

SCIENCE OLYMPIAD

PRACTICE BOOK



GRADE
4

The Science Olympiad series is an initiative of International Society for Olympiad (ISFO)
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Preface

Our education system effectively provides an introduction to the concepts of Math and Science and helps us understand the underlying concepts. But in its overly generalized approach, which aims to enlighten and test all students of varying caliber and interests, it leaves the exploration of application of all these concepts completely on the students.

This workbook is designed to enable students to explore Science effectively. Designed in accordance with the requirements of the Science Olympiads, the workbook is an efficient tool to achieve comprehensive success at the **ISFO – Science Olympiad**.

The main aim of this workbook is to assist students in developing and improving their ability to solve problems.

Each chapter of the book consists of 3 sets of questions.

- **Section A** (Scientific Reasoning) : This section is created to test the knowledge of scientific concepts and topics pertaining to the respective grades.
- **Section B** (Everyday Science) : This section deals with the application of the concept learnt.
- **Section C** (BrainBox) : Questions to prepare students with HOTS (Higher Order Thinking Skills), based on the syllabus provided.

Logical Reasoning section is provided to equip students with verbal and non-verbal analysis and reasoning skills.

Sample Test Papers and Answer keys have been provided to accelerate the learning process.





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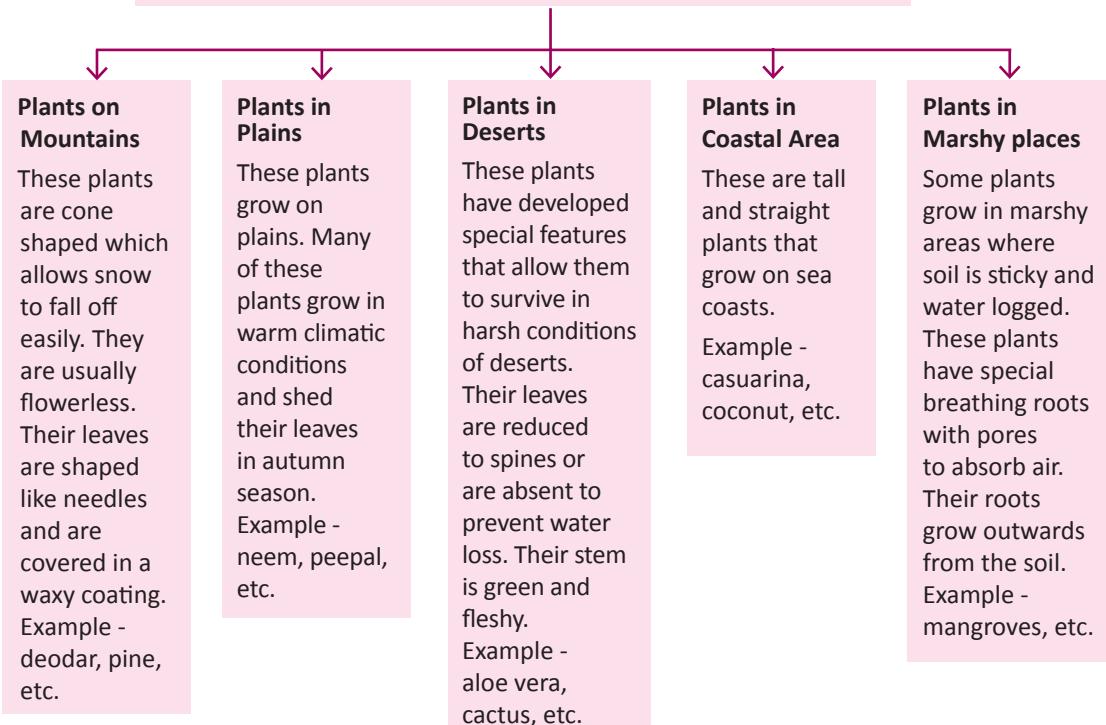
Plant World

All green plants are autotrophs. They can make their own food by taking water and minerals from the soil and carbon dioxide from the atmosphere in the presence of sunlight. This process is called photosynthesis.

All green leaves have a green pigment called chlorophyll which is used to make food during photosynthesis.

All leaves have tiny openings on their undersides called stomata. Stomata help in taking in carbon dioxide during photosynthesis and releasing oxygen.

