**Final Exam 2016**

 What happens to cells as they become larger? Demands placed on cells? Problems associated with cell growth.

Importance of small cells VS. Large cells

 What is mitosis? Stages of mitosis; characteristics of all the stages of mitosis; sequential order of mitosis.

End product of mitosis; when and why mitosis occurs

Know the importance of cell size to surface area to volume ratio.

After mitosis, know how daughter cells would compare to the parent cell in surface area to volume ratio.

Know the characteristics of interphase

Identify the structure of a chromosome (center attachment- centromere)

Know which stage chromosomes are visible during mitosis

Identify the role of the spindle during mitosis.

 Identify the main stages of cell division.

Identify the structure of a DNA model

Know the components that make up a DNA nucleotide

Know where DNA is located in Eukaryotic cells

Differences between mitosis and meiosis

Product of meiosis; haploid vs diploid

Contribution of Robert Hooke, Robert Brown, Anton VanLeeuwenhoek

 Contribution of Schleiden and Schwann

 What does the cell theory state

Function of the cell organelles; nucleus, mitochondria, Golgi, ER, lysosomes, cell wall, cell membrane, ribosomes

Differences between plant and animal cells

Organelles responsible for providing energy for plant and animal cells

Components that make up the cell membrane; function of the cytoskeleton

Diffusion; selectively permeable membrane; osmosis

What happens to cells when placed in distilled water and salt water

Cell transport that is passive and cell transport that requires energy

Autotroph vs heterotroph; type of organism for each

 Photosynthesis; products and reactants, equation for photosynthesis, organelle responsible

What is a pigment; why are plants green; pigment responsible for absorbing sun for photosynthesis

Cellular respiration: products, reactants, equation for respiration, organelle responsible

What does respiration break down so it can release energy

What is a hypothesis; identify examples of a hypothesis; What is a theory

Dehydration synthesis; homeostasis

Equipment used to view microscopic organisms

Building blocks of proteins; Building block of complex carbohydrates

Polymer vs monomer of the macromolecules- protein, carbohydrates, nucleic acids,

Monosaccharide, disaccharide, polysaccharide; examples of each

Function of enzymes, how do they affect reactions in cells; Functions of proteins

Food web vs food chain ;Producers, consumers, herbivore, carnivore ;Trophic levels

 How are cellular respiration and photosynthesis almost opposite processes

Examples of lipids

Contribution of James Watson, Francis Crick, Rosalind Franklin

 

 Glucose and fructose; How are they different; what is a isomer

When do centrioles beginning to move apart in animal cells

 Where the human genome is minimally contained

Define the human genome?

 Where in DNA is the genetic information contained

What would the chemical formula be for 3 molecules of glucose linked together by dehydration synthesis

What is insoluble fiber; examples

What type of sugar is lactose

Characteristics of cellulose; can humans digest cellulose; What happens when oils are hydrogenated