PSSA - Science #2

Name:
Period:

1 Changes in air pressure can be used to predict changes in weather. Which of these instruments would a scientist **most likely** use to measure air pressure?

A barometer

B thermometer

C wind sock

D rain gauge

2 The average yearly rainfall in a forest decreases over 20 years. Which of these will **most likely** happen?

A Bushes and grass will compete for sunlight.

B Trees with deeper roots will produce the most seeds.

C Seedlings will need to grow taller trunks to survive.

D Seeds that float will have the best chance to reproduce.

Use the table below to answer question 3.

PROPERTIES OF METALS

Metal	Melting Point	Density	Color
Iron	1,538°C	7.9 g/cm^3	silvery
Copper	1,357°C	8.9 g/cm^3	reddish
Silver	1,235°C	10.5 g/cm^3	silvery
Nickel	1,455°C	8.9 g/cm^3	silvery

3 Students are given one of the four metals in the table. It has a silvery color and a density of 8.9 g/cm^3. What is the metal?

A iron

B copper

C silver

D nickel

4 Lava from a volcano cools to form rock. This rock is weathered into tiny grains and eroded by a river. The river deposits the grains into a lake where they settle to the bottom. Over many millions of years more grains are deposited and compacted. Which of the following is **most likely** to form from these grains?

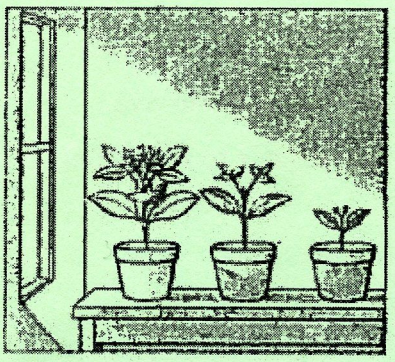
A coal

B basalt

C pumice

D sandstone

Use the picture below to answer question 5.



5 Students planted three seeds from the same plant species and let them grow on a classroom windowsill. Which of the following is **most likely** an inherited trait for these plants?

A where it grows

B leaf shape

C when it is planted

D number of leaves

6 A child has blue eyes. Both of his parents have brown eyes. Which of the following is the **most likely** reason for this pattern of traits?

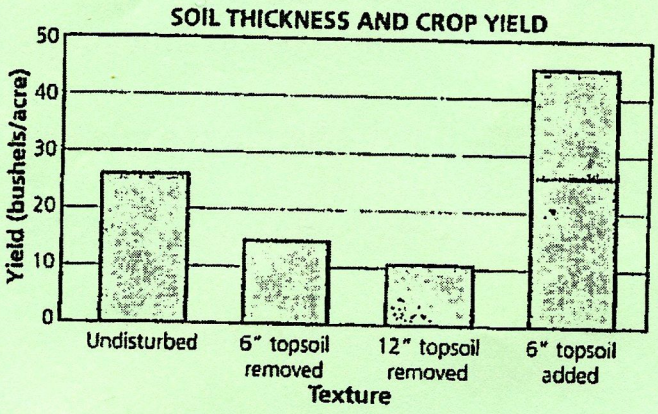
A The gene for blue eyes is dominant over the gene for brown eyes.

B Both of the parents wanted the child to have the gene for blue eyes.

C The child inherited a recessive gene for blue eyes from each parent.

D The gene from the child is dominant, and the parents' genes are recessive.

Use the graph below to answer question 7.



7 Which of the following is the **best** inference to draw from this table?

A Crop yield depends on a water source deep underground.

B Insects living underground are the main reason for low crop yield.

C Crop yield can be improved if erosion is prevented.

D Fertilizers are the least effective way to improve crop yield.

8. A hydroelectric dam uses running water to turn a turbine and generate electricity. Which form of energy does the water provide?

A. Chemical
B. Mechanical
C. Nuclear
D. Solar

9. Which of the following best describes the effect of selective breeding in a herd of cattle?

A. It will change the genetic makeup of a single bull in a few weeks
B. Over several years, it will change the genetic makeup of a single bull
C. It will change the genetic makeup of the herd in a few weeks.
D. Over several generations, it will change the genetic makeup of the herd

10. Look at the chemical equation shown below:

$$2H_2 + O_2 \rightarrow 2H_2O$$

Which of the following lists all of the reactants in this reaction?

