

ORANGE PUBLIC SCHOOLS
OFFICE OF CURRICULUM AND INSTRUCTION
OFFICE OF SCIENCE

GRADE 7 SCIENCE

Post-Assessment Answer Key and Scoring Guide



School Year 2013-2014

SGO Post-Assessment – Grade 7 KEY – 44 pts total**Multiple Choice – 1 pt ea**

Identify the choice that best completes the statement or answers the question and write the letter of the correct answer in the blank provided.

- D 1. When pouring juice for your family, you give 1 pint to each person. What scientific measurement are you making?
- a. Area
 - b. Mass
 - c. Temperature
 - d. Volume
- A 2. A hypothesis:
- a. may be correct, partially correct, or incorrect.
 - b. is always wrong.
 - c. is always right.
 - d. should be a random guess.

Read the following statements to answer question 3.

Jessica discovered that a piece of bread left in a sandwich bag had developed a black mold-like substance growing on its surface. She decided to investigate the factors affecting mold growth. Answer the following question about Jessica's discovery.

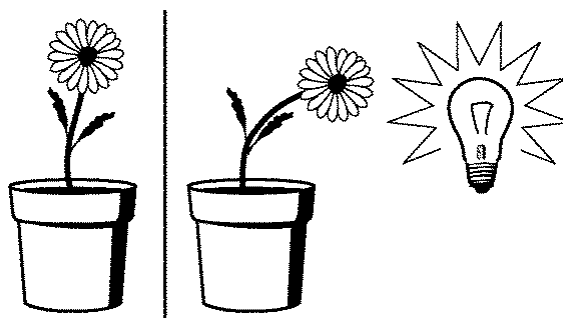
- C 3. In Jessica's bread mold experiment, she used the same brand of bread and sandwich bags. She placed the sealed bags in places that had varying temperatures. What are her control variables?
- a. temperature.
 - b. mold.
 - c. same brand of bread and sandwich bags .
 - d. different brands of breads and sandwich bags.
- C 4. Which of the following is an organ system?
- a. Intestine
 - b. Heart
 - c. Circulatory
 - d. Pancreas

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Figure 2-1A – *Reference the figure below to answer question 5*



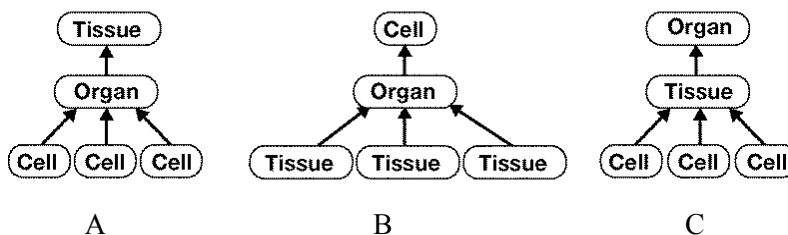
As part of an experiment, a light source is placed next to a plant. After a few days, David notices the plant growing toward the light.

B 5. David noted the **plant's growth** towards the light in Figure 2-1A as a:

- a. stimulus.
- b. response.
- c. growth.
- d. defense.

C 6. The heart, brain, and stomach are made up of groups of:

- a. organelles
- b. organ systems.
- c. tissues.
- d. blood.



C 7. Which diagram shows the correct **levels of organization** in a multicellular organism?

- a. A
- b. B
- c. C
- d. None of the above

A 8. Only organisms who are of the same _____ can reproduce with one another.

- a. species.
- b. family.
- c. cell.
- d. kingdom.

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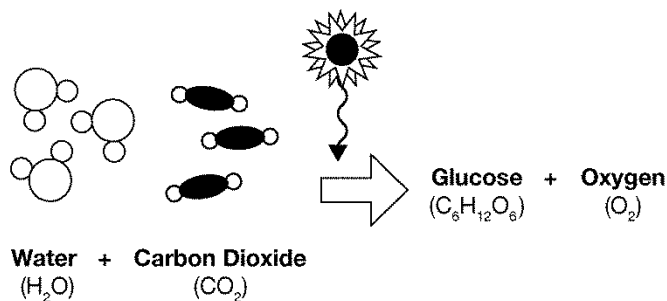
 B 9. The simplest form of matter is known as a(n) _____.

