normal male? A normal female?
33. How is PKU inherited? Sickle cell anemia? Huntington’s disease? Tay-Sachs disease?
34. How many DNA bases are changed in a person with sickle cell anemia?
35. What happens when a baby does not receive an X chromosome from either parent?
36. No matter how many X chromosomes a baby has, if it has at least one Y, it has to be a \_\_\_\_\_.
37. In order for a mutation to be passed down, it must affect the DNA of the parent’s \_\_\_\_\_\_\_\_\_\_.
38. Explain the process of cloning. Where does the baby’s genetic information come from?