

*Ministry of Education & Human Resource Development  
Vocational Training & National Excellence*

*Grade 6*  
*National Assessment*  
*May 24, 2024*

**TIME: 75 Minutes**

**DO NOT TAKE THIS PAPER OUT OF THE EXAMINATION ROOM**

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*Science and Technology*

SCIENCE AND TECHNOLOGY

INSTRUCTIONS

READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING THE TEST.

1. THIS PAPER CONTAINS SIXTY (50) ITEMS.
2. YOU HAVE SEVENTY-FIVE **(75) MINUTES** TO COMPLETE THIS PAPER.
3. FOR EACH ITEM, **SHADE** THE LETTER ON THE ANSWER SHEET THAT CORRESPONDS TO THE ANSWER YOU HAVE CHOSEN.
4. USE A PENCIL TO SHADE IN THE CORRECT ANSWER.
5. IF YOU ARE UNABLE TO ANSWER A QUESTION LEAVE IT AND MOVE ON TO THE NEXT QUESTION. YOU WILL RETURN TO IT LATER IF THERE IS AVAILABLE TIME.

**EXAMPLE:**

1. Which object is most likely to float in a container of water?  
  
A. leaf  
B. key  
C. pen  
D. coin

The correct answer is leaf, letter A. On your answer sheet you shade:



B. C. D

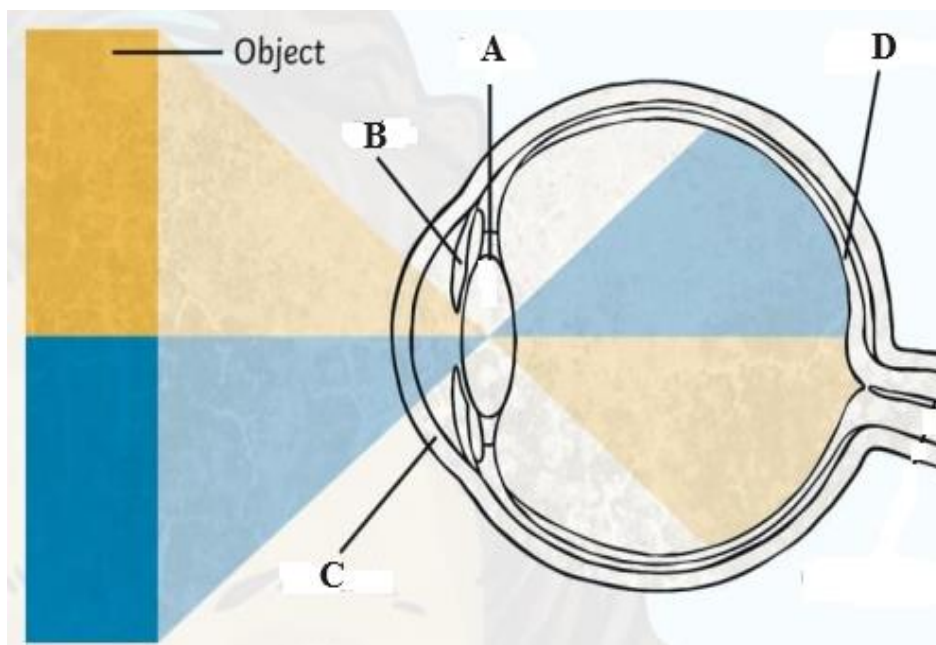
If there is a need to change your answer, erase then shade your new answer.

**SECTION 1 LIFE SCIENCE**

**PLANTS AND ANIMALS:1.1**

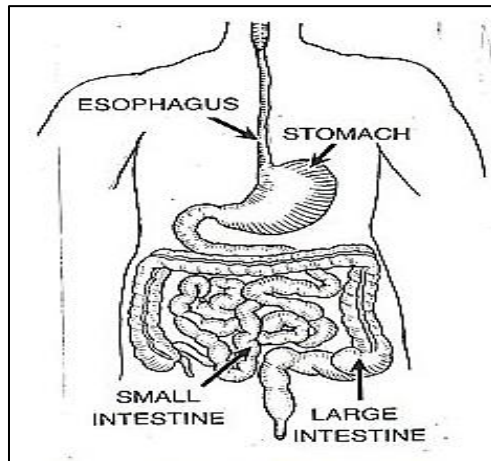
Study the diagram of the eye below to respond to **Item 1**.

