Cell Test Review
Ch. 7 & 10

Resources:

1. Read Textbook Ch. 7 & 10
2. Cell Structure and Function Notes
3. Basic Unit of Life Lab
4. Plasma Membrane Notes
5. Osmosis and Diffusion Lab
6. Cell Cycle Notes

Key Concepts:

1. Basic unit of life?- Cell
2. Cellular characteristics of Prokaryotes vs. Eukaryotes
    a. *Eukaryotes- membrane-bound organelles and nucleus*
    b. *Prokaryotes- Evolution was preceded by eukaryote, **bacteria is only example***
3. Organelle
    a. *Structure in a eukaryotic cell that performs a specific function*
4. Diffusion
    a. *Movement of particles from an area of high concentration to an area of low concentration*
5. Osmosis
    a. *Process by which water passes out or into the cell…high to low*
6. Endocytosis
    a. *Movement of large particles into the cell*
7. Exocytosis
    a. *Ridding the cell of material by discharging if from sacs*
8. Function of microtubules & microfilaments
    a. *Help cell maintain shape*
9. Function of Spindle fibers in cell
    a. *Attach to chromosomes during cell division*
10. Structure and function of the Cell (plasma) membrane
    a. *Encloses the contents of the cell, is selectively permeable and helps to maintain homeostasis*
11. Metric conversions
    a. *PRACTICE*
12. Phagocytosis
    a. *Example of endocytosis- cell membrane surrounds food (engulfing large particles)*
13. Pinocytosis
    a. *The cell takes in fluids containing particles*
14. Trace the path of a protein through a cell
    a. *Endomembrane system..see Notes*
15. Function of :

Mitochondria- *powerhouse of cell, muscle has a great number of them*
Golgi body- *involved in receiving proteins from ER, packaging, sorting, and distribution of proteins*
Smooth ER
Associated with "free" ribosomes to generate proteins for use IN cell
Rough ER
Contain ribosomes, generates protein for use OUTSIDE of cell
Ribosomes
Site of protein synthesis
Nucleus
Contain DNA…control cell's activities
Chromatin
Complex of DNA that make-up chromosomes
Perioxisome
Contain perioxidase to break down peroixde
Chloroplasts
Associated with process of photosynthesis
Cell Plate
Forms when plant cell is dividing
Lysosome
Contain digestive enzymes to "clean-up" cell
Plasma membrane
Surrounds the cell, regulates what moves in and out of cell
Cell Wall
Outer layer of plant cell, rigid and protective
Nucleolus
Produce ribosome, found in nucleus
Nuclear envelope-*membrane surrounding the nucleus*

Centrioles
Paired structure, found ONLY in animal that aide in cell division
Central vacuole-
Large organelle in plants for storing water, minerals, waste and nutrients
Plasmodesmata
Similar to animals gap junctions for cell to cell communication

16. Active transport
    a. *Requires expenditure of ATP energy*
    b. *Moving particles from a area of low concentration to area of high concentration*
17. Cancer
    a. *Uncontrolled cell division*
18. Cell division
    a. *Two daughter cells are produced from one pre-existing cell*
19. Cell theory
    a. *Cells come from other cells*
    b. *Cell is the basic unit of life*
    c. *All living things are made of cells*
20. Cell wall structure and function
    a. *Cell wall is made of cellulose, and gives the cell support, protection, and shape*
21. Chromatids
    a. *Two identical copies of DNA making up a replicated chromosome*
22. Contributions of Schleiden, Scwhann, Hooke and other early cell scientists
    a. *Hooke-coined the term "Cell"*
    b. *Scwhann (animal) and Schleiden (plant) concluded all living things are made of cells*
23. Diploid
    a. *A cell or organism consisting of two sets of chromosomes*
24. Electron microscopes and magnification power
    a. *2000X*
25. Function of cyclins
    a. *Proteins that control "timing" of cell division*
26. Functions of the cytoskeleton
    a. *Help cell maintain shape*
27. Haploid
    a. *A cell or organism consisting HALF sets of chromosomes*
28. Interphase and its stages and what happens in those stages
    a. *Cell grows in size to prepare for Mitosis*
29. Ion pumps and channels structure and function
30. Levels of organization
    a. *Cell, tissue, organ, organ system, organisms*
31. Mitosis and its stages and the events that occur in those stages
    a. *IPMAT*
32. Passive transport and examples
    a. *Osmosis*
    b. *Diffusion*
    c. *Facilitated Diffusion*
33. Protein structure and the bonds responsible for their level of structure
    a. *Primary, secondary, tertiary, quaternary*
34. Stages of the Cell Cycle
    a. *G1, S, G2, Mitosis (Pro, Meta, Ana, Telo, Cytokensis)*
35. The use of fluorescent labels and light microscopy
    a. *To help study cellular processes*
36. Tissue
    a. *Tissue is an ensemble of cells, not necessarily identical, but from the same origin, that together carry out a specific function*
37. Tumor
    a. *Swelling or lesion formed by an abnormal growth of cells*
38. Endomembrane system
    a. *See Above*
39. Limits to cell size (SA/V)
    a. *Too large cell cannot move food around or release waste*
40. Sodium-potassium pump
    a. *Potassium is pumped into cell*
    b. *Sodium is pumped out*
    c. *ATP is required, so form of active transport*
41. ADD Hypertonic, Hypotonic, and isotonic
    a. *Hypertonic-high particles outside (low water) cause cell to release water – shrink or wilt*

ADD Mitosis Notes