

Cell Function Practice

Name: _____

Date: _____

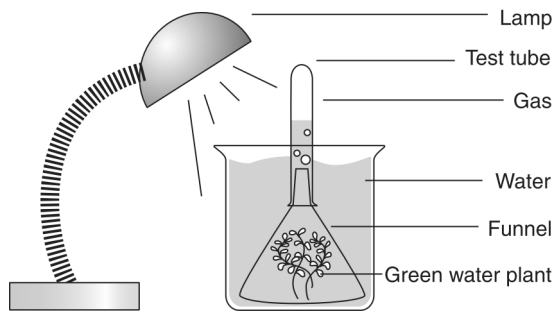
1. Which molecule supplies the energy for cellular functions?

- A. ATP
- B. oxygen
- C. DNA
- D. water

2. Which of the following gases do plants use in photosynthesis?

- A. hydrogen
- B. oxygen
- C. carbon dioxide
- D. carbon monoxide

3. **Photosynthesis Experiment**



Which gas is forming in the test tube shown above?

- A. carbon dioxide
- B. hydrogen
- C. oxygen
- D. nitrogen

4. Which molecule in plant cells first captures the radiant energy from sunlight?

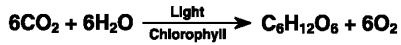
- A. glucose
- B. carbon dioxide
- C. chlorophyll
- D. adenosine triphosphate

5. From Earth's atmosphere, carbon dioxide is used by plants, algae, and cyanobacteria during the process of

- A. photosynthesis.
- B. respiration.
- C. decomposition.
- D. nitrogen fixation.

6. **Photosynthesis**

The following equation represents the process of photosynthesis in green plants.



(Carbon Dioxide + Water, in the Presence of Light and Chlorophyll → Sugar + Oxygen)

What happens to most of the light energy during photosynthesis?

- A. It is transformed into heat energy.
- B. It is transformed into chemical energy.
- C. It is changed into carbon dioxide.
- D. It is changed into oxygen.

7. In which part of a plant does photosynthesis take place?

- A. bark
- B. flowers
- C. leaves
- D. roots

8. Through cell respiration, plants get energy from glucose. The energy stored in glucose originally came from

- A. plants.
- B. animals.
- C. the sun.
- D. geothermal sources.

9. The process of cellular respiration occurs in

- A. both plant and animal cells.
- B. plant cells only.
- C. animal cells only.
- D. neither plant nor animal cells.

10. Use the diagram to answer the question.

Gases and Photosynthesis

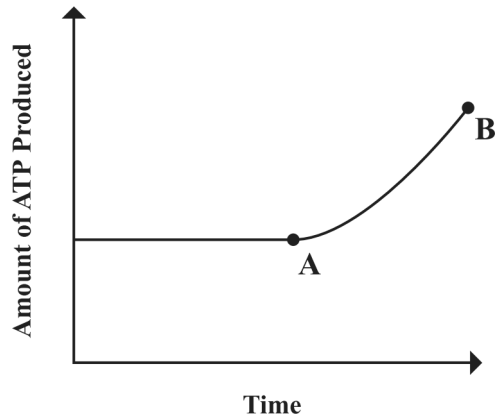


The diagram shows the gases that enter and leave a plant during the process of photosynthesis. Which gases do arrows 1 and 2 represent?

- A. Arrow 1 is nitrogen, and arrow 2 is oxygen.
- B. Arrow 1 is oxygen, and arrow 2 is nitrogen.
- C. Arrow 1 is oxygen, and arrow 2 is carbon dioxide.
- D. Arrow 1 is carbon dioxide, and arrow 2 is oxygen.

11. Which statement *best* describes the process of respiration?
- Oxygen and sugar are used in the process that provides energy to cells; water and carbon dioxide are its waste products.
 - Water and sugar are used in the process that provides energy to cells; oxygen and carbon dioxide are its waste products.
 - Oxygen and carbon dioxide are used in the process that provides energy to cells; sugar and water are its waste products.
 - Carbon dioxide and sugar are used in the process that provides energy to cells; water and oxygen are its waste products.

