Cell Reproduction & Growth Chapter 3c

I. Cell Life Cycle
  A. Background
    1.why divide
    2.why not divide
  B. Interphase
    1.G_1 Phase
    2.S phase
      1)DNA helicase
      2)DNA polymerase
        a)complementary base pairing
      3)DNA ligase
    3.G_2 Phase
  C. Mitotic phase
    1.Mitosis
      a. Phases
        1)Prophase
          a)mitotic spindle
        2)Metaphase
          a)metaphase plate
        3)Anaphase
        4)Telophase
    2.Cytokinesis
      a. cleavage furrow
II. Genetic Vocabulary
  A. Genome
  B. Chromosome
  C. Gene
III. Genetic code
    1.codon
    2.degenerate
IV. Central Dogma of Molecular Biology
  A. DNA ---> RNA ---> PROTEIN
V. Transcription
    1.functional units
      a. mRNA
      b. tRNA
      c. rRNA
  A. “Steps” of Transcription
    1.Initiation
      a. RNA polymerase
        1)promoter
    2.Elongation
    3.Termination

VI. Translation
    1. location
    2. Components
        a. mRNA
        b. Ribosomes
        c. tRNA
            1) cloverleaf
            2) charged
            3) anticodon
  A. Steps of Translation
    1. Initiation
    2. Elongation
            a) P-site
            b) A-site
    3. Termination
            1) stop codon
VII. Cellular Differentiation
  A. In the lab
    1. primary cells
    2. immortalized cells
  B. In the body
    1. mature differentiated cells
    2. stem cells
  C. Available stem cells
    1. adult stem cells
    2. embryonic stem cells
        a. pluripotent
    3. induced pluripotent stem cells