

Biology I Advanced
Obj Chapter 8
Cell Division

1. Describe the structure of a chromosome in both coiled and uncoiled forms. Include differences in single and dyad forms.
2. Define each of these terms in a manner that differentiates them from each other:
chromatin chromatid chromosome centromere *telomere*
3. Describe the process of producing a karyotype chart. Describe a normal human karyotype in terms of *homologous pairs, autosomes, sex chromosomes, diploid number.*
4. Relate X inactivation to Barr bodies.
5. Describe the condition of a karyotype in each of the following cases:
Klinefelter's syndrome Turner's syndrome "Super male" "Meta female"
Down Syndrome Trisomy Polyploidy Nondisjunction
6. Describe the cell cycle. Include names of parts of the cell cycle, events that occur in each part, and condition of the chromosomes in each part.
7. Compare and contrast mitosis and meiosis in terms of purpose, cells involved, and results.
8. Outline the events of mitosis.
9. Outline the events of meiosis.
10. Define these terms:
binary fission mitotic spindle density dependent inhibition growth factor
malignant tumor benign tumor metastasis gamete zygote
haploid diploid parent cell daughter cell
11. Describe how crossing-over occurs. What are the advantages and disadvantages of crossing over?
12. Contrast oogenesis and spermatogenesis in at least four ways.
13. Be able to answer the following:
Why do organisms have two of each type of chromosome?
Why is trisomy dangerous?
Why do infants with trisomy-21 survive more often than those with trisomy-2?
Why must karyokinesis be more precise than cytokinesis?