12. The graph below shows the amount of ATP produced in a cell during a period of time.



According to the graph, which of the following processes *must* have increased between points A and B?

- cellular respiration
- cytokinesis
- DNA replication
- meiosis

13. In which of the following ways does the respiratory system help to maintain homeostasis during exercise?

- Reserves of oxygen are built up in the alveoli.
- The pharynx supplies glucose so that the muscles can produce ATP.
- Breathing rate is increased to exchange oxygen and carbon dioxide more rapidly.
- The lungs release hemoglobin so that the blood can carry more oxygen to tissues.

14. Which of these *best* describes the process of chemosynthesis?

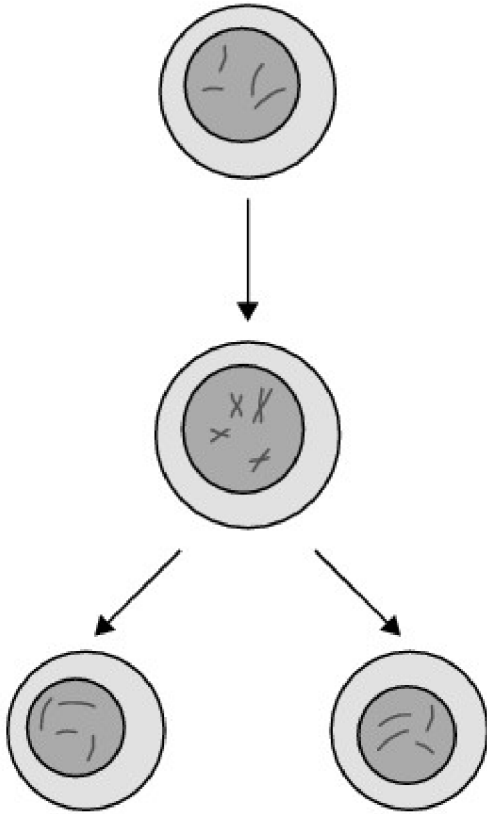
- DNA molecules are formed.
- Cell membranes are constructed.
- Food is produced using energy from inorganic compounds.
- Food is produced using energy from light.

15. Which of the following produces identical nuclei in cells?

- pollination
- mitosis
- osmosis
- fertilization

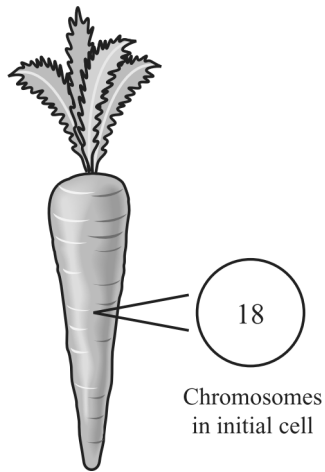
16. The diagram shows a cellular process.

How is this process used in the bodies of male animals?

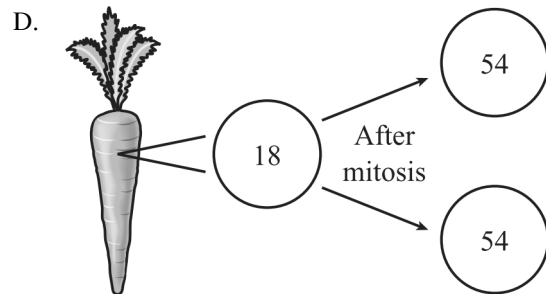
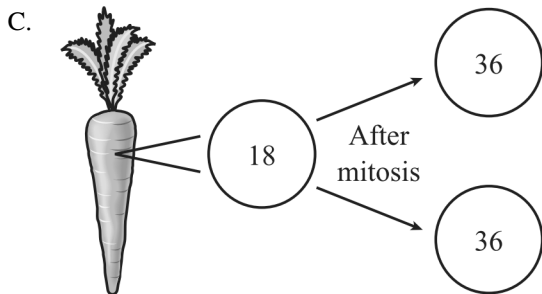
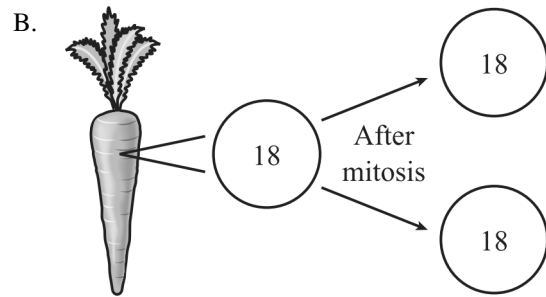
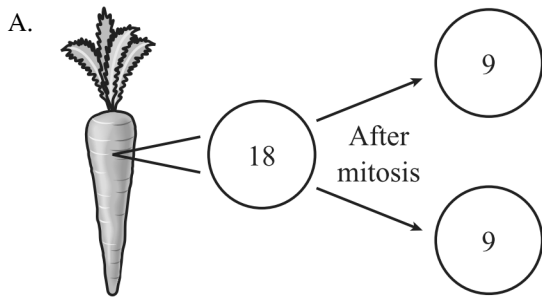


