

# THE XAVIER REVIEW-BIO 110 QUIZ # 2

## CELLS

- The main difference between animal and plant cells is that
  - Animal cells lack rigid wall
  - Animal cells have vacuoles
  - Plant cells lack rigid cell wall
  - Plant cells have small vacuoles
- The cell theory is one of the unifying themes of biology. Which of the following statements would be part of the cell theory?
  - All life is made of cells.
  - Cells are the smallest units of life.
  - Cells come from preexisting cells.
  - All of the above
- You are told that the cells on a microscope slide are plant, animal, or bacterial. You look at them through a microscope and see cell walls and membrane-bound organelles. You conclude that the cells
  - are plant cells.
  - could be either plant or bacterial.
  - are animal cells.
  - could be plant, animal, or bacterial.
  - are bacteria.
- All cells
  - are enclosed in a membrane that maintains internal conditions different from the surroundings.
  - can interconvert chemical materials.
  - have DNA as the genetic material.
  - can interconvert forms of energy.
  - All of the choices are correct.
- Most organelles in a eukaryotic cell are found in the
  - cell wall
  - cytoplasm
  - nucleus
  - capsule
- A bacterial cell's DNA is found in its
  - capsule.
  - nucleoid region.
  - nucleus.
  - ribosomes.
  - Bacteria do not have DNA
- To enter or leave a cell, substances must pass through
  - a microtubule.
  - the Golgi apparatus.
  - a ribosome.
  - the nucleus.
  - the plasma membrane.

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8. Which of the following correctly matches an organelle with its function?

- a. mitochondrion . . . photosynthesis
- b. nucleus . . . cellular respiration
- c. ribosome . . . manufacture of lipids
- d. lysosome . . . movement
- e. central vacuole . . . storage

9. Of the following organelles, which group is involved in manufacturing substances needed by the cell?

- a. lysosome, vacuole, ribosome
- b. ribosome, rough ER, smooth ER
- c. vacuole, rough ER, smooth ER
- d. smooth ER, ribosome, vacuole
- e. rough ER, lysosome, vacuole

10) The nucleus of a cell A) is the region of the cell where ribosomes are degraded. B) contains DNA and controls cell activities C) is contained inside the nucleolus. D) is surrounded by a single layer of membrane.

**MITOSIS match the follow descriptions on the left with the terms from the Word Bank on the right.**

- a. The two chromatids of each chromosome are pulled apart by the microtubules attached to the kinetochore (= a specialized area of the centromere) in the direction of the opposite poles. Each single chromatid can be regarded as the new chromosome from now on.
- b. The two daughter cells become independent. This follows up the actual mitosis, the cytoplasm of the daughter cells is divided by a cell membrane In animal cells the separation of the new cells involves a cleavage furrow that pinches the cell membrane.
- c. Is the longest lasting stage of the cell cycle. Interphase is considered as the phase during which cells conduct their "normal" cellular functions, i.e. take up nutrients, grow, read DNA and produce proteins, and prepare themselves for the mitosis, in particular by replicating their DNA.
- d. This is the conclusion of nuclear division. The spindle disappears, the chromosomes despiralize, a new nuclear envelop is formed and the new nucleoli are visible
- e. the preparative phase. The chromosomes begin to spiralize and the nuclear membrane and nuclear bodies (nucleoli = place in the nucleus active in the synthesis of ribosomes) disappear. The centrosomes (consisting each of a pair of centrioles - only in animal cells) that have been duplicated during the G2-phase separate now. All chromosomes become visible and consist now of two chromatids that are joined together at the centomere.
- f. All chromosomes are completely spiralized and move to the middle of the cell. A spindle of microtubules (thread-like structures made of tubulin polymers) is formed from pole to pole (from the centrioles in animal cells) and from pole to centromere.

## Word Bank

- 1. **Prophase**
- 2. **Interphase**
- 3. **Metaphase**
- 4. **Anaphase**
- 5. **Telophase**
- 6. **Cytokinesis**

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## TISSUE

### Short Answer

1. A tissue is: \_\_\_\_\_

2. The four major tissue types are: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

### *True or False.*

3. \_\_\_\_\_ Epidermal tissue *covers body surfaces / lines hollow organs / forms glands?*

4. \_\_\_\_\_ The outside of blood vessels is lined with: cuboidal epithelium / squamous epithelium / transitional epithelium / columnar epithelium?

5. \_\_\_\_\_ Stratified epithelia *consist of several layers of cells*

6. \_\_\_\_\_ Transitional epithelium allows the *bladder to stretch.*

7. \_\_\_\_\_ The surface cells of keratinised stratified squamous epithelium are continually *being shed from the surface?*

8. \_\_\_\_\_ Cilia is NOT found in connective tissue?

9. \_\_\_\_\_ Cardiac Muscle has branched fibres, intercalated discs between adjacent cells and contracts automatically.

10. \_\_\_\_\_ Striated Voluntary Muscle has short fibers with cross bands and nuclei on the surface?

11. \_\_\_\_\_ Striated Voluntary Muscle moves bones and facial skin? *striated voluntary muscle*

12. \_\_\_\_\_ Smooth Involuntary Muscle is found in blood vessel walls, in the gut wall and in glands?

13. Ciliated epithelium is found in \_\_\_\_\_.

- A. tongue
- B. oesophagus
- C. trachea
- D. uterus

14. Which type of tissue forms glands?

- A. Epithelial
- B. Connective
- C. Nervous
- D. Muscle

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15. Which of the following tissues is composed of mainly dead cells?

- A. Phloem
- B. Epidermis
- C. Xylem
- D. Endodermis

16. Striated muscle is also called \_\_\_\_\_.

- A. cardiac muscle
- B. smooth muscle
- C. skeletal muscle
- D. involuntary muscle

**Match the tissue type with the appropriate term from the Word Bank**

<b>Tissue type</b>	<b>Function</b>
<b>17. Connective Tissue</b>	
<b>18. Muscle Tissue</b>	
<b>19. Epithelial Tissue</b>	
<b>20. Nervous Tissue</b>	

<b><u>Word Bank</u></b>
<b>A. Supporting and Communicating</b>
<b>B. Contracting</b>
<b>C. Communicating</b>
<b>D. Covering and Lining</b>