A. O_2
B. $2H_2O$
C. H_2
D. $2H_2 + O_2$

11. An organism in an ecosystem is a producer. What else is most likely to be true about this organism?

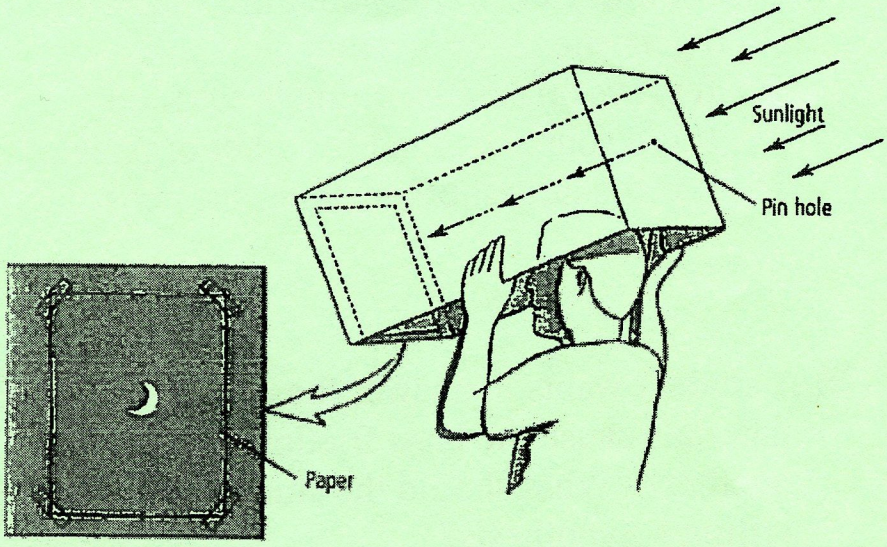
A. It gets energy by feeding on plants
B. It preys on smaller animals for food
C. It is a source of food for other organisms
D. It is the largest organism in the ecosystem

11. A student wants to answer the question, "Which materials cause the least friction when rubbed together?" What should the student do next after writing a hypothesis?

A. Draw a conclusion about the effects of friction on materials
B. Organize and analyze data on friction caused by rubbing materials
C. Design an experiment to compare friction created by materials
D. Measure the friction produced when two materials are rubbed together

Directions: Use the figure and the information below to answer questions 12 through 15.

SAFELY VIEWING A SOLAR ECLIPSE



Solar eclipses are extremely rare. Most people will have a chance to see only a few in their lifetime. However, it is not safe to look directly at the Sun, even during an eclipse.

One way to watch an eclipse is to create a pinhole viewer. To make a pinhole viewer, take a cardboard box and poke a hole in one end. Put a white piece of paper on the inside of the other end. Then point the pinhole at the Sun, put your head under the box and enjoy the solar eclipse without harming your vision.

12 A student builds and uses a pinhole viewer to observe a solar eclipse safely. Which of the following is a testable question that can be answered by the student using a pinhole viewer to carry out a scientific investigation?

A How long does a solar eclipse last?

B Why is it dangerous to look directly at a solar eclipse?

C How often does a solar eclipse occur?

D Where is the best location on Earth to view a solar eclipse?

13 A solar eclipse is visible somewhere on Earth once every 346.6 days. Which of the following cycles occurs about as often as a solar eclipse?

A the tide cycle

B Earth rotates once on its axis

C all phases of the Moon are seen twice

D Earth revolves once in its orbit

14 How is solar energy transferred from the Sun to Earth?

A conduction

B convection

C gravitation

D radiation

15 After viewing the solar eclipse, the student decides to observe the Moon that evening. Which phase of the Moon will she see?

A new moon

B full moon

C gibbous moon

D quarter moon

Use the table below to answer question 16.

MIXING SUBSTANCES

Beaker	Powder (g)	Liquid (mL)	Initial Temperature (°C)	Final Temperature (°C)
1	10	60	20	24
2	20	60	20	28
3	30	60	20	31
4	40	60	20	35
5	35	60	20	?

16 Students mixed the substances shown in separate beakers. The table shows the temperature changes that resulted. Which of the following is the **most likely** final temperature for beaker 5?

A 38°C

B 35°C

C 33°C

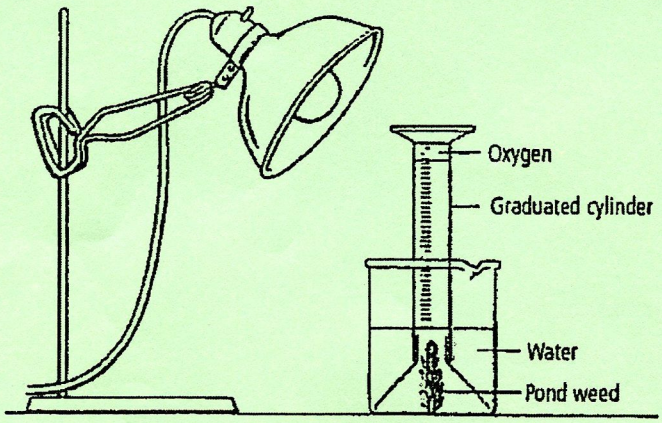
D 31°C

1, 7, 9, 15, 22, 11

4, 3, 21, 8, 13,

.94 x 1.02

Use the diagram and the table below to answer question 21.



