

GCS Grade 7 Science Second 9 week Benchmark

1. Why does air pressure decrease from the troposphere to the exosphere?

- A. because there are fewer air molecules as altitude increases
- B. because there are more air molecules as altitude increases
- C. because there are higher temperatures as altitude increases
- D. because there are lower temperatures as altitude increases

2. How does the temperature of the stratosphere compare to that of the mesosphere?

- A. It is colder than the mesosphere because the stratosphere contains the ozone layer.
- B. It is warmer than the mesosphere because the stratosphere contains the ozone layer.
- C. It is colder than the mesosphere because the stratosphere contains the ionosphere.
- D. It is warmer than the mesosphere because the stratosphere contains the ionosphere.

3. How does the convection of air produce thunderstorms?

- A. by causing warm air to sink and cold air to rise
- B. by causing warm air to rise and cold air to sink
- C. by causing both warm air and cold air to rise
- D. by causing both warm air and cold air to sink

4. Which best explains how the Coriolis effect influences weather conditions?

- A. It causes winds to rotate, forming tornadoes on Earth.
- B. It causes winds to move to the right in the southern hemisphere.
- C. It causes winds to turn to the right in the northern hemisphere.
- D. It causes winds to follow a straight-line path around Earth.

5. Why is it important for the United States to monitor air pollution levels in other countries?

- A. Air pollution can improve the ozone layer amounts in the atmosphere.
- B. Air pollution can travel to the United States and affect people's health.
- C. The United States is the only country able to monitor the air quality.
- D. The United States has clean air and is able to help other countries.

6. Which function can be performed by a euglena but not by a paramecium?

- a. digestion
- b. movement
- c. photosynthesis
- d. reproduction

7. Which protist moves by "false feet"?

- a. amoeba
- b. euglena
- c. paramecium
- d. volvox

8. Which cellular structures look like many little hairs and are responsible for the movement of some protists?

- a. cilia
- b. flagella
- c. pseudopodia
- d. vacuoles

9. Which protist gets food by using small, hair-like threads to sweep particles into a small cavity?

- A. amoeba
- B. euglena
- C. paramecium
- D. volvox

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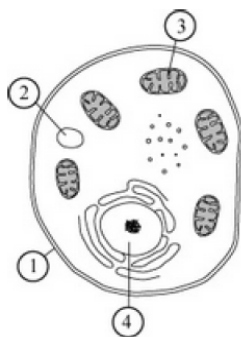
10. Which protist is known for its ability to rotate in large, connected groups?

- A. amoeba
- B. euglena
- C. paramecium
- D. volvox

11. Which is a function of cytoplasm in both plant and animal cells?

- A. creating energy
- B. directing cellular activity
- C. disposing of cellular waste
- D. providing support for organelles

12. The diagram below shows an animal cell. Which structure controls what enters and exits the cell?



- A. 1
- B. 2
- C. 3
- D. 4

13. How can a scientist determine if he is viewing a plant or animal cell?

- A. determine if the cell has a nucleus
- B. determine if the cell has a cell wall
- C. determine if the cell has mitochondria
- D. determine if the cell has a cell membrane

14. Which is the basic unit of life?

- A. cell
- B. membrane
- C. nucleus
- D. organelle

15. Which statement best explains the importance of reproduction involving two parents?

- A. The offspring inherit recessive genes from each parent.
- B. There is increased variation of traits among the offspring.
- C. The offspring can only inherit abnormal genetic conditions from one parent.
- D. The dominant genes inherited from one parent are hidden by recessive genes from the other parent.

16. Which is a correct statement about the role of each parent in the transfer of genetic traits?

- A. Males contribute both alleles for each genetic trait.
- B. Females contribute both alleles for each genetic trait.
- C. Each parent contributes one allele for each genetic trait.
- D. Females contribute only recessive alleles for each genetic trait.

17. In a genetics investigation, students used two red straws to represent male parent DNA. They used two green straws to represent female parent DNA. How should the offspring be represented?

- A. two red straws
- B. two green straws
- C. one red straw and one green straw
- D. either one red straw or one green straw

18. The chart below shows the recorded temperatures in a city for several days at the same time.

Four-Day Temperature Recordings at 3:00 p.m.

Day	Temperature (°F)
Thursday	59
Friday	63
Saturday	72
Sunday	64

On which day could the air have held the greatest amount of water vapor at 3:00 p.m.?