Classification of Plants on the Basis of their Habitat



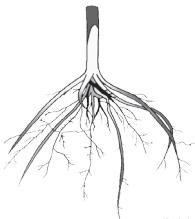
SECTION - A : SCIENTIFIC REASONING

1. Some freshly plucked leaves from a garden plant were dipped into a beaker of hot water. What would you expect to see?
- Bubbles appear on both the surfaces of the leaf
 - More bubbles appear on the underside of the leaf
 - More bubbles appear on the upper surface of the leaf
 - Nothing happens because the leaves were killed by the hot water
2. The diagram below shows the stages of development of an onion plant. Which of the following statements are true about an onion?
- 
- Onion is a seed.
 - The conditions must be right before an onion can grow into a plant.
 - The onion helps the plant to reproduce.
 - Both b. and c.
3. Which of the following is an adaptive feature of mountain plants?
- Cone shape of the plant
 - Needle like Leaves
 - Wax coated Leaves
 - All of the above
4. Give Suitable heading to P and Q.
- ```

 graph TD
 Plants --> Q
 Plants --> P
 Q --> VenusFlyTrap[Venus fly trap]
 P --> Mushroom[Mushroom]

```
- |                            |                         |
|----------------------------|-------------------------|
| a. P- Special Plants       | Q- Saprotrophs          |
| b. P- Insectivorous plants | Q- Saprotrophs          |
| c. P- Saprotrophs          | Q- Insectivorous plants |
| d. P- Land Plants          | Q- Aquatic Plants       |
5. Observe the given image of a plant and answer the following question.  
What is the purpose of needle like leaves of the given plant?
- 
- I. Protect the plant.
  - II. Reduce the rate of water loss.
  - III. Trap more sunlight for photosynthesis.
- Only I
  - I and II
  - II and III
  - Only III
6. The food prepared by leaves is used by the plants for their daily activities. The extra food gets stored as starch in:
- Fruits
  - Stems
  - Roots
  - All of these

7. Which of the following statements about weeds is true?
- Weeds are undesirable plants that grow along with the other plants in a garden or a farm.
  - Weeds should be removed.
  - Weeds use up the water and fertilizers supplied for the useful plants.
  - All of the above
8. The type of tree shown in the figure grows in \_\_\_\_\_. 
- Deserts
  - Marshes
  - Mountains
  - Plains
9. Which of the following energy conversions occurs during photosynthesis?
- Light → Kinetic
  - Light → Chemical
  - Chemical → Heat
  - Heat → Nuclear
10. Why do pitcher plants need to catch and eat insects?
- They grow in soil that is poor in nutrients.
  - They grow in soil that is poor in water.
  - They cannot get carbon dioxide from air.
  - They do not have sufficient chlorophyll and stomata.

11. The underside of a leaf was studied under a microscope and tiny openings were observed. Which of the following statements is true about the tiny openings?
- They take in minerals for the plant.
  - They absorb sunlight.
  - They take in water for the plants.
  - They allow entry of carbon dioxide for photosynthesis.
12. The starch stored in different parts of plants serves as food for:
- Herbivorous
  - Carnivorous
  - Omnivorous
  - Both a. and c.
13. Observe the roots of different plants shown below. Which of the following will most likely absorb the least water and minerals salts from the soil?
- a.  b. 
- c.  d. None of these

14. In which of the given conditions, a potted plant would be able to carry out the process of making food?
- A potted plant placed in fully enclosed wooden cupboard
  - A potted plant placed in dry soil in the pot
  - A potted plant with all its leaves smeared with oil
  - A potted plant placed near an open window and watered regularly
15. Grasses are very small plants which grow in mild conditions. They need only a little amount of water. Choose the suitable option that shows plants belonging to the grass family.
- Neem, peepal, banana and mango
  - Rice, wheat, maize and bamboo
  - Corn, sugarcane, wheat, and pine
  - Lotus, hydrilla, tape gross, and duckweed

## SECTION - B : EVERYDAY SCIENCE

16. I look like a nail. I am chocolate brown in colour and have a strong smell. I help in relieving toothache. Guess my name.
- Clove
  - Turmeric
  - Cinnamon
  - Cardamom
17. Observe the given set ups. Which one of these can be used to show that plants transpire through their leaves?
- a. 
- b. 
- c. 
- d. 
18. A farmer planted some vegetables in a field. This field had certain minerals in the soil which made the ground water taste bitter. How will this affect the taste of vegetables?
- There will be no effect on taste of the vegetable at all because the roots only take in water and required nutrients from the soil.
  - Only the roots of vegetables will taste bitter as they grow in the soil.
  - Only the roots and stems of the vegetable will taste bitter because they contain tiny tubes which transport water and mineral salts.
  - The entire vegetable will taste bitter because the tiny tubes in the stem will transport the bitter water from the roots to all parts of the plant.

19. Observe the given pictures.



Sweet potato



Carrot

What do these two have in common?

- a. They both are food storage organs.
- b. They both are underground stems.
- c. They both are used to reproduce.
- d. Both a. and c.

20. We eat leaves, seeds, stems, fruits and roots of different plants, some are raw and some are cooked. Which of the following are actually flowers of a plant?



Broccoli



Peas



Corn



Tomato

### SECTION - C : BRAINBOX

21. Read the given statements and select the correct option.

- I. Trees growing at high altitudes like mountains have needle like leaves.
- II. Elevated regions have low temperatures because temperature decreases with increase in altitude.

