ANSWERS TO FINAL EXAM STUDY GUIDE

1. DNA replication
2. Bases in DNA in the nucleus
3. 8
4. Sequence of paired bases
5. Chromosomes contain DNA which contains the genes (sections used to make proteins)
6. DNA to mRNA to ribosome to tRNA to protein

(you do not need to create a huge essay containing all of this but be aware of how the DNA (in the chromosomes) has the sequence of bases that determine the sequence of subunits in the Protein made (at the ribosome))

1. DNA untwists—2 strands separate—molecular bases pair up—2 identical DNA molecules are made.
2. Cells contain DNA that controls the production of proteins
3. Sequence of nitrogenous bases
4. Arginine-glutamine-glutamic acid-phenylalanine
5. GUC-GAC
6. 3-Phenyl., Valine, Aspartic Acid
7. A---T (U in RNA)

C---G

 \*this ensures the code stays intact

14. GAU (anticodons are on tRNA and match with mRNA)

15. a change in DNA---affects joining of amino acids in sequence—affects appearance of the characteristic

16. 2 alleles per gene (\*\*know this wording!!!)

17. meiosis reduces the chromosome number and fertilization restores it

18. offspring have half the chromosomes

19. sperm or egg. Mutation could be passed to offspring

20. This is a zygote dividing by mitosis into a multicellular organism.

21. gametes are the sperm and egg (half chromosomes) and when they join they are a zygote (full chromosome number)

22. same chromosome number

23. Growth and development. Meiosis to make gametes.

24. Mitosis—nucleus divides

 Cytokinesis—cell divides

Interphase—DNA replicates, centrioles divide, proteins are produced. \*The longest phase!

25. 5

26. GUG ACA GAU U

27. Mutations are not always bad. They increase variety. This might lead to the evolution of new species.

28. substitution can have little effect. Insertion or deletion worse because cause frameshift.

29. double helix twisted. (you know how it looks!)

30. nucleotides

31. amino acids

32. DNA---deoxyribose sugar, phosphate, N-bases (ACTG)

 RNA—ribose sugar, phosphate, N-bases (ACUG)

33. Having an extra chromosome. Caused by failure of chromosomes to separate (nondisjunction)

34.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | A | T | G | C | Total bases (given in question) |
| A | 250 | 250 | 150 | 150 | 800 |
| B | 300 | 300 | 100 | 100 | 800 |
| C | 225 | 225 | 175 | 175 | 800 |
| D | 175 | 175 | 225 | 225 | 800 |

 (see me if you don’t get this!!!!)

35. D

36. D

37. \*\*\*\*\*This is your big essay. You can decide how you will answer it. There are hints in this question on what to include. You are on your own here (I can’t give everything!)

38. \*remember---you trace them to the closest ‘fork’

 The horse and donkey are the closest.

 The penguin is closer to the duck than pigeon because there is a more recent common ancestor (closer ‘fork’!)

***\*\*You know how to use dichotomous keys…always start with first question and go from there.***

***\*\*NOT on study guide but should know:***

***---Cloning produces organisms that are genetically identical.***

***---Combining human DNA with bacterial DNA to make hormones is an example of genetic engineering.***

\*\*\*ALL OF THE “TERMS TO KNOW” ARE ON QUIZLET UNDER “FINAL TERMS” AND ARE WORDED VERY CLOSELY TO THE EXAM! USE THEM!