- A. To produce sperm cells
- B. To produce DNA sequences
- C. To produce white blood cells
- D. To produce digestive enzymes

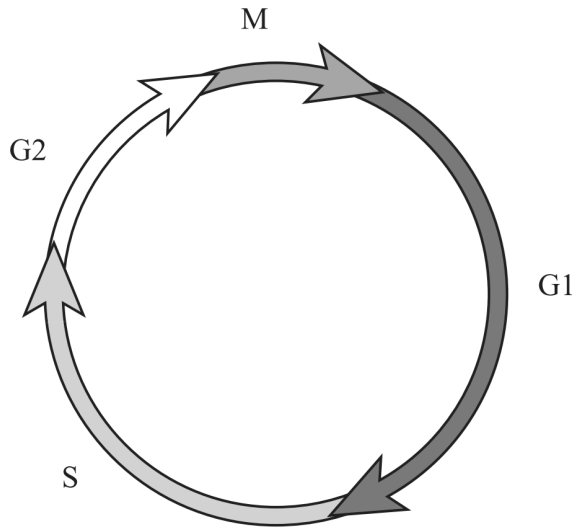
17. The diagram below provides information about a carrot cell.



A carrot cell contains 18 chromosomes. Which of the following diagrams illustrates the correct number of chromosomes in new cells produced by mitosis?



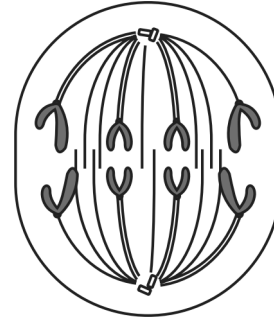
18. The diagram below shows the cell cycle.



Which of the following activities occurs in the G1 phase?

- A. growth of the cell
- B. replication of the DNA
- C. formation of the mitotic spindle
- D. breakdown of the nuclear membrane

19. The illustration below shows a phase of mitosis



Which of the following statements describes what is occurring in this phase?

- A. The chromosomes are duplicating their DNA.
- B. The copies of each chromosome are separating.
- C. The chromosomes are moving toward the center of the cell.
- D. The homologous chromosomes are preparing for crossing over.

20. As humans grow, their bodies change.

Which of these statements explains how humans grow?

- A. Cells form a cell wall.
- B. Cells increase in size.
- C. Cells undergo cell division.
- D. Cells merge to become larger.

21.

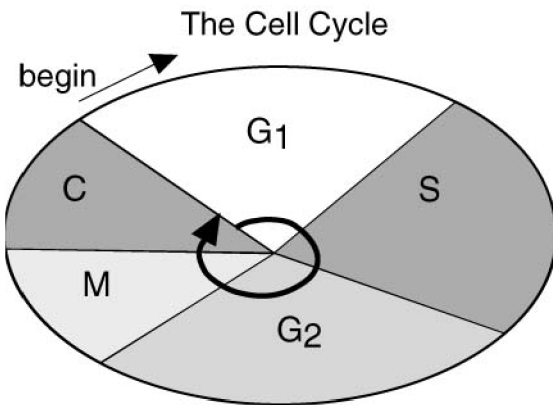
Lab Notes

- Chromatids have been separated
- The cytoplasm is separating
- A visible line is forming between sets of chromatids

Which phase of mitosis is being described in the lab notes shown above?

