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**CLASS
6**

LEVEL - 1

Set A1

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SCIENCE OLYMPIAD™**

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Level - 1 : All Level-1 successful* participants will get certificate, aptitude report and school toppers will be eligible for school hero medals.

Level - 2 : School toppers* will be selected for level-2-National level - online computer based interactive test held at exam centres all over India. Winner will get merit certificate, medals, laptop, scholarship and other prizes.

Level - 3 : Middle and Senior Class Toppers will qualify# for level-3-International level-where you will compete with students globally. Get selected for EHF's Google Science Fair Online Training Camp. Represent India & win laurels. Guidance by top scientists.

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SCIENCE FAIR

*# See prospectus/website for details

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E-MAIL : INFO@EDUHEALFOUNDATION.ORG

ROUGH WORK

Instructions for the Candidate

1. You are allowed additional 10 minutes to fill the required details in the RESPONSE SHEET (OMR).
2. The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 40 Questions each to be answered in 60 minutes. The Question paper for classes 7 to 12 contains 60 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the teacher.
3. Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. **THE STUDENT CAN RETAIN THE QUESTION PAPER.**

GENERAL IQ

1. Which of the following is an edible shoot?

- (1) Potato (2) Radish
(3) Carrot (4) Apple

2. Malnutrition of food is caused due to

- (1) Intake of balanced diet
(2) Intake of insufficient nutrients
(3) Intake of lot of roughage
(4) None of these

3. Silk is obtained from _____

- (1) Larva of silkworm.
(2) Sheep
(3) Cotton plants of good quality.
(4) All of these.

4. Kerosene or edible oil do not dissolve in water. They are called-

- (1) Immiscible liquids
(2) Solute and solvent
(3) Solvent and solution
(4) Miscible liquids

5. Which of the following methods is used to separate pebbles and stones from sand?

- (1) Sieving (2) Winnowing
(3) Handpicking (4) None of these

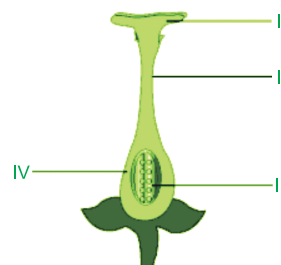
6. The given table lists some reversible and irreversible changes.

Reversible change	Irreversible change
Boiling of water	Cutting of trees
Bending of wire	Cooking of food
Souring of milk	Burning of wood

Which change is listed incorrectly in the given table?

- (1) Souring of milk
(2) Cooking of food
(3) Boiling of water
(4) Bending of wire

7. Which labelled structure illustrates the part where pollen grains germinate to give pollen tube?



- (1) I (2) II
(3) III (4) IV

8. Muscles are attached to the bones with the help of

- (1) Pivotal joints
(2) Ligaments
(3) Tendons
(4) None of these

9. In desert plants like cactus, photosynthesis is carried out by:

- (1) Stem (2) Root
(3) Leaf (4) Flower

10. One Kilometre is equal to _____ metres.

- (1) 10.
(2) 50.
(3) 80.
(4) 1000.

GENERAL SCIENCE

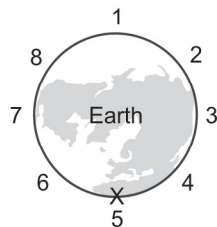
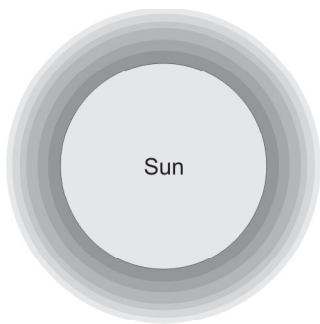
11. Wind is considered a renewable resource because the energy that drives the wind originally comes from

- (1) the Sun.
- (2) rain.
- (3) the ocean.
- (4) oxygen.

12. Which hot and dry biome is home to large herds of herbivores that feed on the many kinds of grasses?

- (1) tundra
- (2) desert
- (3) rain forest
- (4) savannah

The diagram shows the Sun and Earth.



