AP Biology 1/12/15

Cell Review

Match the cell parts with their functions by writing the letter of the corresponding function next to the part it belongs to.

1. Mitochondria: \_\_\_\_\_\_

2. Ribosomes: \_\_\_\_\_\_\_

3. Nucleus: \_\_\_\_\_\_\_\_

4. Microtubules: \_\_\_\_\_\_

5. Rough Endoplasmic Reticulum: \_\_\_\_\_\_

6. Cilia

7. Lysosome: \_\_\_\_\_\_\_\_

8. Cell Wall: \_\_\_\_\_\_\_\_

9. Nuclear Envelope: \_\_\_\_\_\_\_\_

10. Microfilaments: \_\_\_\_\_\_\_\_

11. Centrosome: \_\_\_\_\_\_\_

12. Smooth Endoplasmic Reticulum: \_\_\_\_\_\_\_

13. Cell Membrane: \_\_\_\_\_\_\_\_

14. Flagella: \_\_\_\_\_\_\_

15. Chloroplasts: \_\_\_\_\_\_\_

16. Golgi Apparatus: \_\_\_\_\_\_\_

17. Intermediate Filaments: \_\_\_\_\_\_\_\_

18. Peroxisome: \_\_\_\_\_\_\_

19. Nucelolus: \_\_\_\_\_\_\_\_\_\_

20. Centriole: \_\_\_\_\_\_\_\_\_

21. Vacuole: \_\_\_\_\_\_\_\_\_

22. Cytoskeleton: \_\_\_\_\_\_\_

A. Protein Synthesis.

B. Modification of proteins, carbohydrates on proteins, and phospholipids; polysaccharide synthesis; sorting of products; release of products in vesicles.

C. Breakdown of digested substances, cell macromolecules, and damaged organelles for recycling.

D. Cellular respiration.

E. Part of the cytoskeleton in all eukaryotic cells; composed of subunits of the protein actin in twisted double chains; act to bear tension and support cell shape; make up the core of microvilli; have a role in cell motility; interactions with myosin filaments creates muscle contractions.

F. Type of microfilament, occur in large numbers on the cell surface; found in the trachea and oviduct; may act as signal receiving “antenna” for the cell, which is crucial for brain function and embryonic development.

G. Contains enzymes that transfer hydrogen atoms from substrates to oxygen, producing hydrogen peroxide, that is then converted to water by another enzyme.

H. Houses chromosome, which are made of chromatin (DNA and proteins).

I. Synthesis of lipids, metabolism of carbohydrates, calcium ion storage, detoxification of drugs and poison.

J. Digestion, storage, waste disposal, water balance, cell growth and protection.

K. Located within the centrosome, exist as a pair, each composed of 9 sets of triplet microtubules arranged in a ring; help organize microtubule assembly.

L. A network of proteins fibers extending throughout the cytoplasm.

M. Type of microfilament, occur singularly or in small numbers, and are long in length; generally has a locomotive function in unicellular organisms or sperm.

N. Photosynthesis.

O. Regulates entry and exit of materials into and out of the nucleus.

P. Aids in synthesis of secretory and other proteins from bound ribosomes; adds carbohydrates to proteins to make glycoproteins; produces new membrane.

Q. A region located near that nucleus, from which microtubules grow; found only in animal cells.

R. Composed of cellulose; provides protection and support to plant cells; maintains cell shape; prevents excessive water uptake.

S. Part of the cytoskeleton in some animal cells; most permanent element of the cytoskeleton; composed of proteins belonging to the keratin family; specialized for bearing tension.

T. Sythesis of ribosomal subunits (composed of rRNA).

U. A component of the cytoskeleton, composed of the protein tubulin; shape and support the cell, resisting compression; serve as tracks which organelles equipped with motor proteins can move along; guide vesicles from the ER to the golgi, and from the golgi to the plasma membrane; involved in the separation of chromosomes during cell division.

V. The boundary between a cell and its surroundings, regulates transport into and out of the cell with its selectively permeable character.

Practice Questions:

The smooth endoplasmic reticulum in hepatocytes can expand as a response to which of the following?

 A. consumption of prescribed drugs to treat a health condition

B. An increase in aerobic exercise

C. A diet that is high in fats

D. recovery from a physical injury

Which cellular structure is least likely to bear a membrane protein that moves hydrogen ions out of the organelle?

A. mitochondria

B. Golgi Body

C. Lysosome

D. Nucleus

Which of the following structures/functions is not created using microtubules?

A. Mitotic spindles

B. Muscle Contraction

C. Eukaryotic Flagella

D. Cilia

Where does the electron transport chain occur in prokaryotic cells and eukaryotic cells, respectively?

A. The mitochondria, the mitochondria

B. The cellular membrane, the mitochondria

C. Chloroplasts, the mitochondria

D. The chloroplasts, the cell membrane

E. The mitochondria, the cell membrane

Where would you be least likely to find a transmembrane protein?

A. Nucleus

B. Mitochondria

C. Cell Membrane

D. Ribosomes

E. Chloroplasts

In what ways are chloroplasts and mitochondria alike?

A. they can change shape and move around the cell

B. All of these statements give similarities between the two.

C. They each contain their own DNA and ribosomes

D. They function to provide energy to the cell

What cellular structure is composed of a protein skeleton that is made up of lamins?

A. Mitochondrion

B. Lysosome

C. Nucleus

D. Peroxisome

E. Chloroplast