## Chapter 12: The Cell Cycle (Outline)

## **Overview:**

- Cell division: production of cells
- *Cell Cycle:* the life of a cell from the time it is first formed from a dividing parent cell into two daughter cells
- Breakdown in cell cycle control plays a major role in cancer development

## Concept 12.1:

- □ Most cell division results in genetically identical daughter cells
- Genome: a cells endowment of DNA its genetic information
- □ *Chromosomes:* where DNA is packaged
- *Chromatin:* building material of chromosomes
- □ *Somatic Cells:* all body cells except the reproductive cells. Contain 46 chromosomes.
- □ <u>*Gametes:*</u> sperm and eggs, 23 chromosomes
- □ Sister chromatids: joined copies of original chromosomes
- □ <u>Centromere:</u> a region containing specific DNA sequences where the chromatic is <u>Mitosis:</u> the division of the genetic material in the notice.
  <u>Cytokinesis:</u> the division of the cytoplast

## Concept 12.2:

- □ *Witotic Phase:* includes mitosis and cytokinesis
- □ <u>*Mitosis has 5 Steps*</u>: prophase prometaphase metaphase anaphase and telophase
- <u>Centrosome</u>: a subcellular region containing material that functions throughout the cell cycle to organize the cells microtubules
- □ *Aster*: A radial array of short microtubules extends from each centrosome
- □ *Kinetochore:* A structure of proteins associated with specific sections of chromosomal DNA at each centromere
- <u>Cleavage Furrow:</u> A shallow groove in the cell surface near the old metaphase plate
- Binary Fission: division in half refers to the process and to the asexual reproduction of single celled eukaryotes