13. What will cause a high tide to occur at location X?

- (1) The moon is at location 2.
- (2) The moon is at location 4.
- (3) The moon is at location 5.
- (4) The moon is at location 7.

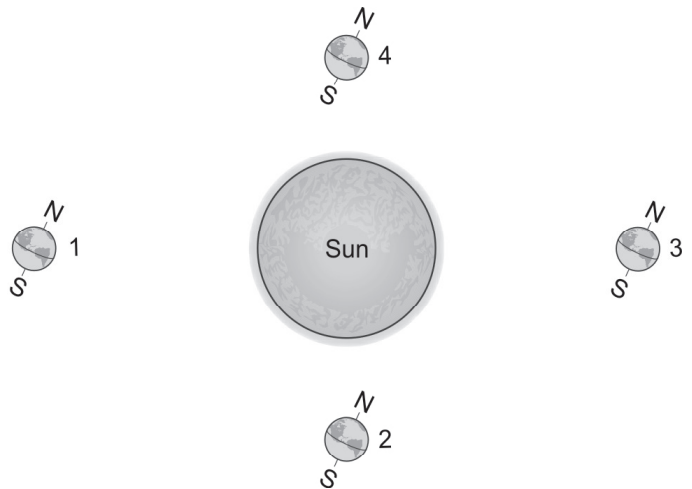
14. Which set of objects best conducts electricity?

- (1) an iron washer and a metal fork
- (2) a door key and a rubber ball

(3) a copper pipe and a wooden spoon

(4) a rubber mallet and a glass measuring cup

The diagram shows Earth at four different locations around the sun.




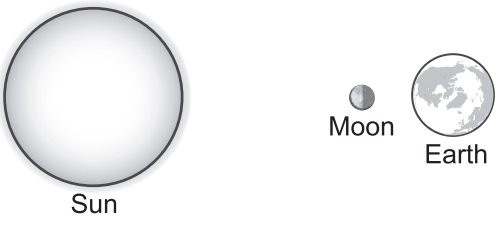

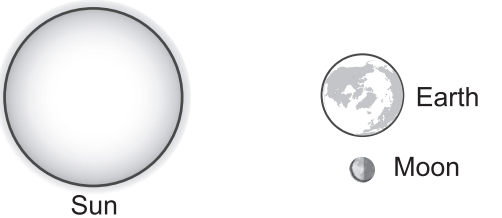
15. At which location is it summer in Earth's Northern Hemisphere?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

16. In a biotic response experiment, two plants with the same mass are placed in identical pots. Both plants are given the same amount of water, soil, and sunlight. After one week, the test plant is given one tablespoon of liquid fertilizer. Two weeks later, the data shows the test plant has the greater mass. What is the independent variable in this biotic response experiment?

- (1) amount of sunlight
- (2) soil temperature
- (3) liquid fertilizer
- (4) size of the pot

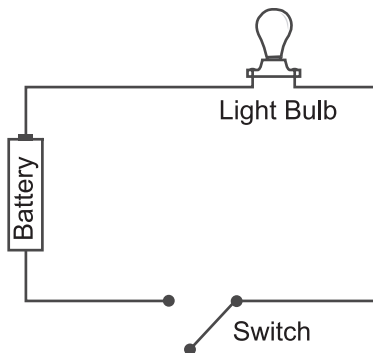
17. A solar eclipse is most likely to occur when Earth, the Moon, and the Sun are in which location?

- (1)  Sun Earth Moon
- (2)  Sun Moon Earth
- (3)  Sun Earth Moon
- (4)  Sun Earth Moon

18. Early satellites were used to monitor weather. In which other area have satellites most benefitted humans?

- (1) medicine (2) navigation
 (3) fossil exploration (4) recycled materials

The diagram below shows a simple electrical circuit.