- a. cell
- b. atom
- c. molecule
- d. compound

 B 10. _____ are substances that include sugars and starches.

- a. lipids
- b. carbohydrates
- c. compound
- d. water

Figure 4-1A - Reference the figure below to answer questions 11 and 12



 B 11. Figure 4-1A shows a chemical reaction. In this chemical reaction, water is:

- a. a product.
- b. a reactant.
- c. a form of energy.
- d. a lipid.

 D 12. A drop of water moves from place to place on Earth through:

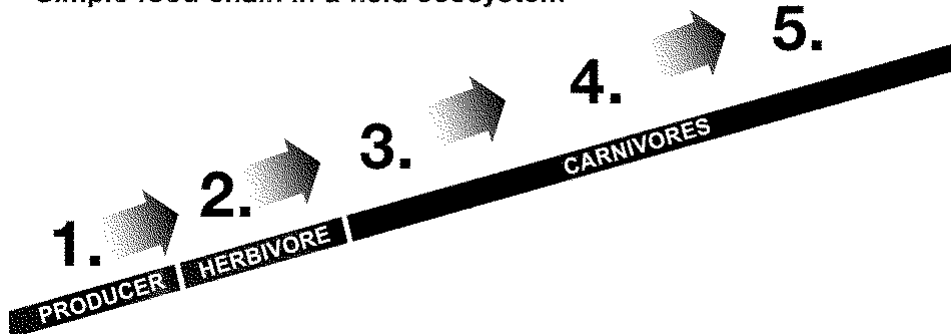
- a. the precipitation cycle.
- b. the monsoon cycle.
- c. the weather cycle.
- d. the water cycle.

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Simple food chain in a field ecosystem



Match the following living things with their place in the food chain.

- a. grasshopper
- b. snake
- c. grass

- C 13. Producer
- A 14. Herbivore
- B 15. Carnivore

A 16. Robert Hooke noticed what looked like tiny boxes when he looked at a sample of cork under a microscope. He called his discovery _____.

- a. cells.
- b. rooms.
- c. microscopic.
- d. cardboard



D 17. Examples of eukaryotic cells are:

- a. bacterial cells
- b. virus cells
- c. cytoplasm
- d. plant cells

C 18. Which of the following statements is NOT part of the **cell theory**?

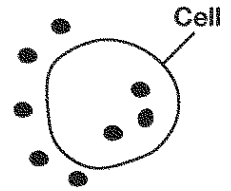
- a. New cells come only from existing cells.
- b. The basic unit of structure and function in an organism are cells.
- c. All cells are identical.
- d. All living things are made up of one or more cells.

C 19. Molecules move against the gradient from lower to higher concentrations during:

- a. diffusion.
- b. osmosis.
- c. active transport.
- d. protein transport.

C 20. In the diagram, the molecules will:

- a. move out of the cell.
- b. move around outside of the cell but never enter the cell.
- c. move into the cell.
- d. stay where they are.



● = Water molecules

B 21. The cell cycle describes the process where cells:

- a. are born and eventually die.
- b. increase their numbers by dividing into identical cell.
- c. increase their numbers by dividing into different cells.
- d. do not increase in number.

C 22. Siblings look different even though they come from the same two parents. This is because:

- a. All their traits come from their father
- b. All their traits come from their mother
- c. Mother and father's traits combine in different ways with each child
- d. Mother and father's traits combine exactly the same with each child

B 23. As the levels of classification move towards species, organisms share _____ characteristics.

