

## Cells and Tissues Study Questions

**Dr. J. Lim**

1. The study of cellular structure is called \_\_\_\_\_.
2. List the three main parts of an animal cell. \_\_\_\_\_
3. Some cells have no nucleus and others with more than one nucleus. True/False
4. These ribosome factories are found within a nucleus. \_\_\_\_\_
5. State the term that describes the construction of a plasma membrane. \_\_\_\_\_
6. What is an incomplete barrier? \_\_\_\_\_
7. Cytoplasm is the cellular contents between the \_\_\_\_\_ and \_\_\_\_\_.
8. The smooth ER has many functions. State three of them.
  
9. Ribosomes are most commonly found attached to the \_\_\_\_\_ or \_\_\_\_\_
10. Name the cellular organelle that provides strength, shape and transport pathways for a cell. \_\_\_\_\_
11. Which organelle looks like red licorice and helps in cell division. \_\_\_\_\_
12. The acid and enzymes of lysosomes are often used for \_\_\_\_\_.
13. The dissolved substance in a solution is called the \_\_\_\_\_.
14. Which of the following refers to the solution inside the cell?  
intracellular fluid/extracellular fluid/interstitial fluid
15. This membrane transport process is driven by a concentration gradient? \_\_\_\_\_
16. A red blood cell placed in a hypotonic solution will \_\_\_\_\_
17. Exocytosis is a type of \_\_\_\_\_ transport that requires the input of \_\_\_\_\_
18. Phagocytosis is a form of \_\_\_\_\_ transport called \_\_\_\_\_-cytosis.
19. Osmosis involves the movement of \_\_\_\_\_ across a membrane.
20. Describe the activity that occurs in a cell during interphase.
  
21. Division of the cytoplasm and organelles into two daughter cells is called \_\_\_\_\_.
22. Following mitosis, how many chromosomes does a cell have? \_\_\_\_\_
23. In early prophase, DNA \_\_\_\_\_ and \_\_\_\_\_ making them more visible.
24. At the metaphase plate, the chromatid pairs line up along the \_\_\_\_\_ of the cell and the spindle fibers attach to the \_\_\_\_\_ of each pair.
25. The onset of anaphase is marked by the splitting of the \_\_\_\_\_ and the beginning of the \_\_\_\_\_ to the poles of the cell.
26. A DNA segment copied to make a RNA molecule is called \_\_\_\_\_.
27. Name the body tissue that has no blood vessels and a free surface. \_\_\_\_\_
28. Which shape of epithelial cell is best suited for passive transport? \_\_\_\_\_
29. Sweat and salivary glands are examples of exo/endo –crine glands.
30. Blood, bone and cartilage are examples of which tissue type? \_\_\_\_\_
31. Which type of muscle tissue is spindle-shaped and involuntary? \_\_\_\_\_
32. Multiple nuclei are characteristic of \_\_\_\_\_ muscle.
33. Neural impulses travel away from the nerve cell body along this structure. \_\_\_\_\_

## Cells and Tissues Study Questions + KEY

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1. The study of cellular structure is called **cytology**.
2. List the three main parts of an animal cell. **nucleus, cytoplasm & plasma membrane**
3. Some cells have no nucleus and others with more than one nucleus. **True**
4. These ribosome factories are found within a nucleus. **nucleolus**
5. State the term that describes the construction of a PM. **Fluid mosaic model**
6. What is an incomplete barrier? **Selective permeability** (specific things allowed through)
7. Cytoplasm is the cellular contents between the **nucleus** and **plasma membrane**.
8. The smooth ER has many functions. State three of them.  
**Factory (ex: hormone production), Storage (ex: calcium storage), Metabolism (ex: breakdown of drugs)**
9. Ribosomes are most commonly found attached to the **rough ER** or **free in cytoplasm**.
10. Name the cellular organelle that provides strength, shape and transport pathways for a cell. **cytoskeleton**
11. Which organelle looks like red licorice and helps in cell division. **centrioles**
12. The acid and enzymes of lysosomes are often used for **defense & recycling parts**.
13. The dissolved substance in a solution is called the **solute**.
14. Which of the following refers to the solution inside the cell? **intracellular fluid**
15. This membrane transport process is driven by a concentration gradient?  
**Passive transport**
16. A red blood cell placed in a hypotonic solution will **expand and burst**.
17. Exocytosis is a type of **active** transport that requires the input of **ATP**
18. Phagocytosis is a form of **active** transport called **endocytosis**.
19. Osmosis involves the movement of **water** across a membrane.
20. Describe the activity that occurs in a cell during interphase.  
**High activity phase: DNA replication, make extra organelles**
21. Division of the cytoplasm and organelles into two daughter cells is called **cytokinesis**.
22. Following mitosis, how many chromosomes does a cell have? **46**
23. In early prophase, DNA **shortens** and **thickens** making them more visible.
24. At the metaphase plate, the chromatid pairs line up along the **equator** of the cell and the spindle fibers attach to the **centromere** of each pair.
25. The onset of anaphase is marked by the splitting of the **centromere** and the beginning of the **migration of chromosomes** to the poles of the cell.
26. A DNA segment copied to make a RNA molecule is called **transcription**.
27. Name the body tissue that has no blood vessels and a free surface. **epithelium**
28. Which shape of epithelial cell is best suited for passive transport? **squamous**
29. Sweat and salivary glands are examples of **exocrine** glands.
30. Blood, bone and cartilage are examples of which tissue type? **Connective tissue**
31. Which type of muscle tissue is spindle-shaped and involuntary? **Smooth muscle**
32. Multiple nuclei are characteristic of **skeletal** muscle.
33. Neural impulses travel away from the nerve cell body along this structure. **axon**