

## **Biology 12: Chapter 3 – Review Worksheet Answer Key**

### **A. Cell Theory:**

1. Cell theory = living things are composed of cells and new cells arise only from preexisting cells.
2. Resolving power of a microscope is the capacity to distinguish between 2 adjacent pts and is dependent on the wavelength of the illumination. Electron microscopes have greater resolving power b/c electrons have shorter wavelengths than visible light.

### **B. Eukaryotic and Prokaryotic Cells**

1. Eukaryotic cell = membrane-bound nucleus, and membranous organelles.
2. Phospholipids and proteins.
3. Primary = cellulose molecules, form fibrils that lie at right angles.  
Secondary = Lignin, substance that makes secondary wall stronger.
4. Control center = nucleus. DNA molecules directs protein synthesis.
5. Chromatin: threadlike network in nucleus, made up of DNA and protein  
Chromosome: rod-like structure in nucleus seen during cell division; contains genes (hereditary units)
6. Nucleolus = Ribosomal subunit formation, contains DNA that produces rRNA for ribosome formation
7. 2 layers.
8. Permit passage of proteins into nucleus and let ribosomal units out of nucleus.
9. Ribosomes are dense granules composed of 2 subunits that contain both RNA and proteins. They are sites of protein synthesis. When several ribosomes

...in from rough ER is structural.  
main functions of smooth ER.  
main function of the enzymes in muscle cells.  
main function of rough ER.  
what a glycoprotein is.  
what a transport vesicle is.

5. Give the
6. Give the
7. Give the
8. Explain
9. Explain