- a. less
- b. more
- c. the same
- d. none of the above

C 24. DNA, made up of nucleotides, is responsible for:

- a. providing food for the cell
- b. transporting water
- c. genetic coding of traits
- d. digestion

A 25. A group of living things and their physical surroundings is called a(n):

- a. ecosystem.
- b. biosphere.
- c. community.
- d. population.

B 26. Organelles are found in the _____ of a cell.

- a. outside of
- b. cytoplasm
- c. membrane
- d. nucleus

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D 27. Cell walls are found in _____ cells.

- a. animal.
- b. plant.
- c. bacteria.
- d. both B and C.

A 28. Different forms of the same genes are expressed as:

- a. different traits
- b. same traits
- c. death
- d. identical twins

Refer to the picture to answer question 29.

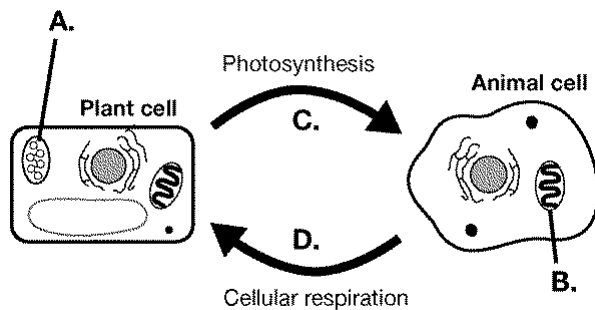


Figure 8-2A

A 29. What product(s) of photosynthesis is part of C in Figure 8-2A?

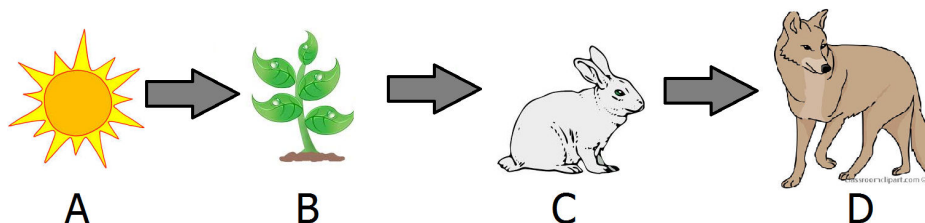
- a. Sugar and oxygen
- b. Carbon dioxide and water
- c. Sunlight
- d. Oxygen and carbon dioxide

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Short Answer – Answer each question in the space provided. Write legibly and in complete sentences taking care to use proper sentence structure. Address each aspect of the question in your answer



30. **EXPLAIN** what would happen in the ecosystem if C was removed from the food chain. **2 pts**

Responses will vary. Responses should include mention of organism D dying out or reducing in population and/or organism B increasing in population.

Code	If the student...
2	indicates that organism D's population will reduce and organism B's population will increase
1	Indicates that organism D's population will reduce or organism B's population will increase
0	Does not attempt or provides unrelated answer.

Essay - Answer each question in the space provided. Write legibly and in complete sentences taking care to use proper sentence structure. Address each aspect of the question in your answer.

31. **DESIGN** an experiment to test the effect of different amounts of water on plant growth. Be sure that your experiment follows the scientific method. You may include a diagram if you wish. **3 pts**

Code	If the student...
3	Designs experiment with reasonable control variables, experimental variables, that fully addresses the scientific method.
2	Designs experiment with reasonable variables, but shows confusion on the scientific method
1	Designs experiment with variables, but is confused on types of variables, and does not fully address the scientific method.
0	Does not attempt, or response does not address correct task.

32. What is the experimental variable? **1 pt**

Amount of water

33. What are your control variables? **2 pts**

Responses will vary but should include some of the following: same type of plant, same pot, same amount of soil, same location, same light conditions, etc.

28.