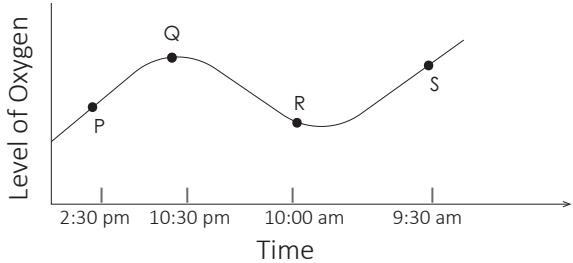
- a. Both statements I and II are correct and II is correct explanation of I.
- b. Both statements I and II are wrong.
- c. Both statements I and II are correct but II is not correct explanation of I.
- d. Statement I is wrong but II is right.

22. Shweta accidentally broke the stem of a sunflower plant, she noticed that the sunflower plant died after two days. This happened because:

- I. The plant lost too much water through the break in the stem.
- II. The plant could not transport food made by the leaves to the rest of the plant.
- III. The plant could not transport water from the roots to the leaves.

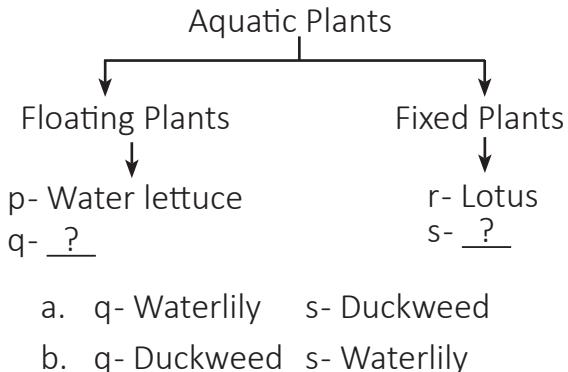
- a. Only I
- b. Both II and III
- c. Only II
- d. I, II and III

23. The given graph shows different levels of oxygen in the air at different times in a garden. Which point on the graph correctly shows the level of oxygen in the air at the given time?



- a. P
  - b. Q
  - c. R
  - d. S

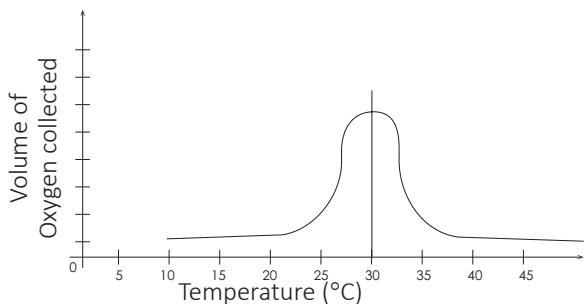
24. Study the classification table and choose suitable option for q and s.



- c. q- Mangrove s- Waterlily
  - d. q- Hydrilla s- Waterlily

25. The given graph is plotted according to the recordings of an experiment to find out the effect of temperature on the rate of photosynthesis of an aquatic plant.

Choose the correct option according to the graph.



- a. Photosynthesis occurs best at 30°C.
  - b. At 45°C there will be few pond organisms.
  - c. The volume of oxygen collected increases with increase in temperature.
  - d. Both a and b

Darken your choice with HB pencil

- |    |                         |                         |                         |                         |     |                         |                                    |                         |                                    |     |                         |                         |                         |                         |     |                         |                         |                         |                         |
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| 3. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 10. | <input type="radio"/> a | <input type="radio"/> b            | <input type="radio"/> c | <input type="radio"/> d            | 17. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 24. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
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| 5. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 12. | <input type="radio"/> a | <input type="radio"/> b            | <input type="radio"/> c | <input type="radio"/> d            | 19. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |     |                         |                         |                         |                         |
| 6. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 13. | <input type="radio"/> a | <input type="radio"/> b            | <input type="radio"/> c | <input type="radio"/> d            | 20. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |     |                         |                         |                         |                         |
| 7. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 14. | <input type="radio"/> a | <input type="radio"/> b            | <input type="radio"/> c | <input type="radio"/> d            | 21. | <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |     |                         |                         |                         |                         |

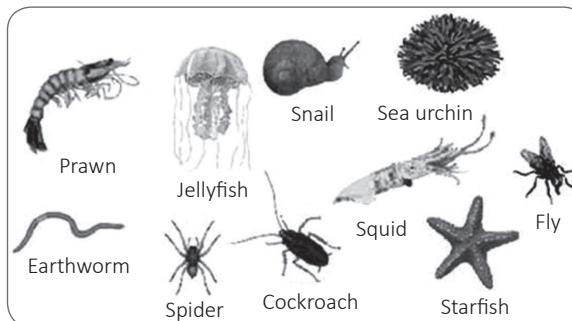
Animals can be classified on the basis of presence or absence of a backbone. Animals having a backbone are called vertebrates.

