Name:_____ Date:_____

# 7th Grade Term 4 Review

1) Why are microscopes so important in classifying living organisms?

A. Because without microscopes, we would not be able to classify living organisms.
B. Because microscopes are very easy to use.
C. Because powerful microscopes have only been in use for a few years.
D. Because the structures of very small organisms cannot be seen with the naked eye.

2) Which key, A or B, has been built correctly to classify leaves?

Examine the following two keys.

**KEY A**

| | |
|---|---|
| 1. Leaves are opposite | go to 2 |
| Leaves are alternate | go to 3 |
| 2. Leaves are lobed | Red Oak |
| Leaves are compound | Green Ash |
| 3. Leaves are toothed | go to 4 |
| Leaves are smooth | Cottonwood |
| 4. Leaves are oblong | American Birch |
| Leaves are triangular | Gray Birch |

**KEY B**

| | |
|---|---|
| 1. Leaves are compound | Green Ash |
| Leaves are simple | go to 2 |
| 2. Leaves are toothed | go to 3 |
| Leaves are smooth | go to 4 |
| 3. Leaves are oblong | American Birch |
| Leaves are triangular | Gray Birch |
| 4. Leaves are lobed | Red Oak |
| Leaves are not lobed | Cottonwood |

A. Key A is built correctly because it uses the terms "opposite" and "alternate".
B. Key B is built correctly because it uses some characteristics that key A is missing.
C. Both keys will work because there are many ways to sort things.
D. Key B is NOT built correctly because on step 4 it uses "lobed" and "not lobed".

3) 2,500 years ago Aristotle, a Greek philosopher, classified organisms based on where they lived. Our classification systems today primarily use observable, physical traits to classify organisms. Why was Aristotle's system accepted and used then, but is not accepted now?

A. Scientific ideas do not last more than 100 years; they are replaced when they get old.
B. Current classification systems have been proven and finalized by scientists, whereas Aristotle's system was not.
C. Aristotle used the best data available at the time to create his system, but now the science has collected new data.
D. There were not as many species in Aristotle's time so the classification system didn't need to be as complex current systems.

4) A scientist studies two different groups of ants that are classified as one species. She concludes that each group should actually be classified as its own species. How does the scientist show that hers is a valid conclusion?

A. The scientist must document that she spent a lot of time on the problem.
B. The scientist must have at least 10 other scientists who feel the same way she does.
C. The scientist must have observable evidence to change the organisms' classification.
D. The scientist is wrong. An organism's classification can't be changed anymore.

5) Some scientists disagree on whether viruses are considered living or non-living. Which of the following supports the conclusion that viruses are living?

A. viruses need and use energy
B. viruses grow and develop
C. viruses are not made of cells
D. viruses pass on genetic material

6) When plants bend toward light, they are carrying out a life activity called

A. excretion
B. nutrition
C. energy getting
D. response

7) Which of the following is an example of an organism?

A. a lettuce leaf
B. a maple tree
C. steel
D. wood

8) Look at the diagram: Why is this kind of key helpful in classifying organisms?

A. The user examines one characteristic at a time and is presented with two choice
B. The user can see and choose between all possible organisms at once.
C. This kind of key contains all the characteristics about the organisms in the key.
D. This kind of key contains words easy to understand and very few technical term

1. _____a (go to 2)
   _____b (go to 3)
2. _____c
   _____d
3. _____e
   _____f

9) A horse growing thicker hair in the winter is an example of

A. movement
B. growth
C. response
D. energy conservation

10) Why is the ability to observe carefully important in scientific classification?

A. Because organisms are classified based mainly on structure.
B. Because our classification system changed when the telescope was invented.
C. Because most people can see better than they can hear or feel.
D. Because nowadays scientists have so many technological tools to use.

11) Which of these would be the best example of living organisms?

A. bat, owl, barn wood, dirt
B. rock, deer, spider, dandelion
C. oak tree, squirrel, apple, person
D. water, bacteria, firewood, mouse
E. bird, grass, flower, automobile

12) Scientists have been trying to decide if viruses are living or non-living. They know that viruses are very small, cause disease, replicate inside other living cells, but do not grow. How has technology helped scientists gain information about viruses?