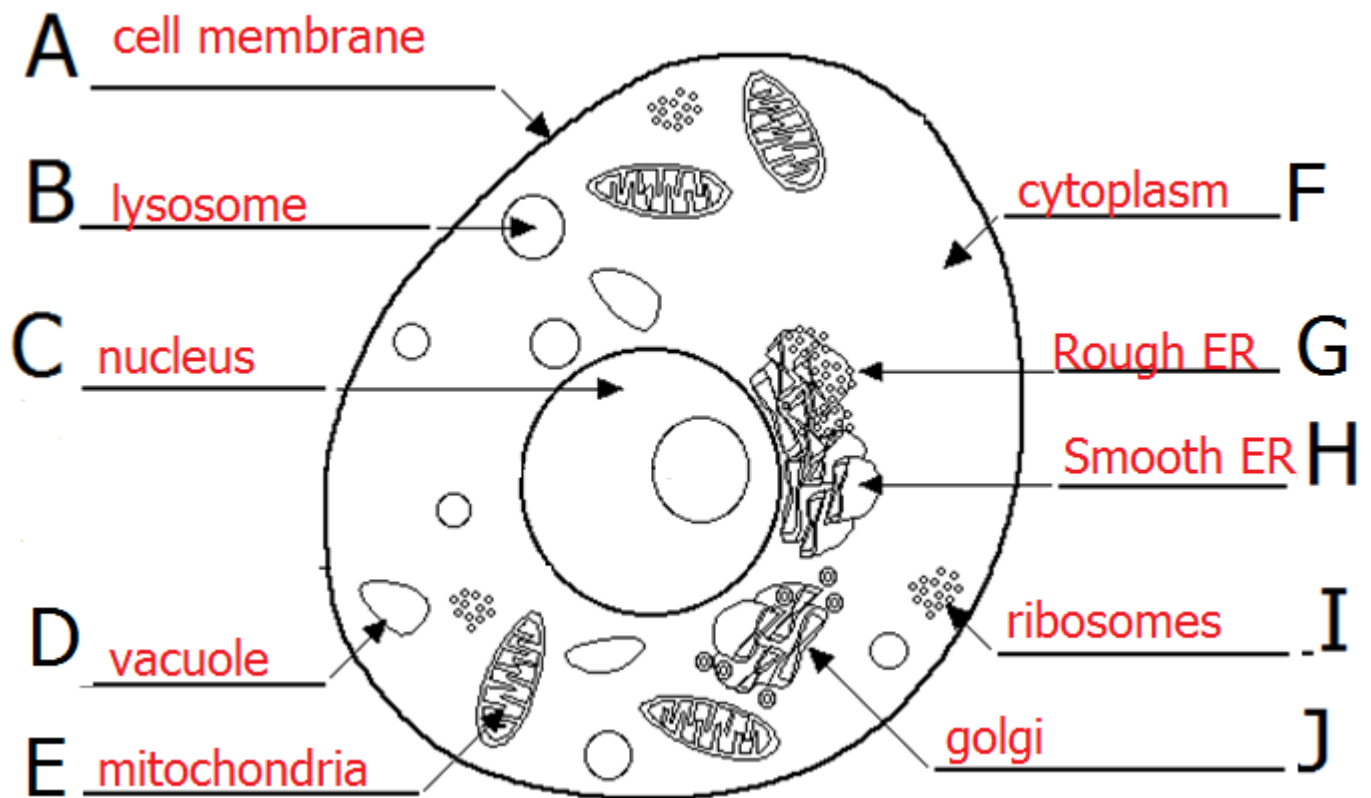
Code	If student...
2	Lists all potential controls
1	Lists 1 or 2 controls
0	Does not attempt or answer is irrelevant.

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34. Below is a diagram of an animal cell. Label the cell organelles. **0.5 pts ea – 5 pts**



35. Choose 4 organelles and describe their function in the cell. **0.5 pt for each function; 2 pts**

Responses will vary.

Cell membrane	Barrier for cell
Lysosome	Breaks down food
Nucleus	Contains DNA, controls cell
Vacuole	Storage
Mitochondria	Creates energy for cell
Cytoplasm	Substrate where organelles are found
Endoplasmic reticulum	Passageways for materials
Ribosomes	Make proteins
Golgi	Packages and transports materials