



# FSP SCIENCE CONTEST 2021

**QUESTION BOOKLET**  
**GRADE 5 & 6**

**VIBRANT YOUNGSTERS**

**TIME ALLOWED: 90 Minutes**

**MAXIMUM MARKS: 90**



**FAMOUS STUDENTS PLATFORM**



# INSTRUCTIONS

- 1) DON'T START ATTEMPTING THE PAPER UNTIL INSTRUCTED BY THE INVIGILATOR.
- 2) INSTRUCTIONS FROM THE EXAMINATION INVIGILATOR MUST BE CARRIED OUT PROMPTLY.
- 3) CAREFULLY RECHECK YOUR NAME, FATHER NAME, SCHOOL NAME, ADDRESS ETC AT THE BUBBLE SHEET / ANSWER SHEET.
- 4) RECORD ALL ANSWERS ON THE BUBBLE SHEET ONLY. SELECT BEST ANSWER FROM THE FOUR GIVEN OPTIONS AND MARK ONLY ONE OPTION IN EACH QUESTION.
- 5) USE BLUE / BLACK INK TO FILL UP THE CIRCLES FOR YOUR ANSWERS ON THE BUBBLE SHEET. USE OF LEAD PENCIL IS NOT ALLOWED.
- 6) USE OF ANY HELPING MATERIAL INCLUDING CELL PHONES AND ELECTRONIC DEVICES IS STRICTLY PROHIBITED.
- 7) EVERY CORRECT ANSWER EARNS THREE POINTS. THERE WOULD BE NEGATIVE MARKING. ONE POINT WOULD BE DEDUCTED FOR EVERY INCORRECT ANSWER.
- 8) CANDIDATES MAY NOT LEAVE THE EXAMINATION ROOM UNESCORTED FOR ANY REASON, AND THIS INCLUDES USING THE WASHROOM.
- 9) NO MATERIALS OR ELECTRONIC DEVICES SHALL BE BROUGHT IN TO THE ROOM.
- 10) THERE ARE FIVE CATEGORIES OF THE CONTEST AS UNDER:
  - A) VIBRANT YOUNGSTERS (GRADE 1 & 2)
  - B) VIBRANT YOUNGSTERS (GRADE 3 & 4)
  - C) VIBRANT YOUNGSTERS (GRADE 5 & 6)
  - D) VIBRANT YOUNGSTERS (GRADE 7 & 8)
  - E) VIBRANT YOUNGSTERS (GRADE 9 & 10 / 0-LEVELS)
- 11) ONLY REGISTERED STUDENTS CAN PARTICIPATE IN THE CONTEST.
- 12) NO CANDIDATE SHALL TAKE OUT OF THE HALL ANY ANSWER BOOK(S) OR PART OF AN ANSWER BOOK, WHETHER USED OR UNUSED, OR OTHER SUPPLIED MATERIAL.
- 13) IF A PARTICIPANT DOES NOT UNDERSTAND A WORD OR PHRASE ON THE EXAM PAPER, NEITHER EXAMINER NOR INVIGILATOR IS PERMITTED TO ANSWER.
- 14) FOR INFORMATION ABOUT UPCOMING CONTESTS OR PROVIDING VALUABLE FEEDBACK, PLEASE VISIT [WWW.FSPCOMPETITIONS.ORG](http://WWW.FSPCOMPETITIONS.ORG)
- 15) ANY ACADEMIC MISCONDUCT OR MALPRACTICE MUST BE REPORTED TO FSP VIBRANT YOUNGSTERS AT [INFO@FSPCOMPETITIONS.ORG](mailto:INFO@FSPCOMPETITIONS.ORG)