A. Sonar allows scientists to hear and detect viruses.
B. Laser beams are used to find viruses in infected cells.
C. Powerful microscopes allow scientists to see viruses.
D. New medicines have allowed doctors to eliminate all viruses.

13) Why is a frog considered a living organism and a computer is not?

A. A frog reproduces and a computer cannot reproduce.
B. A computer is much smarter than a frog.
C. A frog can move and a computer can't, though a computer can respond quickly.
D. Frogs croak and only living things make sounds.

14) Which group contains examples of materials that were *NOT* part of a living thing?

A. water, sugar, salt, pepper
B. onion, water, celery, milk
C. milk, rubber, iron, copper
D. steel, glass, ink, cement

15) A process that a lizard can carry out but an automobile cannot is:

A. getting rid of wastes
B. movement
C. oxidation
D. self repair

16) Adelaide and her friends were looking for snakes. When a friend bent over to pick up a snake, it bit her on the hand. Adelaide used a classification key in her reptile field guide to identify the snake and find out if it was poisonous. Which statement does this demonstrate?

A. Using a classification key can help anyone, not just scientists.
B. Using a classification key is too difficult; they cannot identify the snake.
C. Only a scientist should attempt to identify the snake.
D. Classification keys contain all the known information about an organism.

17) Which of the following would be best to use when classifying plants?

A. Size of leaves because it is easy to observe and measure leaf size.
B. Color of leaves because most leaves are green and any other color is easily observed.
C. The type of insects found on the leaves because certain kinds of insects eat leaves.
D. The edge, or margin, of the leaves because this is an observable genetic trait.

18) Which of the following characteristics would be appropriately used in developing a classification key for birds?

A. where the bird was seen
B. how plentiful that bird is in your neighborhood
C. what food the bird eats
D. color markings on the bird's head

19) Which would be the best example of organisms that have been classified by similarity in structure?

A. dog, fox, coyote
B. bear, rabbit, coyote
C. cat, horse, dog
D. antelope, deer, rabbit

20) In the scientific name of a dog, *Canis familiaris*, the name *Canis* is the name of the dog's _____.

A. family
B. genus
C. kingdom
D. species

21) Which of these organisms would seem to be most closely related?

1. *Canis familiaris* 2. *Mephitis mephitis* 3. *Canis lupus* 4. *Panthera pardus*

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

22) Three groups of students classified ten leaves found on the school ground: Group A classified the leaves based on their shape, Group B classified the leaves based on the margins (edges) of the leaves, and Group C classified the leaves based on the pattern of the leaf veins. Why were all three ways of classifying the leaves correct?

A. Because it doesn't really matter how the leaves were classified as long as the students all worked together and finished
B. They are all correct because all three groups classified all 10 leaves.
C. The important thing was that all three groups drew neat pictures of their leaves.
D. All three groups used leaf structures that remain the same for all leaves of one kind.

23) Which characteristics would be appropriately used in developing a classification key for leaves?

A. the size of the leaves
B. the color of the leaves
C. the number of leaves on the stem
D. the edges of the leaves

24) The ability to classify and name organisms has allowed scientists to communicate their findings with each other and study each other's work. Listed below are some developments that have led to our current knowledge about organisms:

1. invention of the microscope
2. Aristotle classified all organisms as plants or animals
3. a 5-kingdom classification system was developed
4. DNA used to identify relationships between species

Put the above developments in order as they occurred.

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

25) Study the following key for classifying sharks. Which rule is used in developing this key?

A. An organism can only be classified as one thing
B. The organism is classified based on its size
C. The key is based on the name of the organism
D. The organisms are classified by how many there are

26) Which of the following is true when an organism has the same scientific name as another organism?

A. This does not happen in classification
B. They share one or two common traits
C. They are the same species
D. Someone made a mistake naming them

27) What had to be developed before our present classification system could be developed?