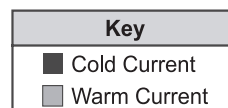
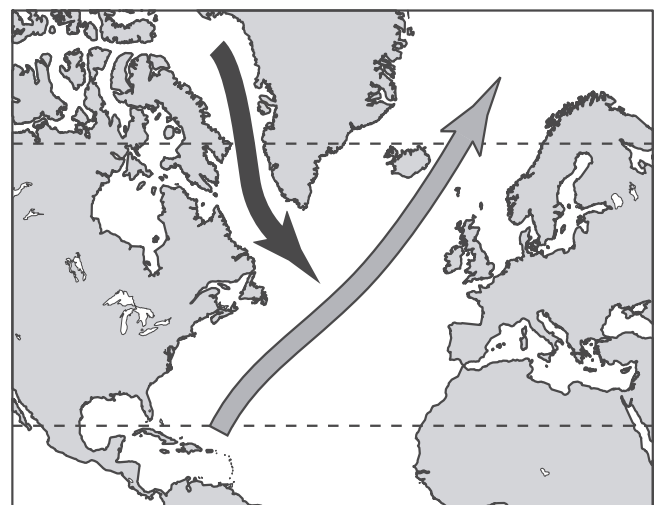
19. What energy conversions occur when the switch is closed?

- (1) chemical energy → electrical energy → light energy
 (2) light energy → electrical energy → thermal energy
 (3) thermal energy → electrical energy → light energy
 (4) light energy → chemical energy → electrical energy

20. How is soil fertility in a deciduous forest dependent on the trees?

- (1) Fallen leaves decay and make the soil rich with organic matter.
 (2) The trees shade the ground so small amounts of light get through to the soil.
 (3) Tree roots keep rocks from breaking and adding minerals to the soil.
 (4) Large rocks help break down smaller rocks and pebbles in forming soil.

The Gulf Stream is a warm water current that begins in the Gulf of Mexico. A diagram of the Gulf Stream is shown below.



21. Which best describes the movement of the Gulf Stream?

- (1) Cold currents carry cold water from the polar zones toward the equator.
- (2) Warm currents carry warm water from the tropics toward the poles.
- (3) Warm currents carry cold water from the tropics toward the poles.
- (4) Cold currents carry warm water from the polar zones toward the equator.

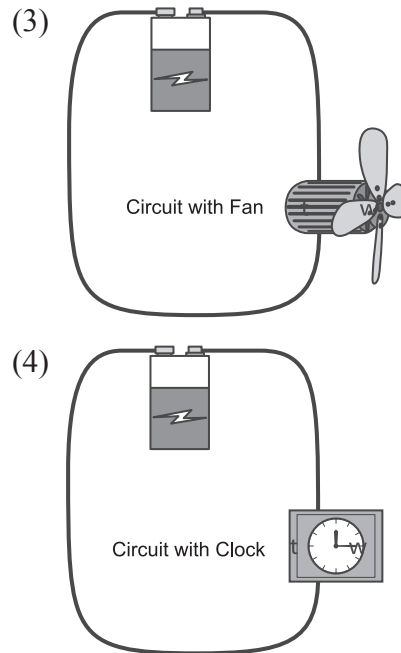
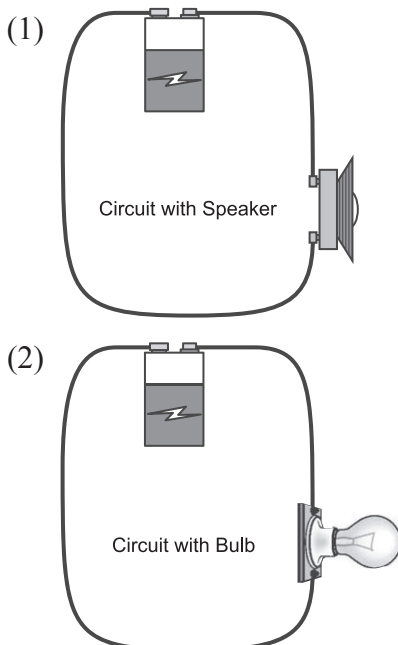
22. The following is a process that takes place in the atmosphere.