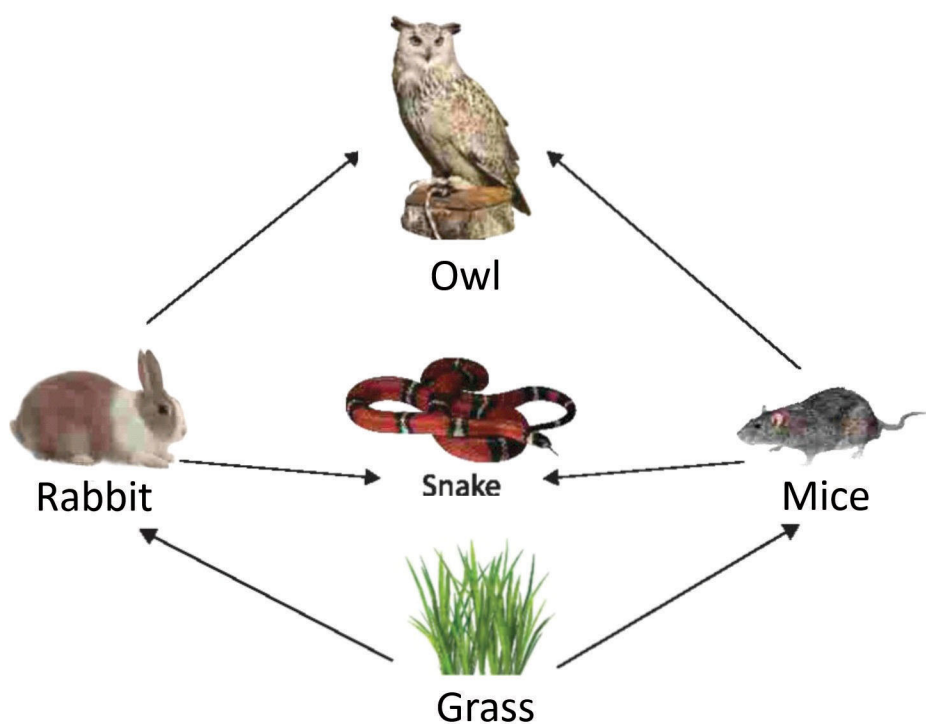
Q.1) Ahmad Is trying to decide which pan to use for cooking. He wants his food to cook quickly and evenly. He has the following types of pans from which to choose:

- Aluminum
- Copper
- Glass
- Plastic

Which material should Ahmad use for cooking?

- Ⓐ Aluminum, because It is a good electrical conductor
- Ⓑ Copper, because it is a good thermal conductor
- Ⓒ Glass, because It is a good electrical insulator
- Ⓓ Plastic, because It is a good thermal insulator

Q.2) The following food web shows different organisms in a field.



Which of the following will happen if animal control removes all of the snakes from the field?

- Ⓐ There will be more mice and rabbits and less grass.
- Ⓑ There will be fewer mice and rabbits and more owls.
- Ⓒ There will be fewer mice and more rabbits and grass.
- Ⓓ There will be more owls, mice, and grass and fewer rabbits.



Q.3) A student hiking in a rocky area on a mountain notice that wide, deep cracks have formed in some of the large rocks. Some of the cracks are so large that the rocks have broken apart. Which process most likely caused these rocks to crack and break?

- Ⓐ Erosion by wind
  - Ⓑ Water freezing and thawing
  - Ⓒ Erosion by fast-moving water
  - Ⓓ Sediments being deposited
- 

Q.4) In six months, how far will Earth have gone in its orbit around the sun compared to how far the moon has gone in its orbit around Earth?

- Ⓐ Earth: completed one orbit of the sun  
Moon: completed one orbit of Earth
  - Ⓑ Earth: completed six orbits of the sun  
Moon: completed twelve orbits of Earth
  - Ⓒ Earth: completed half of one orbit of the sun  
Moon: completed six orbits of Earth
  - Ⓓ Earth: completed a third of one orbit of the sun  
Moon: completed three orbits of Earth
- 

Q.5) Which organism produces oxygen for other organisms?

- Ⓐ a fish
  - Ⓑ a water lily
  - Ⓒ a blue bird
  - Ⓓ a snail
- 

Q.6) Seeds that remain inactive until the right conditions of light, water, and soil are present are called-

- Ⓐ pollen
  - Ⓑ dormant
  - Ⓒ flowers
  - Ⓓ recycled
-



Q.7) A student made observations of four rock samples. Which of these observations most likely describes a sedimentary rock?

