The Cell : Study Guide Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Answer ALL of the questions accurately and completely ( excluding any \*\*material ) for applied test credit.

1. List 4 functions of the cell membrane.

2. List the 3 major molecules that make up the structure of the cell membrane.

3. What is permeability?

4. Explain the difference between passive and active cell processes.

5. a) Define diffusion.

 b) Define osmosis and list and explain 3 effects of osmosis on cells. Be able to recognize these.

 c) Define filtration and explain one product of it. If filtration of material is not being maintained, explain the condition that subsequently effects the body.

 d) Describe the mechanism of facilitation and how rapidly it functions.

6. a) What is active transport?

 b) What is vesicular transport? Describe the 2 categories of vesicular transport.

7. Sketch and describe each of the following cellular structures including the function:

a) cytoskeleton: including microfilaments, microtubules, intermediate filaments

b) microvilli :

c) centrioles :

d) cilia :

e) flagella :

f) ribosomes :

g) peroxisomes and lysosomes :

h) endoplasmic reticulum :

i) Golgi apparatus :

j) mitochondrion :

k) nucleus :

l) nucleolus :

m) nuclear pore :

n) nuclear membrane :

8. Sketch and describe the function of each of the following membrane molecules:

a) phospholipids :

b) carbohydrates :

c) proteins :

9. Describe a single DNA molecule.

10. What is a gene and what does it contain?

11. List and define the two processes of protein synthesis. (include where they take place!)

12. With regards to the cell cycle: Be able to recognize … and

a) Describe Interphase, G1, S, and G2.

b) Describe Mitosis and each phase.

c) Describe Cytokinesis.

13. Describe apoptosis.

14. Describe cell differentiation.