solar energy → warm air rises → air cools in upper atmosphere and sinks → air currents

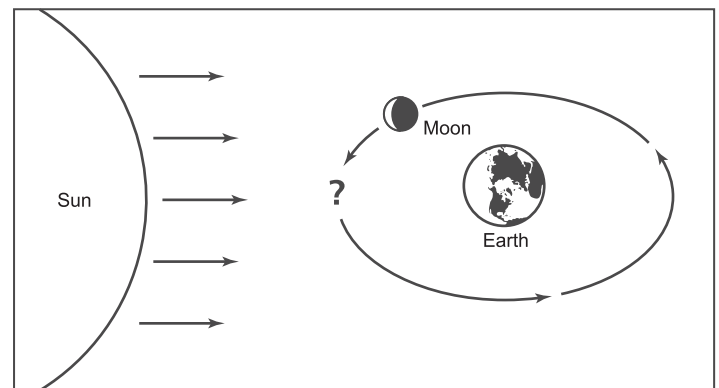
This process can best be identified as

- (1) wind formation.
- (2) cloud formation.
- (3) precipitation runoff.
- (4) static electricity.

23. Which simple circuit most likely produces heat and light energy?



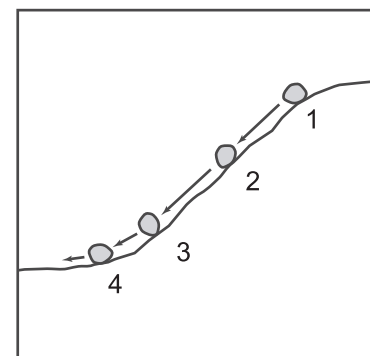
The diagram shows a waning crescent moon.



24. Which moon phase will happen next?

- (1) new moon
- (2) waning gibbous
- (3) full moon
- (4) last quarter

The illustration below shows the locations of a rock as it rolls down a slope.



25. Which location best shows the rock with the greatest kinetic energy and the least potential energy?
- (1) 1 (2) 2
(3) 3 (4) 4
26. Three healthy plants are placed in a dark cabinet. Another three are placed in a window. All the plants are given the same amount of water. After one month, only the plants in the window are living. These results support which conclusion?
- (1) Darkness will cause plants to grow.
(2) Carbon dioxide is needed for growth.
(3) Leaves need more time to grow.
(4) Sunlight is needed for growth.
27. An object moves rapidly as it is thrown upward. Its motion slows as it reaches a maximum height, and then it falls back down. What causes the upward motion to become slower?
- (1) The kinetic energy is converted to wind energy.
(2) The kinetic energy is converted to gravitational potential energy.
(3) The gravitational potential energy is converted to kinetic energy.
- (4) The gravitational potential energy is converted to light energy.
28. Which of these contains both abiotic and biotic elements in a desert environment?
- (1) rocks and sunlight
(2) water and pebbles
(3) scorpions and sand
(4) roadrunners and snakes
29. A rubber band is stretched between a person's fingers and then released. This best demonstrates
- (1) products and reactants.
(2) friction and air resistance.
(3) physical and chemical changes.
(4) potential and kinetic energy.
30. On a summer evening, a barometer reading shows a gradual increase in air pressure. The humidity is 80%. The thermometer reading is slightly increasing. Based on these data, what type of weather should be expected for the next day?
- (1) clear and sunny (2) cool and rainy
(3) rainy and windy (4) cloudy and cold

INTERACTIVE SECTION

31. Water and Sauce are each poured onto a tray from two separate bottles. The charts below represent the amount of time it takes each liquid to flow from the top to the bottom of the tray.