- A. Telophase B. Anaphase
C. Metaphase D. Prophase

22.



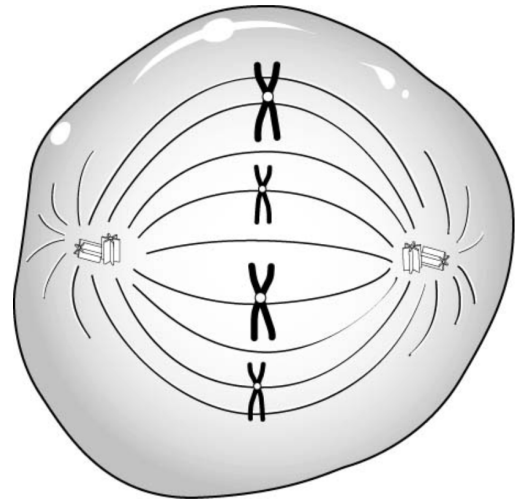
The stages of cell division called prophase, metaphase, anaphase, and telophase occur during which stage of the cell cycle shown in the diagram above?

- A. G₁ B. S C. M D. C

23. Chromosomes are most easily seen during cell division because the chromosomes—

- A. double in number.
B. shorten and thicken.
C. move and expand.
D. match up with other chromosomes.

24.

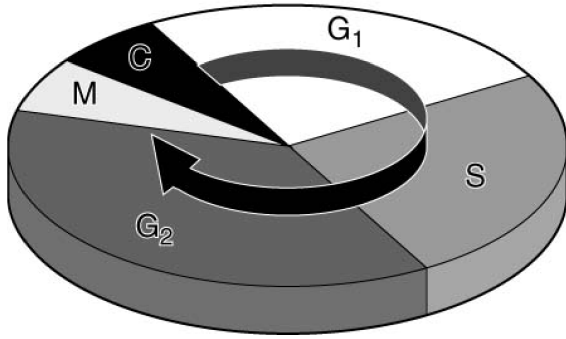


What phase of mitosis is represented by the diagram shown above?

- A. Metaphase B. Prophase
C. Telophase D. Interphase

25.

The Cell Cycle



G₁ Phase, S Phase, and G₂ Phase are all parts of—

- A. Interphase.
- B. Anaphase.
- C. Prophase.
- D. Telophase.

26. Which phase of the cell cycle ensures that identical copies of the parent cell DNA are made for the daughter cells?

- A. Gap 1 (G₁)
- B. Gap 2 (G₂)
- C. Mitosis (M)
- D. Synthesis (S)

27. During which phase of mitosis do the sister chromatids separate and move toward opposite poles of the cell?

- A. Anaphase
- B. Metaphase
- C. Prophase
- D. Telophase

28. What process *best* explains how a nerve cell and a muscle cell can both develop from the same fertilized egg?

- A. differentiation
- B. natural selection
- C. selective breeding
- D. genetic engineering

29. How can two plant cells from the same plant have different structures and functions?

- A. Genes do not control the structure and function of a plant cell.
- B. Sexual reproduction provides for genetic variation in plant cells.
- C. Certain genes are turned on in one cell and turned off in the other cell.
- D. Different cells in the plant have different DNA.

Cell Function Practice 05/18/2015

1.
Answer: A
2.
Answer: C
3.
Answer: C
4.
Answer: C
5.
Answer: A
6.
Answer: B
7.
Answer: C
8.
Answer: C
9.
Answer: A
10.
Answer: D
11.
Answer: A
12.
Answer: A
13.
Answer: C
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Answer: C
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Answer: B
16.
Answer: C
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Answer: B
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Answer: A
19.
Answer: B
20.
Answer: C

21.
Answer: A
22.
Answer: C
23.
Answer: B
24.
Answer: A
25.
Answer: A
26.
Answer: D
27.
Answer: A
28.
Answer: A
29.
Answer: C