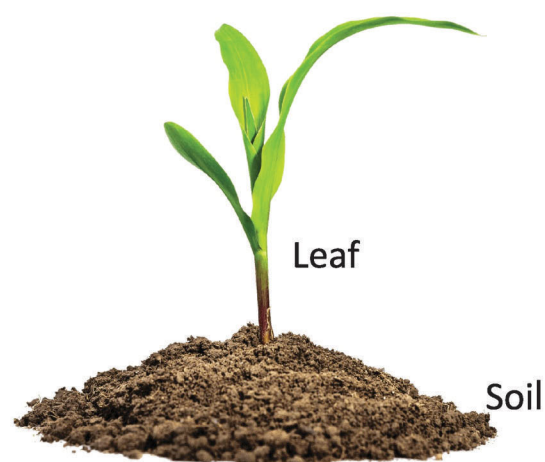
- Ⓐ Sample 1 has bands of light and dark crystals.
  - Ⓑ Sample 2 has pink, grey, and white crystals grown together.
  - Ⓒ Sample 3 is made up of one huge, pale pink crystal.
  - Ⓓ Sample 4 is made up of layers of sand grains cemented together.
- 

Q.8) The flower's stem appears larger under water because the water-



- Ⓐ absorbs light
  - Ⓑ produces light
  - Ⓒ repels light
  - Ⓓ refracts light
- 

Q.9)



The picture shows a sprouting bean plant. The leaf produced will help the plant by-

- Ⓐ absorbing water from the air for nourishment
  - Ⓑ using sunlight for energy in food production
  - Ⓒ reproducing more bean plants for survival of the species
  - Ⓓ adding support for the plant as it grows taller
-

Q.10) Which of these best describes a tornado?

- Ⓐ A winter storm that produces frozen precipitation.
  - Ⓑ A rotating funnel-shaped cloud with strong winds & thunderstorms.
  - Ⓒ A severe weather condition with low temperatures & blowing snow.
  - Ⓓ A storm that forms over warm ocean water & has extremely strong winds.
- 

Q.11) Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock does this model best show?

- Ⓐ sedimentary rock is made of layers.
  - Ⓑ sedimentary rock is cemented bits of rock.
  - Ⓒ sedimentary rock is often limestone.
  - Ⓓ Sedimentary rock is common in Texas.
- 

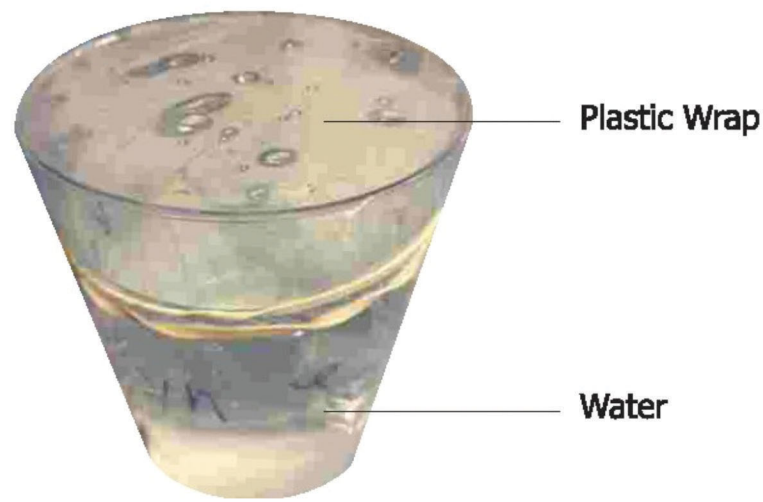
Q.12) Granite is a hard material and forms from cooling magma. Granite is a type of-

- Ⓐ lava stone
  - Ⓑ igneous rock
  - Ⓒ volcanic dust
  - Ⓓ sedimentary rock
- 

Q.13) A student makes a model of the water cycle by using a cup, some water, and plastic wrap. After the student places the model near a sunny window, moisture forms on the inside of the plastic wrap.