Examples - human beings, reptiles, fish, birds and mammals

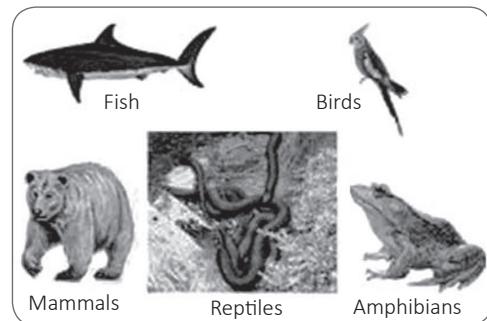
Animals without backbone are called invertebrates.

Examples - insects, snails, worms, slugs, etc.

## Invertebrates



## Vertebrates



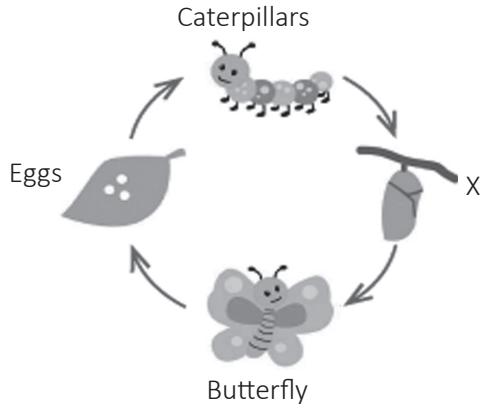
- The different phases under which living organisms go from birth to their death is called life cycle. Some organisms like frogs and butterflies undergo through several physical changes to become an adult. This is called metamorphosis.

## Adaptation in Animals

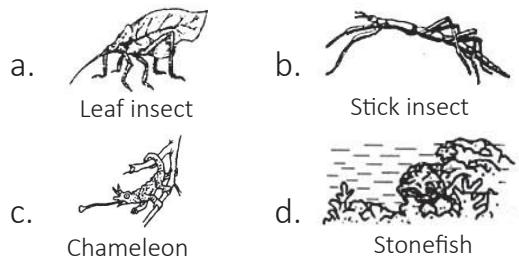
- All animals have adaptive features which allow them to live well in different habitats.
- Animals like deer have very strong legs that give them the ability to run very fast. This helps them to run away from their enemies.
- Animals like grasshoppers and chameleons show camouflage. This is a phenomenon in which an animal's body colour merge or blends with their surroundings which make it difficult for their enemy to spot them.
- Some animals undergo hibernation and migration to escape extreme weather conditions.

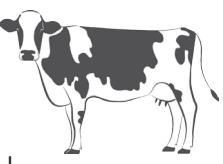
## SECTION - A : SCIENTIFIC REASONING

1. Which of the following shows metamorphosis?
  - a. 
  - b. 
  - c. 
  - d. 
  
2. Choose an example of a vertebrate (X) and an invertebrate (Y).
  - a. X- Reptiles Y- Mammals
  - b. X- Amphibians Y- Birds
  - c. X- Mammals Y- Fireflies
  - d. None of the above
  
3. Observe the life cycle of a butterfly. Here X will be:
 

  
Caterpillars  
Eggs  
Butterfly

  - a. Egg
  - b. Pupa
  - c. Adult butterfly
  - d. Small butterfly
  
4. Which of the following does not have structural adaptations to mimic objects found in their environment?



5. What type of teeth does the animal shown in the figure have? 
  - a. Curved teeth
  - b. Sharp tearing teeth
  - c. Sharp cutting and sucking teeth
  - d. Sharp cutting and strong grinding teeth
  
6. Match the following.

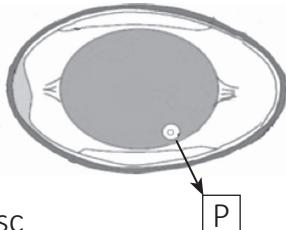
| Column A            | Column B     |
|---------------------|--------------|
| P. Arboreal animals | (i) Parrot   |
| Q. Hibernation      | (ii) Toads   |
| R. Aerial animals   | (iii) Bear   |
| S. Amphibians       | (iv) Monkeys |

  - a. P- (i), Q- (iii), R- (ii), S- (iv)
  - b. P- (ii), Q- (i), R- (iii), S- (iv)
  - c. P- (iv), Q- (iii), R- (i), S- (ii)
  - d. P- (iv), Q- (iii), R- (ii), S- (i)

  
7. Find the odd one among the following.
  - a. Germinal disc, yolk, albumen
  - b. Egg, tadpole, adult frog
  - c. Eggs, birds, mammal
  - d. Crab, fish, sea slugs

8. Identify the part labelled as P in the given figure.

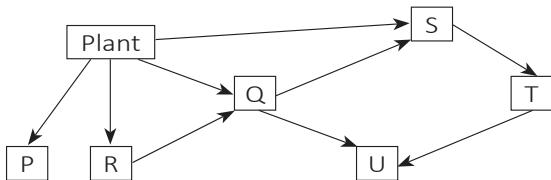
- a. Yolk
- b. Albumen
- c. Eggshell
- d. Germinal disc