1. The retina is the part labeled:



- A. A
- B. B
- C. C
- D. D

2. The digestion of proteins first begins in which labeled part in the diagram below?

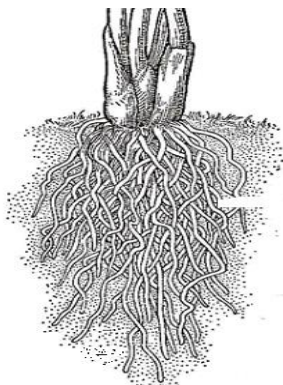


- A. Esophagus  
 B. Stomach  
 C. Small intestine  
 D. Large intestine
3. The table below shows the composition of gases in air when inhaled and exhaled. Which gas is **NOT** affected by respiration?

Gas	Amount in inhaled air	Amount in exhaled air
Oxygen	20	16
Carbon dioxide	Trace	4
Nitrogen	79	79
Water vapour	Small amount	Large amount

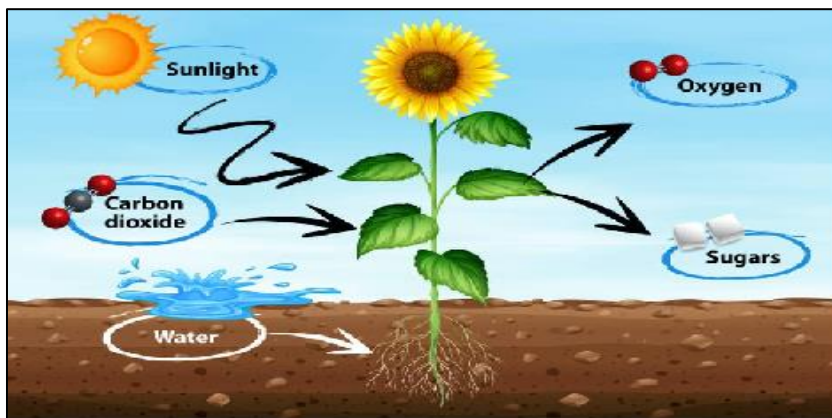
- A. Oxygen  
 B. Carbon Dioxide  
 C. Nitrogen  
 D. Water Vapour

4. The diagram below shows which of the following root systems?



- A. adventitious
- B. tap
- C. fibrous
- D. storage

5. The diagram below represents an illustration of which process?

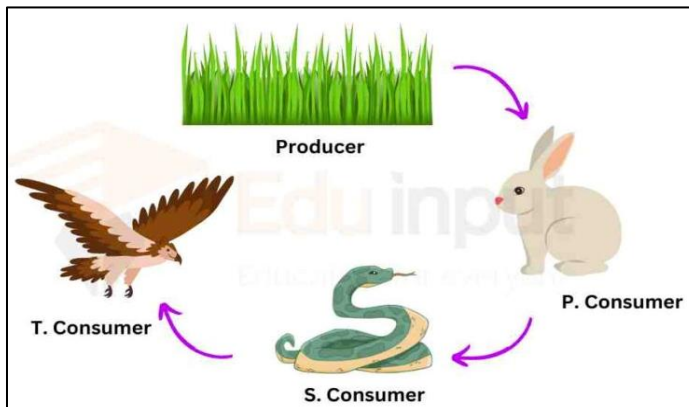


- A. photosynthesis
- B. respiration
- C. transpiration
- D. reproduction

6. Some plants reproduce asexually. Which of the following **DOES NOT** reproduce asexually?
- A. ginger
  - B. dasheen
  - C. onion
  - D. mango