A. Digital scales that allow scientists to more accurately measure size and shape.
B. Microwaves that allow very small organisms to be seen with small waves.
C. Sonar that allows scientists to detect internal structures.
D. Powerful microscopes that allow scientists to look at fine differences in structures.

28) In which kingdom would a multi-cellular green food-producer be placed?

A. Animalia because it is the kingdom with the most multi-cellular organisms in it.
B. Fungi because some mushrooms are edible as food.
C. Protista because they are not fungi, plants or animals.
D. Plantae because plants are multi-cellular and produce their own food.

| | | |
|---|---|---|
| 1a. | Body kite-like (if viewed from the top) | go to 12 |
| 1b. | Body **NOT** kite-like (if viewed from the top) | go to 2 |
| 2a. | Pelvic fin absent | **Family Pristiophoridae** |
| 2b. | Pelvic fin present | go to 3 |
| 3a. | Six gill slits present | **Family Hexzanchidae** |
| 3b. | Five gill slits present | go to 4 |
| 4a. | Only one dorsal fin | **Family Scyliorhinidae** |
| 4b. | Two dorsal fins | go to 5 |
| 5a. | Mouth at front of snout rather than on underside of head | **Family Rhinocodontidae** |
| 5b. | Mouth on underside of head | go to 6 |
| 6a. | Head expanded on side with eyes at end of expansion | **Family Sphyrnidae** |
| 6b. | Head **NOT** expanded | go to 7 |
| 7a. | Top half of caudal fin exactly same size and shape as bottom half | **Family Isuridae** |
| 7b. | Top half of caudal fin **different** in size and shape than bottom half | go to 8 |
| 8a. | First dorsal fin very long, almost half total length of body | **Family Pseudotriakidae** |
| 8b. | First dorsal fin regular length | go to 9 |
| 9a. | Caudal fin very long, almost as long as entire body | **Family Alopiidae** |
| 9b. | Caudal fin regular length | go to 10 |
| 10a. | A long needle-like point on end of snout | **Family Scapanorhynchidae** |
| 10b. | Snout **without** long point | go to 11 |
| 11a. | Anal fin absent | **Family Squalidae** |
| 11b. | Anal fin present | **Family Carcharhinidae** |
| 12a. | Small dorsal fin present near tip of tail | **Family Rajidae** |
| 12b. | **No** dorsal fin present near tip of tail | go to 13 |
| 13a. | Front of animal with two horn-like appendages | **Family Mobulidae** |
| 13b. | **No** horn-like appendages | **Family Dasyatidae** |

29) Many people have the misconception that mushrooms belong to the Plant kingdom. You conduct an experiment by growing plants and mushrooms under different amounts of light. You obtain the following data from your experiment. Based upon these data, which of the following is the best conclusion?

| Organism | Amount of water per day | Hours of light per day | Growth/description after 2 weeks |
|---|---|---|---|
| Mushroom #1 | 100 ml | 8 | 4 inches – healthy |
| Mushroom #2 | 100 ml | 0 | 4 inches – healthy |
| Plant #1 | 100 ml | 8 | 4 inches – healthy |
| Plant #2 | 100 ml | 0 | 0 inches - dead |

A. Mushrooms are plants because they can grow in light
B. Mushrooms are plants because they need water
C. Mushrooms are not plants: they can grow in the dark
D. Mushrooms are not plants because they need water

30) What do scientists do when a new type of organism is discovered that does NOT fit into current classification systems?

A. Nothing. There are many organisms that do not fit into current classification systems.
B. Nothing. They wait until they find at least 10 new species and then make a new place in the classification system.
C. Scientists would create a new classification system and discard old classification systems.
D. Scientists would modify current classification systems to make a place for the new organism.

31) What had to be developed before our present classification system could be developed?

A. A method of naming all organisms that all scientists could use and agree on.
B. Lasers which allow scientists to count cells.
C. A new language created specifically for naming the organisms.
D. High-powered telescopes for closer inspection of organisms.