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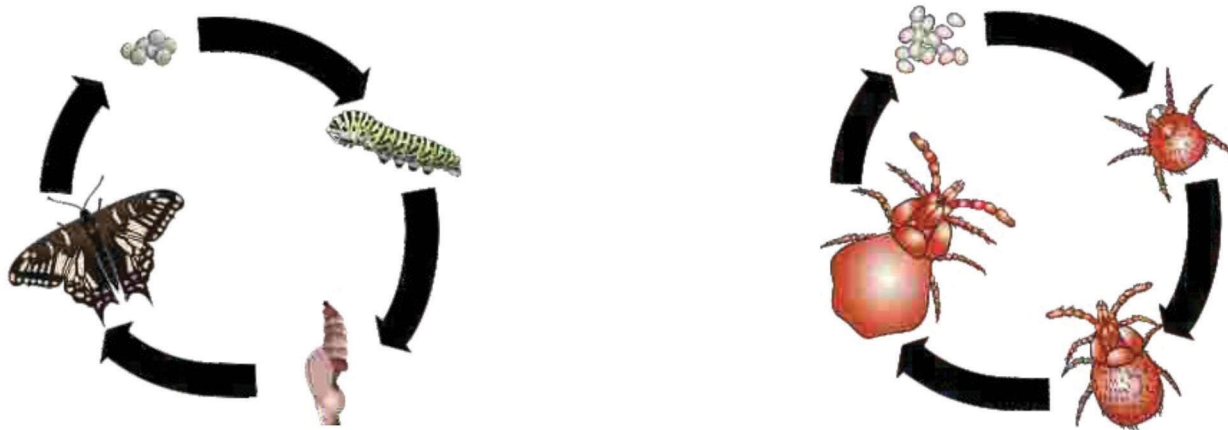




What change is the student most likely observing in this model?

- (A) Freezing
- (B) Condensation
- (C) The warming of air
- (D) The formation of clouds

Q.14) The life cycles of a butterfly and a chigger are shown below.



How is the life cycle of chiggers different from the life cycle of butterflies?

- (A) Chigger larvae have legs.
- (B) Chiggers have a nymph phase.
- (C) Chiggers go through metamorphosis.
- (D) Chigger larvae hatch from eggs.

Q.15) Resources can be classified as renewable or nonrenewable. Which of these resources is classified in the same category as coal?

- (A) Wood
- (B) Wind
- (C) Corn oil
- (D) Petroleum

Q.16) A wide U-shaped valley is shown in the photograph below.



This valley was most likely formed by -

- A flash flooding    
 B a glacier    
 C a hurricane    
 D melting snow

Q.17) There is concern about the effect that overfishing is having on the population of tuna, swordfish, and other large fish in the ocean. An organization has come up with the following four suggestions on how to manage the fish population.

Suggestions for Preserving Fish Population

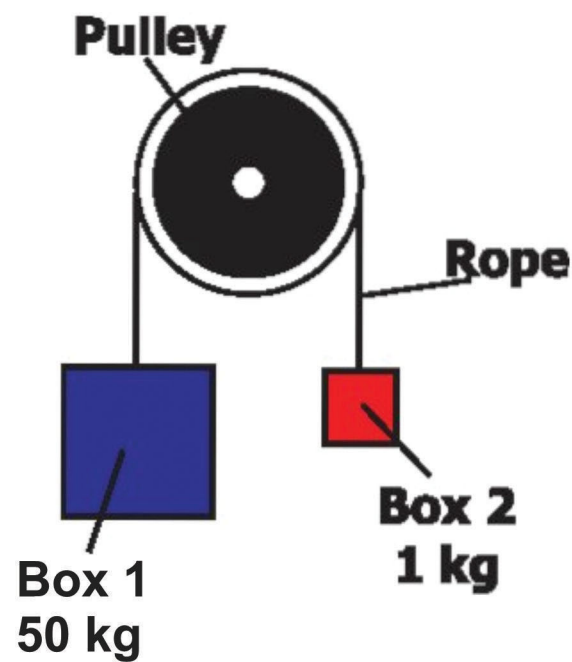
Suggestion	Description
Create fish farms	Build artificial environments inland to produce fish for food
Control fishing	Set limits as to the amount of fish that can be caught and the time of year fishing is done
Increase the population of the fish	Bring in fish from other places to boost the population
Increase the amount of food for the fish	Add nutrients to the water to attract more fish to the area

Which suggestion would conserve the fish in the ocean?

- A Creating fish farms would Increase the number of fish worldwide.  
 B Controlling fishing would help Increase the existing fish population.  
 C Introducing new fish would increase that particular fish population.  
 D increasing the amount of food would encourage fish migration.



Q.18) This diagram shows two boxes hanging over a pulley. The boxes are fastened to the opposite ends of the same piece of rope. The rope does not stretch or break.



What will happen in this situation?

- (A) Box 1 will move up, and Box 2 will move down.
- (B) Box 1 will move down, and Box 2 will move up.
- (C) Both boxes will not move.
- (D) Both boxes will move down.