**LIVING THINGS IN THE ENVIRONMENT:1.2**

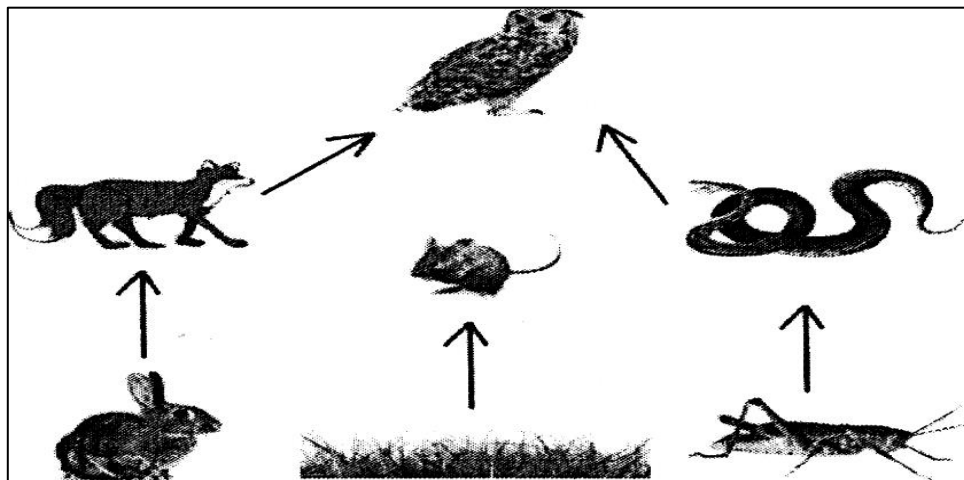
7. The study of the relationship between living organisms and their environment is called:
- A. Botany
  - B. Ecology
  - C. Biology
  - D. Zoology
8. The image shown below represents a /an



- A. food web
- B. food chain
- C. ecosystem
- D. habitat

9. The organisms living in a pond were fish, tadpoles, algae, waterweeds and water birds. These organisms would be referred to as a/an
- ecosystem
  - habitat
  - community
  - population
10. Which one of the following represents the flow of energy in a food chain?
- Producer → Carnivore → Herbivore
  - Herbivore → Carnivore → Producer
  - Producer → Herbivore → Carnivore
  - Carnivore → Producer → Herbivore

Study the diagram and answer the question that follows.



11. What could happen if all the snakes died?
- The grasshopper population would increase.
  - The grasshopper population would decrease.
  - The owls would also die.
  - The field rat would eat the grasshoppers.

**ADAPTATION OF LIVING THINGS:1.3**

12. Any physical structure (body part or covering) or behavior that helps an animal survive is known as:

- A. Biology
- B. Instinct
- C. Extinction
- D. Adaptation

13. Some ants walk in a line. The **BEST** possible explanation for this would be they are

- A. following each other.
- B. marching in time.
- C. following a scent trail.
- D. looking for a mate for the queen ant.

14. A wasp beetle has the same body markings as a wasp. This helps the wasp beetle because predators think it's a wasp. This adaptation is called

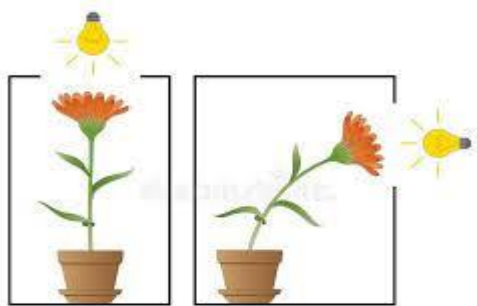


- A. Behavior
- B. Mimicry
- C. Countershading
- D. Camouflage

Study the definitions in the table below to answer the question that follows.