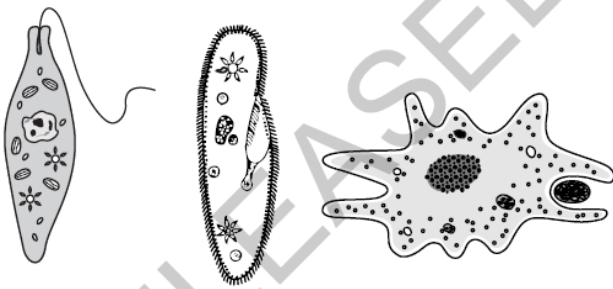
- A. Thursday
- B. Friday
- C. Saturday
- D. Sunday

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19. Which is a correct statement about sexual reproduction?

- A. It eliminates mutations.
- B. It involves one organism.
- C. It allows for variation among offspring.
- D. It produces an exact copy of one parent.

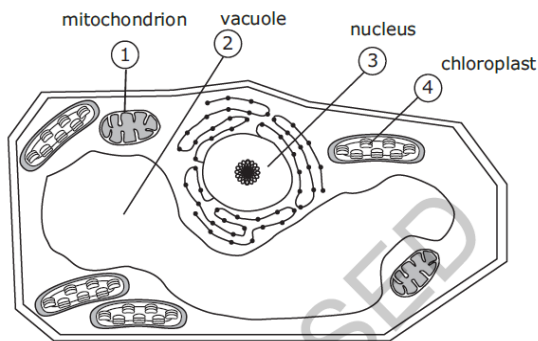
20. The illustrations below are of a euglena, a paramecium, and an amoeba.



How do these organisms compare?

- A. They use different structures for movement.
- B. They use different structures to control cell activity.
- C. They all make their own food by photosynthesis.
- D. They all have eyespots to sense sunlight.

21. This is a diagram of a plant cell.



Which organelle is used to transfer energy and can also be found in an animal cell?

- A. 1
- B. 2
- C. 3
- D. 4

22. The cell membrane is unable to work properly. How could this affect plant and animal cells?

- A. It could affect their ability to absorb sunlight.
- B. It could affect their ability to make proteins.
- C. It could affect their ability to store water.
- D. It could affect their ability to remove waste.

23. A scientist noticed that all of the offspring of the yeast fungus are identical to the parent. However, the offspring of a cat all look different. What most likely caused this to occur?

- A. Yeast produced offspring through asexual reproduction, while the cat produced offspring through sexual reproduction.
- B. Yeast produced offspring through sexual reproduction, while the cat produced offspring through asexual reproduction.
- C. Both yeast and the cat produced offspring through asexual reproduction.
- D. Both yeast and the cat produced offspring through sexual reproduction.

24. How does mitosis compare to meiosis?

- A. Mitosis produces two identical daughter cells, while meiosis produces sex cells with half the genetic information.
- B. Mitosis produces sex cells with half the genetic information, while meiosis produces two identical daughter cells.
- C. Mitosis only occurs in single-celled organisms, while meiosis only occurs in animals.
- D. Mitosis only occurs in animals, while meiosis only occurs in single-celled organisms.

25. A mating between two black dogs produced six offspring. Each of the six offspring looks different from the parent dogs and the other offspring. Which best explains this?

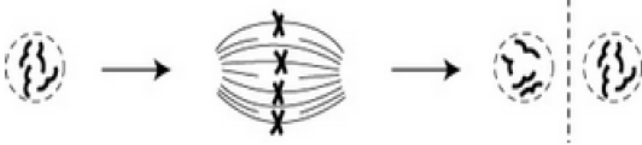
- A. Mutations occurred causing each dog's appearance to be different.
- B. Each dog inherited different genetic information from the parent dogs.
- C. Environmental factors selected the traits to be displayed by each of the offspring.
- D. The genetic information from the parent dogs was evenly divided among the offspring.

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26. Which is proof of a cell being a eukaryotic cell?
- the presence of DNA
 - the presence of a nucleus
 - the presence of cytoplasm
 - the presence of a cell wall

27. A genetic disease is present in a grandfather and in a grandson, but the father shows no signs of the disease. Which is the best explanation for this?
- The father was not exposed to the disease.
 - The father is healthier than the grandfather.
 - The disease only develops in senior citizens.
 - The disease was passed through a recessive gene.

