

2 YEAR BIOLOGY FINAL EXAM STUDY GUIDE SEMESTER 2

Chapter 10

1. What happens when a cell grows too large.
2. List the order of the cell cycle.
3. Define cancer
4. What happens during mitosis?
5. List the stages of mitosis including drawings of each stage.

Chapter 12

6. Know the structure of DNA, including its parts and shape.
7. Define Transcription
8. Define Translation
9. Define Replication
10. Define Point mutation
11. What is the difference between a chromosomal mutation and a point mutation.
12. What are the bases of DNA? How do they match up?
13. What are the bases of RNA and how do they match?
14. What are the similarities and differences between DNA and RNA.
15. Using the chart on page 303, decode the following codons:

TAG CTC AAA GCU

16. List all the steps it takes to produce a protein.

Chapter 11

Part I: Meiosis

17. Contrast a diploid and a haploid cell.
18. Crossing-over
19. Gamete
20. What happens during meiosis?
21. List the steps of meiosis in order.
22. How is meiosis different in men and in women?
23. What are the differences between mitosis and meiosis.

Part II: Genetics

24. Define Probability
25. What is the difference between pure-breed and hybrids?
26. Define allele.
27. What is the difference between heterozygous and homozygous?

28. What happens during incomplete dominance?
29. What happens during co-dominance?
30. Define heredity.
31. What is the difference between genotype and phenotype?
32. Contrast dominant and recessive.
33. Solve 1 factor punnett squares:

Heterozygous tall plant crossed with a short plant

Heterozygous yellow crossed with heterozygous yellow

34. Know how to solve dihybrid punnet squares:

Cross two heterozygous running, heterozygous black mice. (Black is dominant to brown; running is dominant to waltzing) Include genotype and phenotype.

Chapter 14

35. What sex chromosomes are found in men and women?

36. What is the probability that a baby will be male?

37. Explain what happens during the following diseases:

- Color blindness
- PKU
- Autosome
- Sickle cell anemia
- Cystic fibrosis
- Down's syndrome

38. Why is the human genome project important?

39. What does it mean if a gene is sex linked?

40. What are karyotypes used for?

41. What are pedigrees used for?

Chapter 13

42. Understand the difference in

- Selective breeding
- Inbreeding
- Hybridization

43. How is gel electrophoresis used?

44. How is a DNA molecule cut?

45. What is a transgenic organism?

46. What is transformation?

47. How are many copies of a gene made?

48. Explain how cloning works?