Type of Adaptation	Description
Behavioural	Involves response to external stimuli/environment
Structural	Physical features of the organisms that help them to survive in their environment
Physiological	Involves the internal processes of the organisms
Convergent	When similar organisms develop similar features in order to survive in their common environment

15. Which one of the types of adaptation listed does the diagram below illustrate?

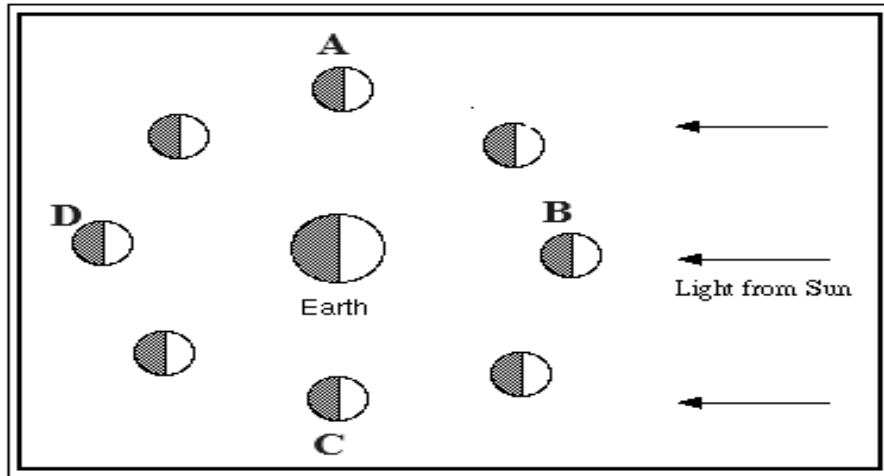


- A. Behavioural
- B. Structural
- C. Physiological
- D. Convergent

**SECTION 2: EARTH AND SPACE**

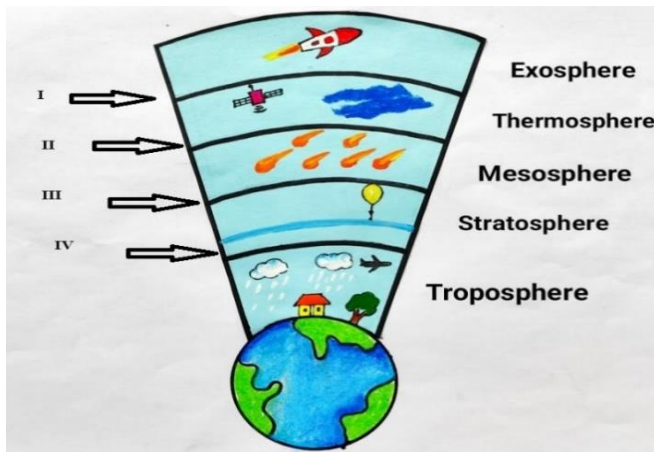
16. A constellation is best described as a
- A. solar system of planets and their moons.
  - B. group of falling comets.
  - C. patterned group of stars.
  - D. moon and the sun in the solar system.

17. Which of the following labeled phases of the moon represents new moon?



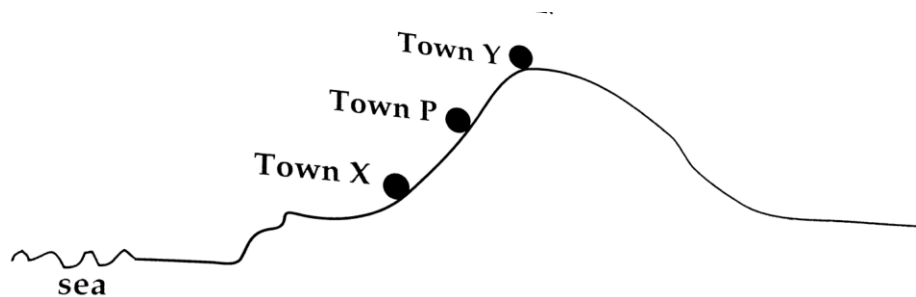
- A. A  
 B. B  
 C. C  
 D. D
18. Which one of the following statements is **NOT** accurate?
- A. Weather only describes the atmospheric temperature of a place or region.
- B. Trends in data of weather over a long period are used to describe the climate of an area.
- C. Climate is the average weather of an area
- D. In general, the further a place is from the equator, the cooler the climate will be.