Water Data

Trial #	Time (sec.)
1	2
2	3
3	2

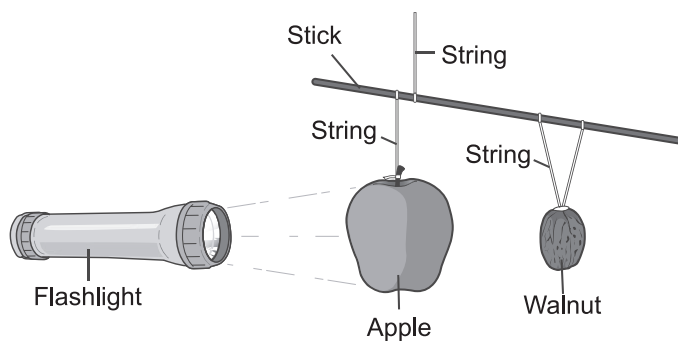
Sauce Data

Trial #	Time (sec.)
1	35
2	35
3	40

What conclusion is best supported by the data?

- (1) Thicker liquids take longer to travel to the bottom of a tray.
(2) Thicker liquids take less time to travel to the bottom of a tray.
(3) Liquid with sugar crystals travels to the bottom of a tray faster.
(4) Liquid with a darker color travels to the bottom of a tray faster.

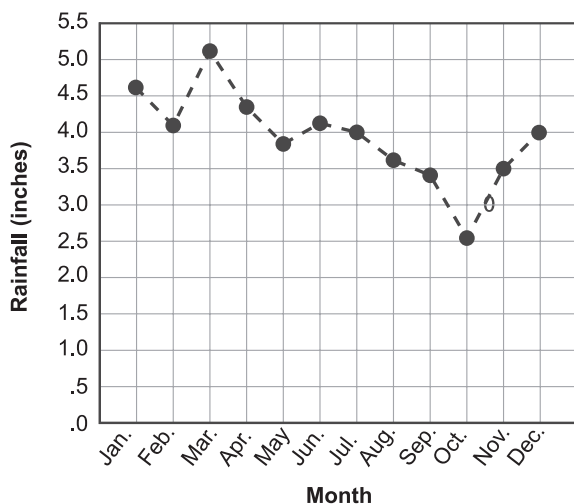
32. A teacher uses a flashlight, an apple, and a walnut to show a lunar eclipse.



This lab setup best demonstrates that a lunar eclipse occurs during a

- (1) new moon. (2) full moon.
 (3) first quarter moon.
 (4) crescent moon.
33. A meteorologist used radar to analyze the wind during a storm in the state of Telangana. The winds were measured at 145 km per hour and were moving in a circular pattern. According to the data, which event was the meteorologist most likely observing?
- (1) lightning storm (2) tornado
 (3) rainbow (4) cloud formation
34. A group of students researched and collected data for a report on the weather in Goa, for one year.

Average Monthly Rainfall in Goa



Based on the data, the students concluded that all cities in Goa will receive approximately 3.6 inches of rainfall next August. Which best explains why the students' conclusion is incorrect?