Q.19) A student glued two pieces of wood together. The student needs to hold the two pieces of wood together tightly until the glue is fully dry the next day. Which of the following tools is best for holding the two pieces of wood together until the glue is dry?



Q.20) Four objects were dropped from a height of 10 meters. The order in which they reached the ground is shown in the table given below:

Falling Objects

Object	Order
Feather	3rd
Golf Ball	1st
Sheet of Notebook Paper	4th
Foam Ball	2nd

The sheet of paper took the longest time to reach the ground most likely because:

- A It has the most mass
  - B It has the most surface area
  - C It has the least weight
  - D It has the maximum weight
- 

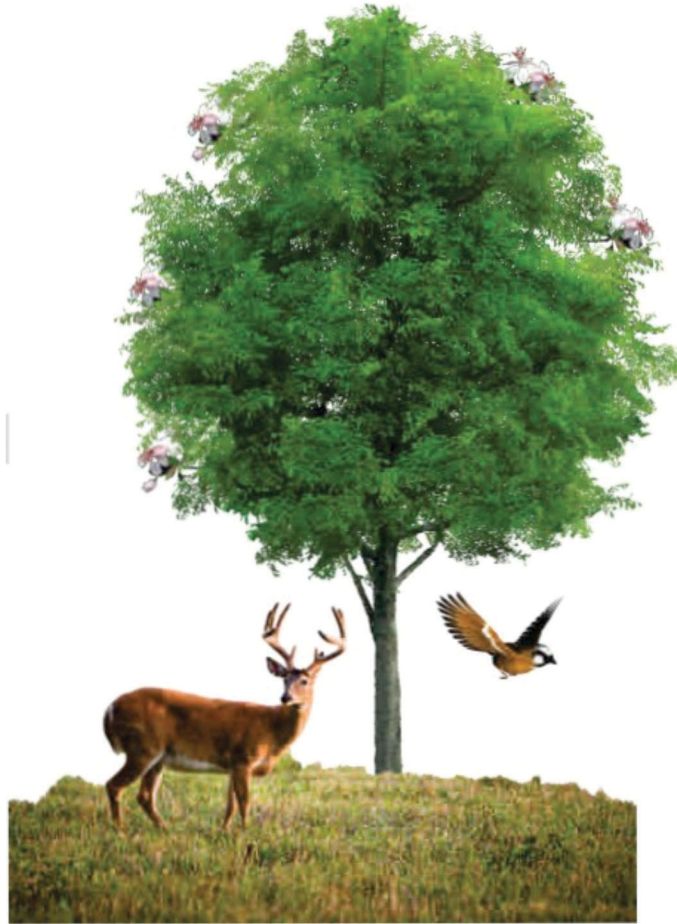
Q.21) A bottle company noticed that bottle caps were being put on bottles with too much force, resulting in broken bottles. Engineers changed the capping device so it would use less force. Which step should the engineers take before the capping device is considered fixed?

- A observe the number of broken bottles after the device has been adjusted
  - B increase the size of the bottle caps used in the capping process
  - C replace the bottle caps with different caps that cover a larger bottle opening
  - D all of the above
- 

Q.22) Some organisms are shown in the drawing on next page.

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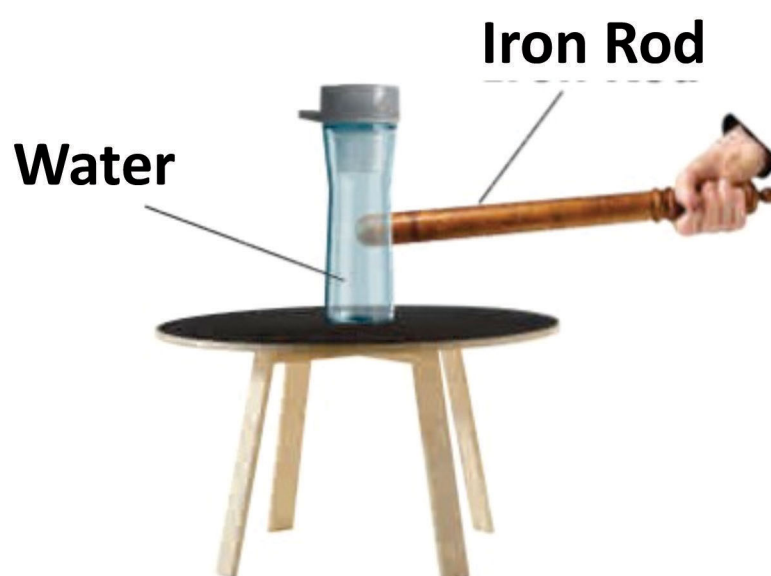
Which statement best compares how these organisms obtain energy?