19. Which region in the illustration below has been severely affected by Man's actions?



- A. I
- B. II
- C. III
- D. IV

Use the diagram to answer the Questions 20 and 21.



20. What would most likely affect weather conditions at **Town X**?
- A. Factory fumes
  - B. Sea breeze
  - C. Altitude
  - D. Land winds

21. How would the weather at **Town Y** be different from that at **Town P**?
- A. Hotter
  - B. Cooler
  - C. Warmer
  - D. No difference
22. The **3 R**'s used for conservation of our resources stand for:
- A. reduce, reuse, repeat
  - B. reuse, recycle, repeat
  - C. reduce, reuse, recycle
  - D. reduce, recycle, repeat
23. The rock shown below was solidified from molten earth material. This is an example of a/an \_\_\_\_\_ rock.



- A. Sedimentary
- B. Metamorphic
- C. Limestone
- D. Igneous

24. Which of the following is **NOT** a consequence of deforestation?



- A. Increased rainfall
- B. Soil erosion
- C. Habitat loss
- D. Less biodiversity

25. Which one of the following is the **MOST** difficult to recycle?



paper



tin cans



plastic toys



glass bottles

- A. paper
- B. cans
- C. plastic toys
- D. glass bottles

**SECTION 3: PHYSICAL SCIENCE**

26. While shopping with his mother at a local supermarket, John witnessed a robbery. The store however had recently implemented the security measure shown below which helped them to catch the thief. Which of the following devices was most likely used?



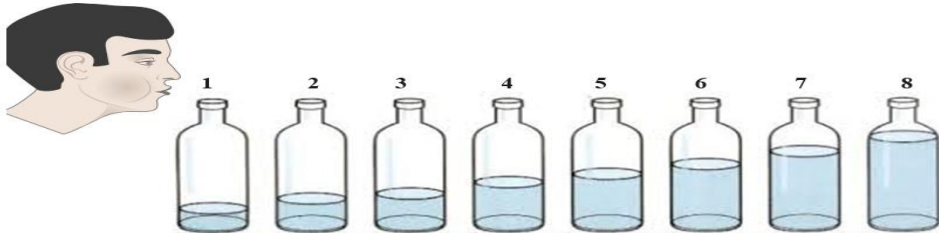
- A. convex mirror
- B. convex lens
- C. concave mirror
- D. concave lens

Look at the diagram below to respond to **Item 27**.



27. The television when plugged in transforms electrical energy into\_\_\_\_\_
- A. sound, heat and light.
  - B. sound and light only.
  - C. light and heat only.
  - D. heat, light and friction.

28. Jason realized that if he blew across bottles 1-8 filled with varying amounts of water, each produced a different pitch. This is because there is a difference in the vibrating

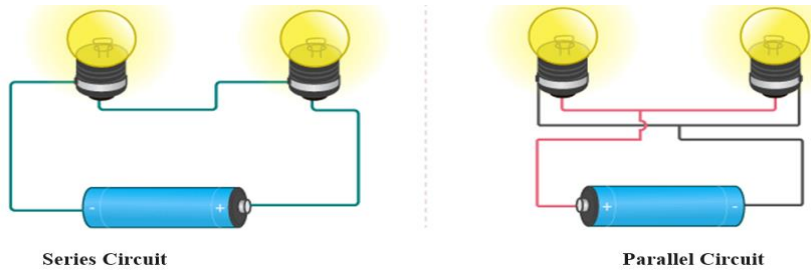


- A. heights of water in the bottles.
  - B. air column in the bottles.
  - C. bottle heights.
  - D. column of air leaving his lips.
29. Below is a diagram of a simple electromagnet. How can it be made stronger?