32) What does this mean: "We classify organisms based on structure."

A. Animals are the same species if they are the same size.
B. Where an animal lives is NOT important in classifying it.
C. The coloration and markings of an animal are NOT important in classifying it.
D. The body parts of an organism are used to classify it.

33) Many sponges look somewhat like plants. Which of the following is a major reason why they are classified as animals?
A. they live in water
B. they have pores
C. they do not move
D. they do not make food

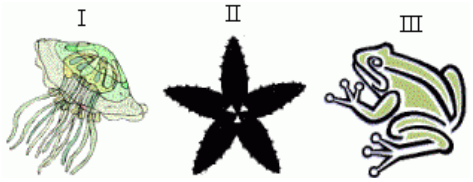
34) Which answer below best describes the future of our modern classification system for biological organisms?
A. It will probably stay the same because scientists have learned all there is to know about classifying organisms
B. It will probably stay the same because scientists don't like to change things
C. It will probably change because scientists like to change things from time to time
D. It will probably change because new technology will provide better information on classifying organisms

35) Based on the information, what phylum would organism III belong to?
A. Porifera
B. Chordata
C. Arthropoda
D. Coelenterata
E. Echinodermata

36) Based on the information what phylum would organism II belong to?
A. Porifera
B. Chordata
C. Arthropoda
D. Coelenterata
E. Echinodermata

| | | |
|---|---|---|
| 1a. | Organism is symmetrical | Go to 2 |
| 1b. | Organism is not symmetrical | Phylum Porifera |
| 2a. | Organism is bilaterally symmetrical | Go to 3 |
| 2b. | Organism is radially symmetrical | Go to 5 |
| 3a. | Organism has a spinal cord and vertebrae | Phylum Chordata |
| 3b. | Organism has NO spinal cord or vertebrae | Go to 4 |
| 4a. | Organism has a hard exoskeleton | Phylum Arthropoda |
| 4b. | Organism has NO hard exoskeleton | Phylum Annelida |
| 5a. | Organism has five rays or arms | Phylum Echinodermata |
| 5b. | Organism is transparent with many tentacles | Phylum Coelenterata |

37) Based on the information what phylum would organism I belong to?
A. Porifera
B. Chordata
C. Arthropoda
D. Coelenterata
E. Echinodermata




38) A major difference between animals and plants is that
A. plants cannot move on their own
B. plants can make food on their own
C. plants don't need air
D. plants do not respond to stimuli

39) Which is our most useful criterion to determine if two currently-living organisms or populations are of the same species?
A. They interbreed and their offspring are sterile.
B. They interbreed and produce fertile offspring.
C. They interbreed and their offspring all die at birth.
D. Only the offspring of the two organisms can interbreed and produce offspring.

40) In which kingdom would a single-celled organism without a nucleus be classified?
A. Bacteria because bacteria do not have nuclei.
B. Protista because most protists are single-celled.
C. Animalia because animals are the easiest to see and classify.
D. Plantae because plants have chloroplasts.

41) In the past scientists used to classify living things into either the plant or animal kingdoms. Today it is customary to use a classification system that uses five kingdoms, and many scientists favor six. Which statement below best explains why?
A. Recently there have been many developments which all contribute to our ability to classify organisms.
B. Scientists now work harder than in the past and there are more of them who need to classify organisms.
C. Scientists now are better at thinking and analyzing information than scientists from the past.
D. Today there are a lot more organisms in the world than in the past.

42) Which is the best choice for a classification key?
A. The key gives the classifier only 2 choices at each step
B. The key is based on the size of the plant
C. The key is based on the location of the plant
D. The key is based on structures that are not easily observed

43) Which rule is best in developing a key?
A. An organism can only be classified (or end up) in one place
B. The organism is classified based on its size
C. The key is based on the common name of the organism
D. The organisms are classified by how many you have actually seen

44) Which of the following characteristics would be appropriately used in developing a classification key for fish?
A. what lure or bait caught the fish
B. the size of the fish
C. the shape of the fish's head
D. how long the fish lived