- Ⓐ The deer, flower, bird, grass, and tree must eat food
- Ⓑ The deer and bird make food, and the tree, grass, and flower must eat food.
- Ⓒ The deer, flower, bird, grass, and tree must make food.
- Ⓓ The tree, grass, and flower make food, and the deer and bird must eat food.

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Study the investigation given below and answer questions 23 and 24.

Q.23) A student pours water into a glass bottle. Next, the student gently taps the outside of the bottle with an iron rod.



Which idea is most likely being investigated by the student?

- Ⓐ energy transfer through materials
- Ⓑ heat conduction through materials
- Ⓒ magnetic properties of materials
- Ⓓ reflective properties of materials

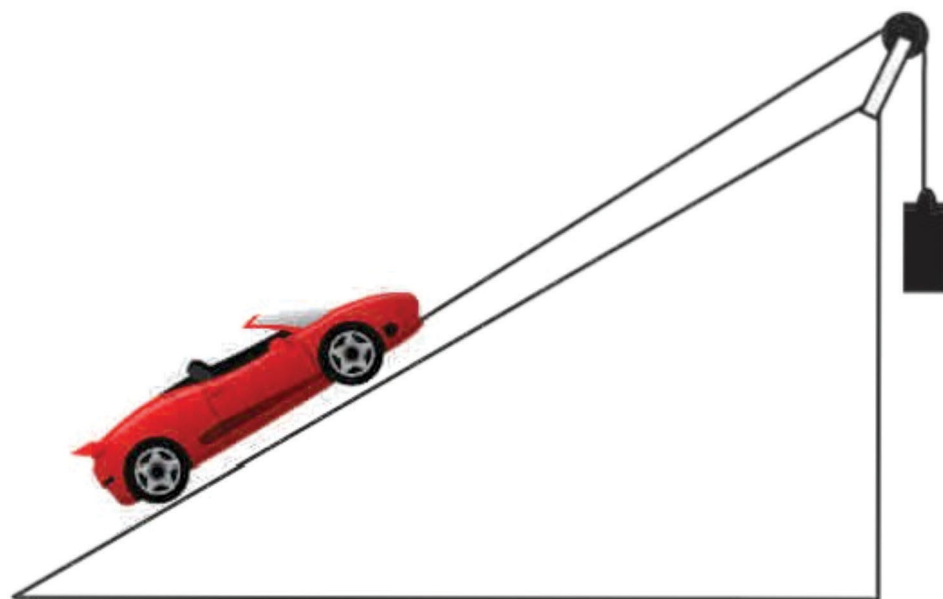
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Q.24) Which observations best support the answer to question 23?

- The temperature of the water remains the same after the student
- Ⓐ taps the bottle with the iron rod. The iron rod and the glass bottle are made of different materials.
  - Ⓑ A sound is produced when the student taps the bottle with the iron rod. The temperature of the water remains the same after the student taps the bottle with the iron rod.
  - Ⓒ A sound is produced when the student taps the bottle with the iron rod. Waves are produced in the water, showing vibration.
  - Ⓓ Waves are produced in the water, showing vibration. The iron rod and the glass bottle are made of different materials.

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Q.25) This diagram shows a ramp with a toy car at the bottom. A string is attached to the front of the car and the string goes over a pulley at the top of the ramp. A weight is attached to the other end of the string.





What would be most responsible for the toy car being pulled up the ramp?

- A friction       B gravity       C kinetic energy       D momentum
- 

Q.26) A student is riding a bike and applies the brakes. Which most helps the bike to stop?

- A friction       B gravity       C heat       D momentum
- 

Q.27) Two groups of children are each pulling on the opposite ends of a rope. If they are pulling on the rope with equal but opposite forces, what will happen to the rope?