- A. Add more coils of wire to the nail.
- B. Reverse the poles on the battery.
- C. Use a smaller battery.
- D. Use safety smaller pins.

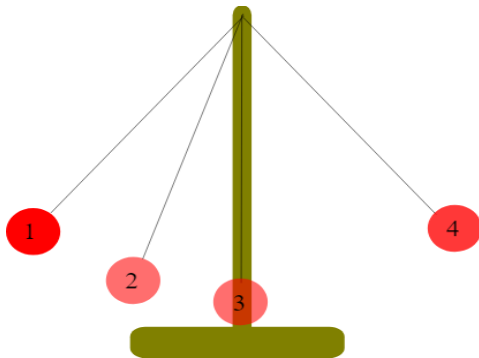
30. Look at the diagram below to answer the question that follows.



Which of the following statements is **FALSE**?

- A. In a parallel circuit the current has more than one pathway.
- B. In a series circuit in each component is the same.
- C. In a series circuit the current has only one pathway.
- D. The bulbs in a series circuit one bulb can light while the other is off.

31. A ball is held at **Position 1** and released, in the diagram below. At which labeled point does the ball have **maximum** kinetic energy?



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

32. All the images shown below are examples of



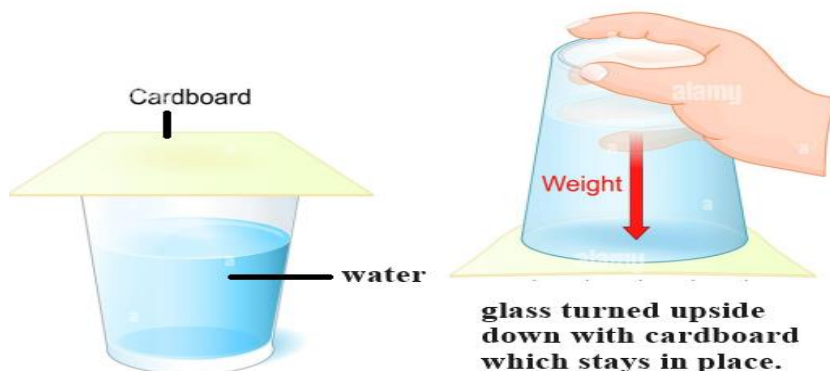
- A. levers
- B. inclined planes
- C. pulleys
- D. gears

33. Pam plays football for her school. When she kicks the ball, her legs act as a



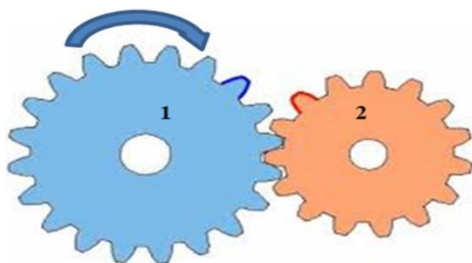
- A. pulley
- B. wedge
- C. complex machine
- D. lever

34. Study the two images below to answer the question that follows.



An experiment was conducted as shown above. After the cup was turned upside down it was observed that the water and cardboard remained in place. Which of the following is the best explanation for this?

- A. Air pressure is acting upward against the cardboard to keep it in place
  - B. There is less water outside of the cup than inside.
  - C. The weight of the water was more than that of the cardboard.
  - D. Gravity is acting upward against the water in the glass.
35. The diagram below shows two gears **1** and **2** connected to each other. If you turn **Gear 1** quickly in the direction shown then Gear 2 will turn



- A. slowly in the same direction.
- B. quickly in the same direction.
- C. slowly in the opposite direction.
- D. quickly in the opposite direction.

