Chapter 13 – Meiosis and Sexual Life Cycle

The Basis of Heredity

1. Explain in general terms how traits are transmitted from parents to offspring.
2. Distinguish between asexual and sexual reproduction.

The Role of Meiosis in Sexual Life Cycles

3. Distinguish between the following pairs of terms:
    a. somatic cell and gamete
    b. autosome and sex chromosome
4. Explain how haploid and diploid cells differ from each other. State which cells in the human body are diploid and which are haploid.
5. Explain why fertilization and meiosis must alternate in all sexual life cycles.
6. Distinguish among the three life-cycle patterns characteristic of eukaryotes, and name one organism that displays each pattern.
7. List the phases of meiosis I and meiosis II and describe the events characteristic of each phase.
8. Recognize the phases of meiosis from diagrams or micrographs.
9. Describe the process of synapsis during prophase I and explain how genetic recombination occurs.
10. Describe three events that occur during meiosis I but not during mitosis.

Origins of Genetic Variation

11. Explain how independent assortment, crossing over, and random fertilization contribute to genetic variation in sexually reproducing organisms.
12. Explain why heritable variation is crucial to Darwin ’s theory of evolution by natural selection