9. Which of the following represents same group of animals on the basis of their modes of reproduction?

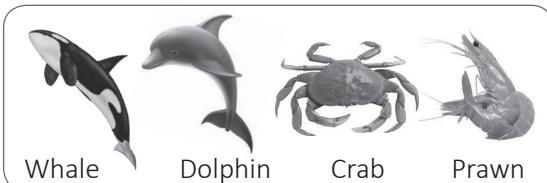
- a. Hen, Duck, Lizard, Crow, Parrot, Frog
- b. Hen, Duck, Lizard, Leopard, Parrot
- c. Parrot, Buffalo, Crow, Frog, Duck, Leopard
- d. Cow, Zebra, Frog, Parrot, Crow, Lizard

10. In the given food web, P, Q, R, S, T and U are consumers. Which of these consumers are both plant and animal-eaters?



- a. U and Q
- b. S and Q
- c. P and Q
- d. S and T

11. Which of the following characteristics is shared by all the animals given in the box?



a. They lay eggs.

b. They breathe through gills.

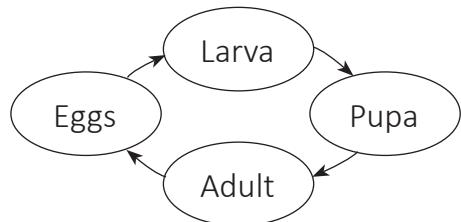
c. They live in water.

d. They take care of their young ones.

12. Why can't a turkey fly?

- I. It has underdeveloped wings.
  - II. It is too heavy.
  - III. It has hollow bones.
  - IV. It has very few feathers.
- a. I and III
  - b. I and II
  - c. II and IV
  - d. I, II, III and IV

13. Study the given diagram showing different stages in the life cycle of an organism.



Which among the following organisms go through the life cycle given here?

- I. Mealworm beetle
  - II. Moth
  - III. Grasshopper
  - IV. Damselfly
- a. I and II
  - b. II and III
  - c. III and IV
  - d. I and IV

14. In what ways is a toad similar to a mosquito?

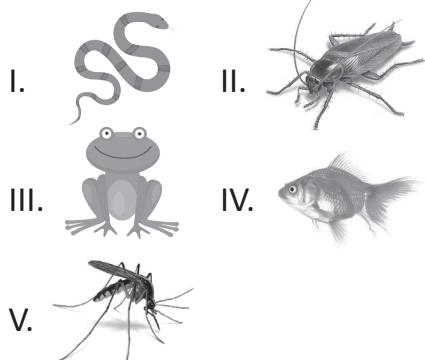
- a. It lays its eggs in water.
- b. It eats insects.
- c. Its young one looks like the adult.
- d. Its life cycle has 4 stages.

15. Which of the following is/are behaviours displayed by animals during hibernation?
- Some animals huddle together during winter to slow down heat loss.
  - Some hibernators can allow their body temperature to drop during hibernation.
  - They feed more during hibernation.
  - Both a and b

## SECTION - B : EVERYDAY SCIENCE

16. Which of these structural adaptations allow the camel to survive in a hot desert?
- Thick fur on the top of the body for shade
  - Thin fur on the rest of the body to allow easy heat loss
  - Large, flat feet to spread their weight on the sand
- a. I and II      b. Only I  
c. I, II and III    d. None of them
17. Ruhi, Aryan, and Tina were discussing about a grassland community. The community was made up of grass, antelopes and lions.  
The children gave following statements about the grassland community.
- Ruhi:** Chief source of energy for each population in the grassland community comes directly or indirectly from the Sun.
- Aryan:** There will be more lions than antelopes in the grassland community.
- Tina:** Without the grass population, only the antelope population will be affected but not the lion population.  
Which of them made a correct statement?
- Ruhi and Aryan
  - Ruhi
  - Tina and Aryan
  - Ruhi and Tina
18. It is not advisable to give fish kept in an aquarium more food than they can eat. Which of the following is/are not the suitable reason for this?
- The presence of decaying food encourages bacterial growth that pollutes the water.
  - The presence of decaying food encourages bacterial growth that may cause disease.
  - The presence of uneaten food will make the water so dirty that the fish cannot see properly.
  - Both a and b

19. Identify the animals which do not have a backbone?



- a. II and V
- b. I and III
- c. I, II, III and V
- d. I and II

20. Grade 4 students have classified few organisms in two categories, group X and Y, as given here –

| Group X   | Group Y   |
|-----------|-----------|
| Butterfly | Toad      |
| Mosquito  | Cockroach |

Which among the following can be placed under group 'X'?