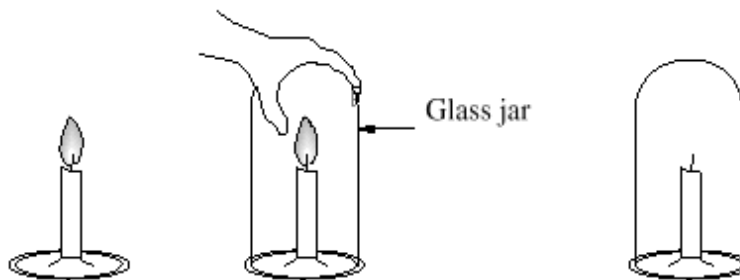
36. Matter changing from a solid to a gas is called

- A. Boiling
- B. Freezing
- C. Evaporation
- D. Sublimation

37. Which material is best suited to make a pot handle?

- A. aluminum
- B. wood
- C. copper
- D. paper

38. A candle is lit and placed under a jar. After three (3) minutes it extinguishes. What is the **BEST** explanation for this?

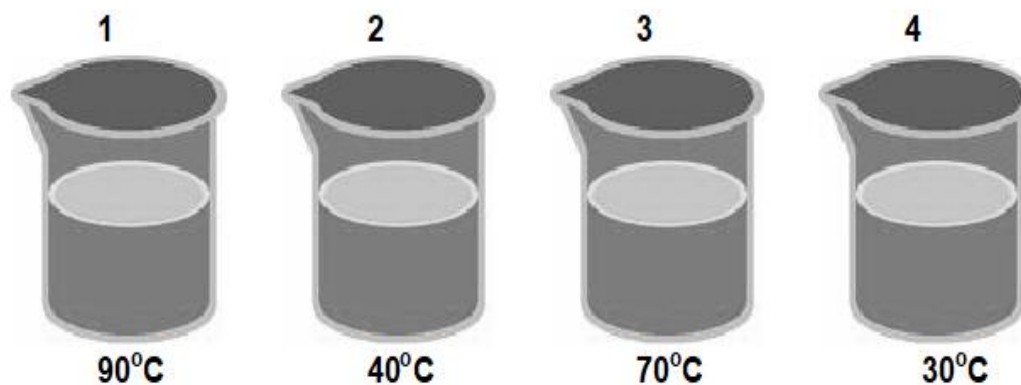


- A. Candles cause fire.
- B. Glasses conduct heat.
- C. Air is needed for fire to burn.
- D. Fire will not burn if the glass is upside down.

39. An atom's kinetic energy of atoms in matter is directly related to

- A. Pressure
- B. Temperature
- C. Shape
- D. Size

40. The beakers below all contain water at different temperatures. In which beaker of water will sugar dissolve the fastest?



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

**SECTION 4: AGRICULTURE SCIENCE**

41. Which layer of soil is rich in nutrients?

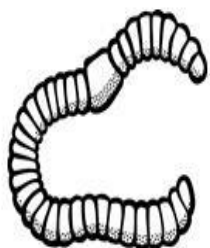


- A. Organic layer and topsoil
- B. Top soil and subsoil
- C. Parent material and bed rock
- D. Top soil and bedrock

42. After harvesting, a farmer ploughed the remaining vegetation into the soil. The **MOST LIKELY** reason for doing is to

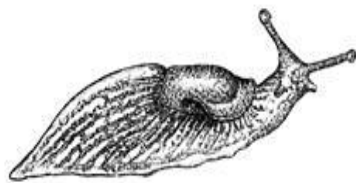
- A. add nutrients into the soil.
- B. prevent soil erosion.
- C. save time on waste disposal.
- D. prevent weeds from growing.