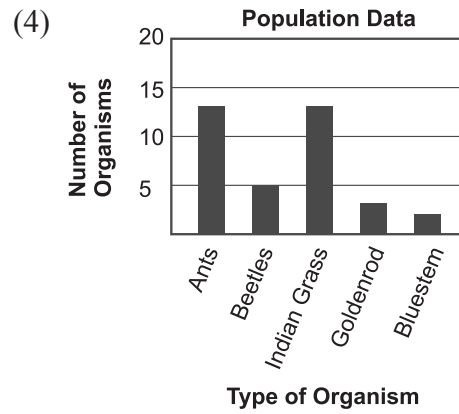
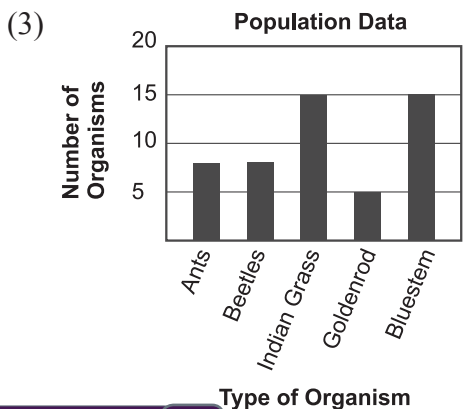
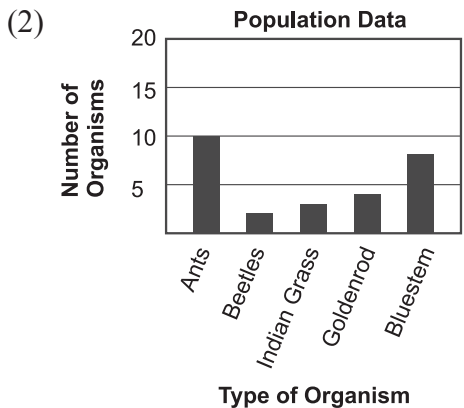
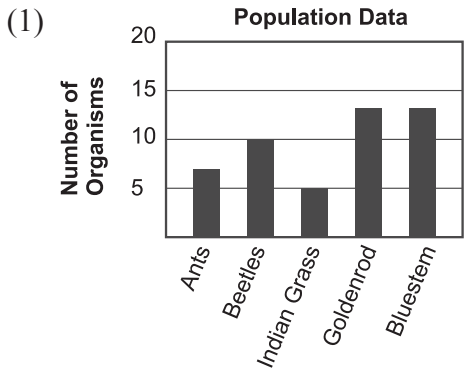
- (1) The data collected did not include yearly rainfall amounts.
 (2) The data collected did not include daily rainfall amounts.
 (3) Rainfall averages were collected only from one city.
 (4) Rainfall averages were not compared to a previous year.
35. Which type of energy is being converted into kinetic energy as a marble falls from a shelf?
- (1) electrical potential energy
 (2) gravitational potential energy
 (3) elastic potential energy
 (4) chemical potential energy
36. A battery is designed to provide improved power supply in areas with extremely low temperatures. Which test best determines if a prototype meets this goal?
- (1) Compare the power of the prototype to the power of other standard batteries under normal conditions.
 (2) Compare the lifetime of the prototype to that of a standard battery in a wide range of climate conditions.
 (3) Compare the power storage of the prototype to that of a standard battery at cold temperatures.
 (4) Compare the cost of materials for the prototype to the cost of materials for a standard battery.

37. Students counted the number of organisms located in a one-meter square plot in a grassland prairie. Their data are shown below.

Population Data

Organism	Number of Organisms
Ants	10
Beetles	2
Indian Grass	3
Goldenrod	4
Bluestem	8

Which graph best represents the data?



38. What energy conversion occurs when a person rubs his or her hands together rapidly?

- (1) electrical energy to thermal energy
- (2) electrical energy to chemical energy
- (3) thermal energy to kinetic energy
- (4) kinetic energy to thermal energy

39. A bottle company discovered that caps were being applied with too much force. This caused many bottles to break. Engineers adjusted the capping device so it applies less force to the caps.

Which steps should the engineers take before the adjustment is considered successful?

- (1) adjust the capping device to increase the force applied by the bottle caps
- (2) replace the bottle caps with different caps that cover a larger bottle opening
- (3) compare the company's capping process to other companies' processes
- (4) inspect bottles that have passed through the capping device after the adjustment

40. The data table shows land and water temperatures along a beach in Chennai during a one-day period.

Coastal Temperatures Data Table

Land Temperature (°C)	Water Temperature (°C)
24	22
28	22
33	23
32	25

In what way can the data be used to make a prediction?

- (1) Inland temperatures will help cause tidal surges.
- (2) Water temperatures will help determine coastal temperatures.
- (3) Coastal temperatures will help determine sea levels.
- (4) Water temperatures will help cause inland soil erosion.



END OF THE EXAM