- a. Mealworm beetle
- b. Chicken
- c. Rabbit
- d. Grasshopper

### SECTION - C : BRAINBOX

21. Which of these structural adaptations allow the animal shown in the given figure to survive in its environment?

- I. White body colour
  - II. Long feet
  - III. Clawed paws
  - IV. Thick covering of fur
- a. Only I
  - b. Only III
  - c. I and IV
  - d. Only IV

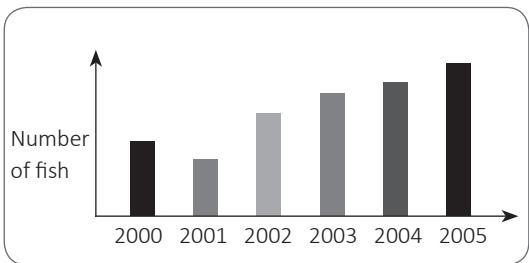


- 22.
- I. Food chains follow a single path as animals eat each other.
  - II. Food webs show how plants and animals are interconnected by different paths.

Which of the above statements are correct?

- a. Only I
- b. Only II
- c. Both I and II
- d. None of them

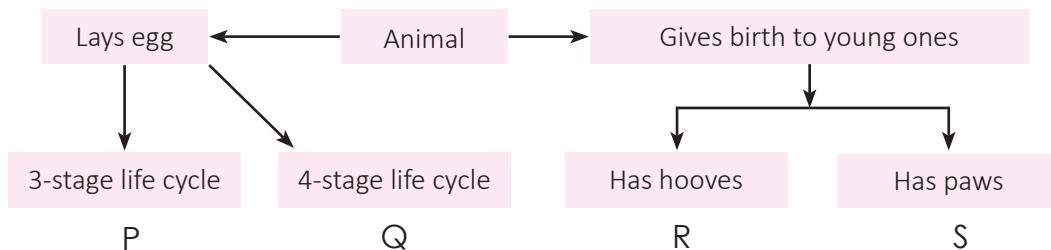
23. Study the given bar graph showing the number of fish in a pond over six years. Answer the following question on the basis of your study.



What could be the reason behind the increase in the number of fish from 2000 to 2005?

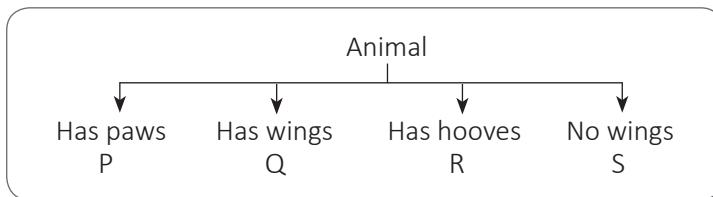
- a. The fish reproduced extensively.
- b. The decrease in the number of aquatic plants.
- c. The increase in the amount of pesticides in the water.
- d. All of the above

24. Study the given flow chart and select the correct option for P, Q R and S.



- a. P- Penguin, Q- Dragonfly, R- Giraffe S- Rabbits
- b. P- Dragonfly, Q- Butterfly, R- Horses, S- Cats
- c. P- Frog, Q- Giraffe, R- Camel, S- Rabbits
- d. P- Dragonfly, Q- Horses, R- Frog, S- Cats

25. Study the chart shown below. Which of the following options has an incorrect example?



- a. (P)
- b. (Q)
- c. (R)
- d. (S)

Darken your choice with HB pencil ——————

- |                            |                         |                         |                         |                             |                         |                         |                         |                             |                         |                         |                         |                             |                         |                         |                         |
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| 7. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 14. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 21. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |

# Human Body and Food

Mouth, food pipe, stomach, intestines and anus work together in digestion of food. Collectively they form the digestive system.

- Teeth are also a part of digestive system. They break down the food into smaller particles to make it easy to digest. Human beings have two sets of teeth — permanent teeth and temporary teeth.

## Nutrients in Food



Fig: Sources of carbohydrates



Fig: Sources of fats

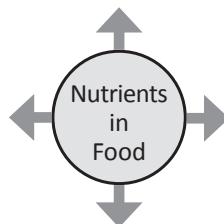


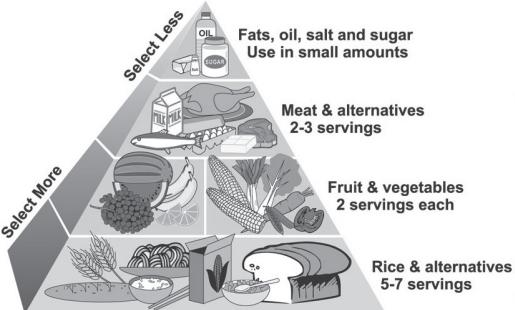
Fig: Sources of protein



Fig: Sources of vitamins and minerals

- Roughage is the undigestable substance present in food. It plays a vital role in the proper functioning of the digestive system.