- A It will stay in place between the two groups.  
 B It will move toward the right.  
 C It will move toward the left.  
 D It will fall to the ground.
- 

Q.28) Which is the best example of habitat reduction caused by humans?

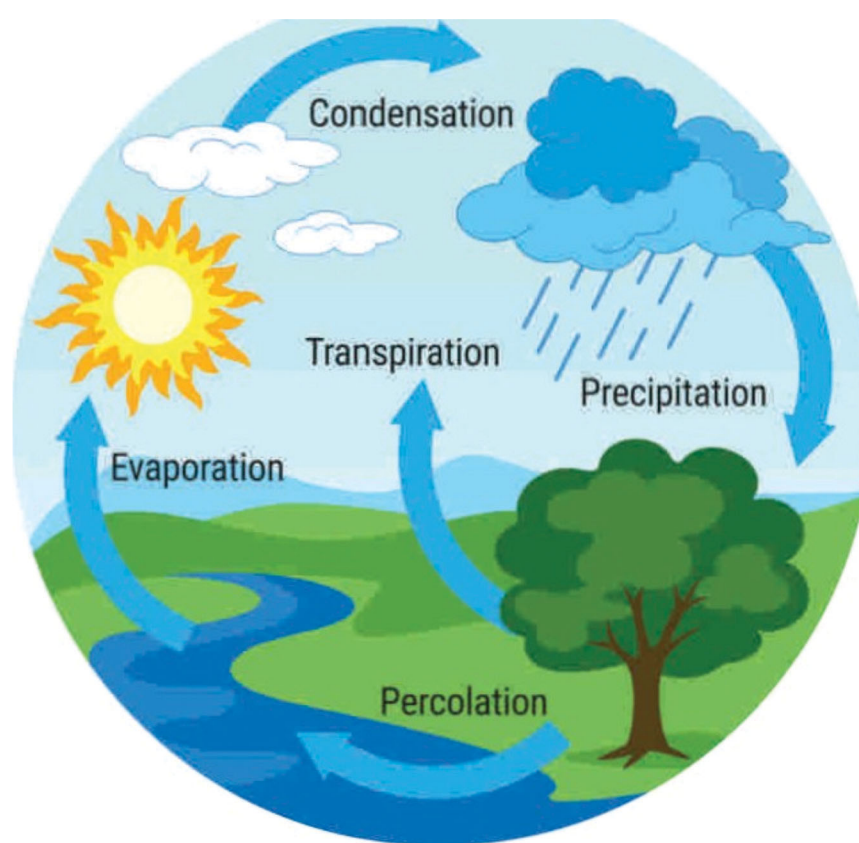
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- Ⓐ Birds and animals flee a forest fire caused by lightning.
  - Ⓑ Birds become sick from eating insects new to their area.
  - Ⓒ Fish swimming to breeding grounds are blocked by dams.
  - Ⓓ A new species of fish migrates up a river, competing with native fish for food.
- 

Q.29) Which of the following statements best describes the climate of an area rather than its weather conditions?

- Ⓐ The summers are hot and humid.
  - Ⓑ The temperature at noon was 86°F.
  - Ⓒ Total rainfall on April 9 was 2 inches.
  - Ⓓ Strong winds are expected tomorrow evening.
- 

Q.30) Not all of the minerals that are added are used by the plants. Some minerals get into streams or lakes. Identify the part of the water cycle that takes minerals into a lake.



- Ⓐ Condensation
  - Ⓑ Evaporation
  - Ⓒ Precipitation
  - Ⓓ Collection
-





# ANSWER SHEET

## INSTRUCTIONS:

- This is a generic answer sheet to be used by participants of all grades. Students of Grade 1-2 will fill in circles of first 20 questions. Grade 3-4 will fill in circles of 25 questions & Grade 5-10 will fill in circles of 30 questions.
- Please recheck your Name, Father Name, Garde & School written below, the same would appear at your certificate.
- Use of lead pencil is not allowed.
- Use only Black / Blue ink to fill in the circles.

Choose only ONE of the FOUR proposed answers (A,B,C or D) & fill in the circles with your answer.

Example of correctly filled table of answers.

<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D	Correct Filling Answer "C"	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D	wrong filling	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D	wrong filling
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Q. No.	Answer				Q. No.	Answer			
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7	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input checked="" type="radio"/> D	22	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input checked="" type="radio"/> D
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