Homework #7  
Format: Type or write clearly   
 WARNING: You must put your answers on this worksheet. Do not answer on a separate   
 sheet of paper.

1. Visit the website:

http://www.visionlearning.com/library/module\_viewer.php?mid=64&mcid=&l=

Read the module on “Discovery and Structure of Cells” and complete the quiz. Print out your score from the quiz. You do not need to take the quiz multiple times to get a perfect score. I am not interested in your score, just in the fact that you completed the quiz. That is, a student who scored 1 out of 10 will receive the same credit as a student who scored 10 out of 10.

2. Complete the following table by writing the name of the structure or organelle in the right hand column that matches the structure/function in the left hand column. A cell structure/organelle **may** be used more than once. Use the list of organelles that we generated in class or use the list in question 3 below.

|  |  |
| --- | --- |
| **Structure/Function** | **Cell Part/Organelle** |
| 1. Stores material within the plant cell |  |
| 1. Closely stacked, flattened sacs (plants only) |  |
| 1. The exact sites of protein synthesis |  |
| 1. Can either store chemicals that deter predators or color pigments which attract pollinators for sexual reproduction |  |
| 1. Organelle that manages or controls all the cell functions in a eukaryotic cell |  |
| 1. Contains chlorophyll, a green pigment that traps energy from sunlight and gives plants their green color |  |
| 1. Digests excess or worn-out cell parts, food particles and invading viruses or bacteria |  |
| 1. Small bumps located on portions of the endoplasmic reticulum |  |
| 1. Firm, protective structure that gives the cell its shape in plants, fungi, and most bacteria |  |
| 1. Detoxifies chemicals, drugs, alcohol |  |
| 1. Produces a usable form of energy for the cell |  |
| 1. Packages proteins for transport out of the cell |  |
| 1. Site where ribosomes are made |  |
| 1. The membrane surrounding the cell |  |
| 1. Name for the collection of DNA in the nucleus of eukaryotic cells |  |
| 1. Consist of hollow tubes which provide support for the cell |  |
| 1. Small hair-like structures used for movement or sensing things |  |
| 1. Site of lipid production |  |
| 1. Composed of a phospholipid bilayer |  |
| 1. Longer whip-like structures used for movement |  |

3. Put a check in the appropriate column(s) to indicate whether the following organelles/structures are found in plant cells, animal cells or both.

| **Structure/Organelle** | **Plant Cells** | **Animal Cells** |  | **Structure/Organelle** | **Plant Cells** | **Animal Cells** |
| --- | --- | --- | --- | --- | --- | --- |
| Cell Wall |  |  |  | Central vacuole |  |  |
| Transport Vesicle |  |  |  | Rough Endoplasmic reticulum |  |  |
| Chloroplast |  |  |  | Ribosome |  |  |
| Nucleus |  |  |  | Plasma membrane |  |  |
| DNA |  |  |  | Vacuole |  |  |
| Cytoplasm |  |  |  | Nucleolus |  |  |
| Cytoskeleton |  |  |  |  |  |  |
| Smooth Endoplasmic Reticulum |  |  |  |  |  |  |
| Golgi apparatus |  |  |  |  |  |  |
| Lysosome |  |  |  |  |  |  |
| Mitochondria |  |  |  |  |  |  |

4. Circle the structures above (in question 3) that are found in prokaryotic cells.

5. For each cell type described below (a-e), match it to the prevalent organelle (i-v) and **explain WHY** you selected this organelle. That is, write the correct letter (a-e) in questions i-v and explain why you selected this answer.

***Descriptions***

a. Muscle cell in thigh of a long-distance runner

b. Pancreatic cell that secretes digestive enzymes (i.e. most enzymes are proteins)

c. Ovarian cell that produces the steroid hormone estrogen (remember that steroid hormones are a type of lipid)

d. White blood cell that engulfs and destroys bacteria

e. Cell forming a blood vessel that provides a “canal” for continuous blood circulation

***Organelles***

i. In which cell would you find the most lysosomes? Why?

ii. In which cell would you find the most mitochondria? Why?

iii. In which cell would you find the most smooth ER? Why?

iv. In which cell would you find the most rough ER? Why?

v. In which cell would you find the most cytoskeleton? Why?