## SECTION - A : SCIENTIFIC REASONING

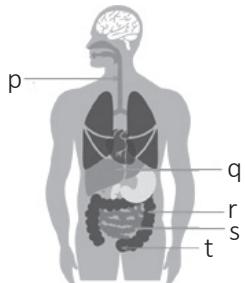
1. Select the incorrect match among the following.
- Incisor – Scissors
  - Canine – Fork
  - Premolar – Knife
  - Molar – Grinder
2. Which of the following is a rich source of roughage?
- 
  - 
  - 
  - 
3. According to the balanced diet pyramid we should eat less \_\_\_\_\_.
- 
- The diagram shows a triangular food pyramid. The base layer is labeled "Rice & alternatives 5-7 servings". The second layer from the base is labeled "Fruit & vegetables 2 servings each". The middle layer is labeled "Meat & alternatives 2-3 servings". The top layer is labeled "Fats, oil, salt and sugar Use in small amounts". The left side of the pyramid has a vertical label "Select More" and the right side has "Select Less".
- Grains and cereals
  - Fats, oils, salts and sweets
  - Fruits and vegetables
  - Meat, poultry, fish and eggs
4. Our nose and ears are flexible because they are made of \_\_\_\_\_.
- Bone marrow
  - Joints
  - Cartilage
  - Bones
5. Identify the correct order of digestion of food in the human body.
- Mouth → food pipe → stomach → small intestine
  - Mouth → stomach → large intestine → food pipe
  - Mouth → food pipe → stomach → anus
  - Mouth → stomach → large intestine → small intestine
6. Read the given information and give an another example for "X".
- Baking (X)

↓

Bread Cake
- Roti and french fries
  - Dal and rice
  - Biscuits and pastry
  - Samosa and potato chips
7. The function of incisor teeth can be best illustrated by the function of \_\_\_\_\_.
- 
  - 
  - 
  - 

8. Which of the following statements is incorrect?
- Food can be preserved for a long period by adding preservatives.
  - Food can be cooked by boiling, roasting, frying, baking and steaming.
  - Roughage is digestible.
  - Breaking of food into simpler forms is called digestion.
9. Boiling milk and then quickly cooling it down is a popular preservation method.  
Name the method.
- Canning
  - Pickling
  - Freezing
  - Pasteurisation
10. When we chew food in our mouth, what does our tongue do?
- It crushes the food into smaller pieces.
  - It digests food.
  - It mixes the food with saliva and forms it into a ball.
  - It covers the windpipe so that the food doesn't enter the windpipe.
11. Which of the following food items is good for a 5-6 month old baby?
- Fruits and vegetables
  - Semi-solid food
  - Oily food
  - Nuts
12. Study the diagram given below and answer the following question.
- Undigested food → Large intestine → Out through the anus
- This shows that the organ of excretion is \_\_\_\_\_.
- Small intestine
  - Anus
  - Both a and b
  - None of these
13. Which of the following is passed into the large intestine from the small intestine?
- Digested food
  - Roughage
  - Water
  - Both b and c
14. Which of the following shows the correct difference between wind pipe and gullet?
- |    | Wind pipe                      | Gullet                   |
|----|--------------------------------|--------------------------|
| a. | Part of the respiratory system | Part of excretory system |
| b. | Tube-like structure            | Bean-shaped structure    |
| c. | Passage for air                | Passage for food         |
| d. | Joined to the liver            | Joined to the kidneys    |

15. In which parts of the human digestive system do the following processes occur?



- I. Break down of food by the action of acid and enzymes
  - II. Absorption of water from the blood
- I – q, II – r
  - I – p, II – r
  - I – s, II – t
  - I – q, II – t

## SECTION - B : EVERYDAY SCIENCE

16. Riya's mother has prepared tomato sauce. She wants to add a preservative in it so that the tomato sauce can be preserved for a long period of time.

Suggest her a preservative for the tomato sauce.

- Sodium Benzoate
- Salt
- Oil
- None of the above

17. We eat a variety of food items. They are categorised in different groups. Which one of the following is incorrectly grouped?

- Fats, oil, salts and sweets
- Meat, poultry, cereals and fish
- Rice, wheat, maize and pulses
- Carrot, cabbage, grapes and mango

18. I am four in number inside your mouth. I have sharp straight edges.

You cannot cut or bite your food without me. Guess my name.

- Incisors
- Canine
- Molar
- Premolar

19. Intake of \_\_\_\_\_ prevents us from scurvy and it also helps in curing common cold.

- Green leafy vegetables
- Whole wheat bread
- Egg and meat
- Citrus fruits

20. Observe the given figures showing different methods of cooking. Identify these methods and select the correct option.

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

- a. A- Baking, B- Steaming,  
C- Frying, D- Boiling
- b. A- Steaming, B- Frying,  
C- Baking, D- Boiling
- c. A- Steaming, B- Baking,  
C- Frying, D- Boiling
- d. A- Steaming, B- Boiling,  
C- Baking, D- Frying

### SECTION - C : BRAINBOX

21. In what way(s) are thigh muscles and arm muscles similar?

- I. They create movement by contracting and relaxing.
- II. They work in pairs.
- III. They are attached to bones.