43. Which of the following is **most helpful** to a farmer?



earthworm

A



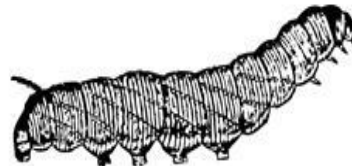
slug

B



beetle

C



caterpillar

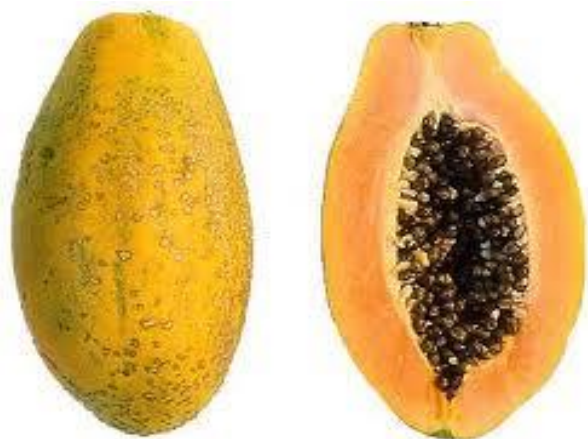
D

- A. earthworm
- B. slug
- C. beetle
- D. caterpillar

44. Which of these diseases affects banana plants?

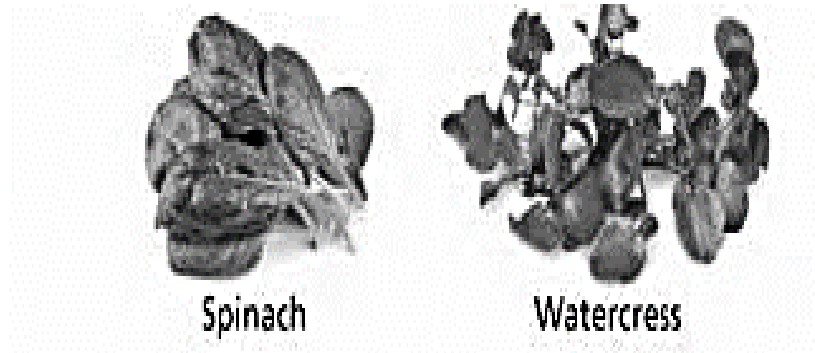
- A. Yellow Fever
- B. Fire Blight.
- C. Black Sigatoka
- D. Snow Molds

Use the image below to respond to **Items 45 and 46.**



45. What fruit is shown in the picture above?
- A. sugar apple
  - B. pawpaw
  - C. canteloupe
  - D. pumpkin
46. All these statements are correct about the fruit **EXCEPT** it
- A. contains flowers that cross pollinated
  - B. reproduces through sexual reproduction
  - C. is an example of a corm
  - D. is a good source of Vitamin A

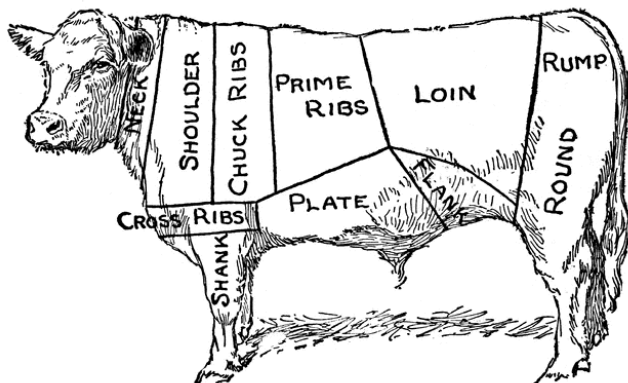
47. Elsa has been feeling very weak lately. A checkup at the doctor's confirmed she had a deficiency and needed to eat more of the list of plant-based foods shown below.



Which one of the following deficiency diseases do you think Elsa has?

- A. Night Blindness
  - B. Scurvy
  - C. Kwashiorkor
  - D. Anemia
48. Which one of the following is an example of a fresh water fish?
- A. trout
  - B. tuna
  - C. marlin
  - D. dolphin

49. The diagram shown below illustrates the different parts of a cow used for



- A. milk
- B. leather
- C. meat
- D. cheese

50. The meat obtained from an adult sheep is called



- A. mutton
- B. beef
- C. pork
- D. ham

**END OF TEST**