TOTAL OXYGEN COLLECTED (mL)

Setup	20 Minutes	40 Minutes	60 Minutes	80 Minutes
1	2	4	6	8
2	0	0	0.2	0.5
3	3	6	9	12

21 Students created three setups like the one shown above. They placed the same amount of pond weed into the beakers of each setup. Each setup had a graduated cylinder to collect the oxygen produced by the pond weed during photosynthesis. Which statement **best** explains the results for setup 2?

A The students were not careful in their data collection for setup 2.

B Setup 2 represents the control group exposed to almost no light.

C The pond weed did not have enough oxygen to carry out photosynthesis efficiently.

D The pond weed was photosynthesizing faster than it was carrying out respiration.

35 Which of the following is the **best** source of water for crops?

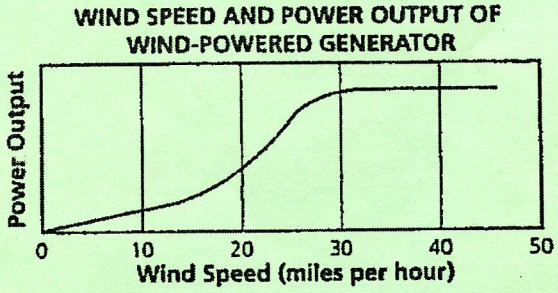
A saltwater marsh

B deep ocean water

C freshwater river

D tidal pool water

Use the graph below to answer question 36.



36 A scientist tested a wind-powered generator to determine how effective it was. The graph shows his results. As wind speed increases, what happens to power output?

A It increases at a steady rate.

B It decreases for a while, then remains steady.

C It remains steady.

D It increases for a while, then remains steady.

52 Thanks to vaccinations, many diseases, such as measles, that once were common are very rare today. In a very small number of people, a vaccination may have a bad effect on a person's health. Which of the following would be the **most likely** result of stopping vaccination programs?

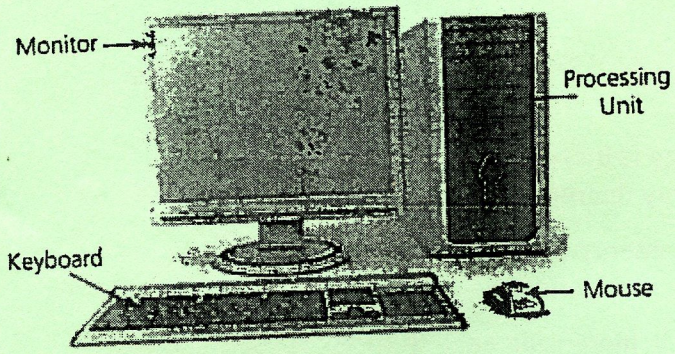
A More people would suffer from diseases.

B There would be no more diseases or health problems.

C Today's common diseases would become rare.

D It is not possible to predict how diseases would be affected.

Use the picture below to answer question 53.



53 Which of the following statements about the parts of a computer system is **true**?

A The parts are organized from simplest to most complex.

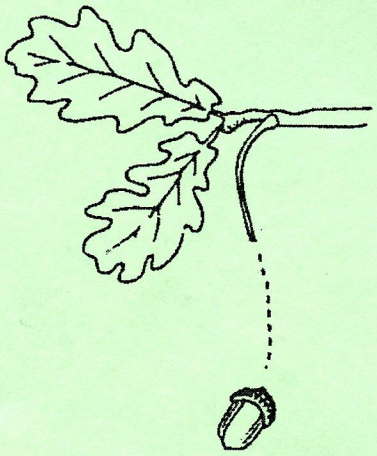
B If one part breaks, another part will take over its job.

C The system gets input from each of the parts.

D Each part of the system has a different job to do.

This is -

. below to answer question



54 Which of the following best describes the acorn as it falls?

A Its potential energy is increasing as its kinetic energy decreases.

B Both its potential energy and kinetic energy are decreasing.

C Its kinetic energy is increasing as its potential energy decreases.

D Both its kinetic energy and potential energy are increasing.

55 A local weatherperson announces that a high-pressure system is moving into the area this weekend. Which kind of weather is **most likely**?

A rain and thunderstorms

B heavy snow and sleet

C clouds and high winds

D dry with clear skies

56 Which unit of measurement should a scientist use to describe the thickness of a leaf?

A milligram

B millimeter

C kilogram

D kilometer