28. Which process is shown in the plant cell below?



- cell growth
 - metamorphosis
 - photosynthesis
 - cell reproduction
29. If a yellow pea plant (Yy) is crossed with a green pea plant (yy), what are all the possible genotypes of the resulting offspring?
- yy only
 - YY only
 - yy and Yy
 - Yy and YY

30. In garden peas, yellow seeds are dominant to green seeds. The Punnett square below shows a cross between two pea plants.

	Y	y
y	Yy	yy
y	Yy	yy

- Which percentage of the offspring would be expected to produce yellow seeds?
- 0%
 - 25%
 - 50%
 - 100%

31. The Punnett square below shows the genotypes of two organisms with dimples that will be crossed.

	D	d
D		
d		

- Which can best be concluded from this information?
- None of the offspring should have dimples.
 - 25% of the offspring should have dimples.
 - 75% of the offspring should have dimples.
 - All of the offspring should have dimples.

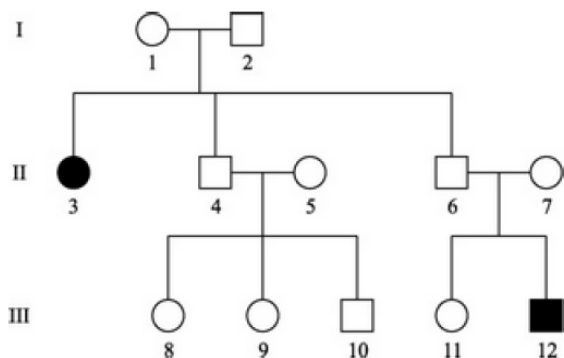
32. To best determine which characteristics of a person are formed by environmental factors rather than genetic factors, scientists would study which group?
- siblings growing up together
 - identical twins growing up together
 - siblings living apart from each other
 - identical twins living apart from each other

33. How are hereditary diseases different from other types of diseases?
- Hereditary diseases are viral diseases.
 - Hereditary diseases are infectious diseases.
 - Hereditary diseases are bacterial infections.
 - Hereditary diseases are passed through genes.

34. According to the theory of natural selection, a species that lacks the variations necessary to adapt to a changing environment will most likely
- become dormant
 - mutate
 - become extinct
 - fossilize

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35. The diagram shows the pedigree for cystic fibrosis in three generations of a family.



Which describes individual III-12?

- A. a normal male
- B. a normal female
- C. a male with cystic fibrosis
- D. a female with cystic fibrosis

36. Why was the invention of the light microscope helpful to scientists?

- A. The microscope helped people focus light
- B. The microscope made it possible for people learn about cells
- C. The microscope helped scientists understand how to use lenses.
- D. The microscope helped learn about atoms

37. Which organelle controls all cell activities and contains the genetic material?

- A. Mitochondria
- B. Nucleus
- C. Cell membrane
- D. Chloroplast

38. Which organelle is responsible for transporting materials through the cell?

- A. Nucleus
- B. Ribosomes
- C. Endoplasmic Reticulum
- D. Golgi Apparatus

39. Which organelle acts as the packaging area?

- A. Nucleus
- B. Ribosomes
- C. Endoplasmic Reticulum
- D. Golgi Apparatus

40. All of the following are a part of cell theory EXCEPT:

- A. All living things are made of cells.
- B. Cells cannot reproduce.
- C. Cells come from other cells.
- D. Cells are the basic unit of life.

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Question	Answer Key	Standard
1.	A	7.E.1
2	B	7.E.1
3	B	7.E.1
4	C	7.E.1
5	B	7.E.1
6	C	7.L.1
7	A	7.L.1
8	A	7.L.1
9	C	7.L.1
10	D	7.L.1
11	D	7.L.1
12	A	7.L.1
13	B	7.L.1
14	A	7.L.2
15	B	7.L.2
16	C	7.L.2
17	C	7.L.2
18	C	7.E.1
19	C	7.L.2
20	A	7.L.1
21	A	7.L.1
22	D	7.L.1
23	A	7.L.2
24	A	7.L.2
25	B	7.L.2
26	B	7.L.1
27	D	7.L.2
28	D	7.L.2
29	C	7.L.2
30	C	7.L.2
31	C	7.L.2
32	D	7.L.2
33	D	7.L.2
34	C	7.L.2
35	C	7.L.2
36	B	7.L.1
37	B	7.L.1
38	C	7.L.1
39	D	7.L.1
40	B	7.L.1