- a. Only I
- b. I and II
- c. II and III
- d. I, II and III

22. Read the following statements about the structure of teeth.

- I. Enamel is the outer, hard layer which covers the tooth.
- II. Dentine lies under the enamel.
- III. The core of the tooth is called pulp.

Which of the above statements are correct?

- a. I and II
- b. II and III
- c. I, II and III
- d. None of these

23. Rahul made a table to show some common deficiency diseases and nutrients that cure them.  
Which one is not correctly matched?

| Diseases        | Deficits   |
|-----------------|------------|
| Night Blindness | Vitamin A  |
| Marasmus        | Vitamin K  |
| Beri-Beri       | Vitamin B1 |
| Goitre          | Iodine     |

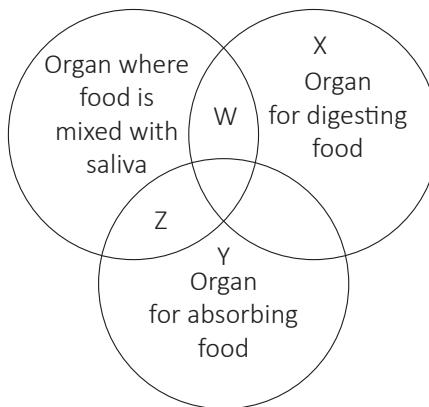
24. The given statements describing the process of digestion are not arranged in a correct sequence. Arrange them in the correct sequence and select the correct option for them.

- P. Mixing with saliva
  - Q. Expulsion of faeces
  - R. Complete digestion of food and absorption of nutrients
  - S. Absorption of water
  - T. Churning of food and addition of digestive juices
- a. P → T → R → S → Q
  - b. P → R → T → Q → S
  - c. P → T → R → Q → S
  - d. S → T → P → Q → R

25. Study the given Venn diagram.

Which part represents the small intestine?

- a. W
- b. X
- c. Y
- d. Z



— Darken your choice with HB pencil —

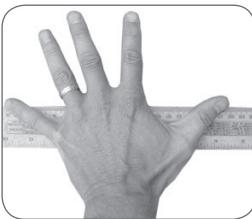
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| 6. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 13. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 20. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |                                                                                                     |
| 7. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 14. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d | 21. <input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d |                                                                                                     |

# Measurement

Measurement means to measure length, weight or height of an object. We need to measure different things in our life.

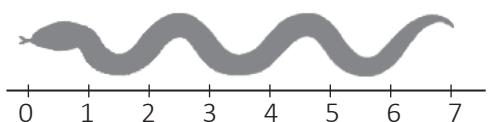
Example - Green grocers measure the quantity of vegetables before we purchase them. We measure the height of a person and the weight of luggage.

| Length                                                                                                                                               | Mass                                                                                                                                                                                | Capacity                                                                                                                        | Temperature                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In ancient days people used their body parts to measure lengths, such as hand span and cubit. Length is measured in meters (m) and centimeters (cm). | The amount of matter that an object contains is called its mass. A lever balance and electronic balance are used to measure mass. Mass is measured in kilograms (Kg) and grams (g). | The amount of liquid that a container can hold is called its capacity. Capacity is measured in litres (l) and millilitres (ml). | The measure of hotness or coldness of an object is called its temperature. Temperature is measured with the help of a thermometer. It is measured in degrees Celsius and degrees Fahrenheit. |



## SECTION - A : SCIENTIFIC REASONING

1. What is the length of the snake shown in the figure on inch scale?



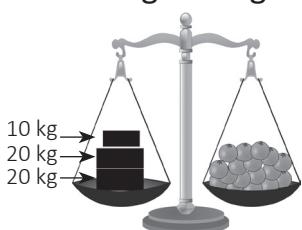
- a. 4 inches
- b. 5 inches
- c. 7 inches
- d. 3.5 inches

2. One centimetre on a scale is divided into 20 equal divisions. The least count of this scale is:

- a. 21 cm
- b. 1 mm
- c. 0.2 mm
- d. 0.5 mm

3. How much do the oranges weigh?

- a. 52 kg
- b. 50 kg
- c. 50 litre
- d. 50 ml



4. Which of the following instruments cannot be used to measure weight?

- a. Spring balance
- b. Beam balance
- c. Galvanometer
- d. Analytical balance

5. The weight of one mango = 250 grams. How many mangoes will weigh 2 kilograms?

- a. 4
- b. 5
- c. 6
- d. 8

6. There are 2 dozen eggs in a box. Half of them are cracked. How many eggs are not cracked?

- a. 1 dozen eggs
- b. 12 eggs
- c. 14 eggs
- d. Both a. and b.

7. The volume of a cuboid is calculated by the product of its length, width and height. Which one of the following types of unit is used to measure the volume of a cuboid if the standard unit of length is metre?

- a. Standard unit
- b. Derived unit
- c. Multiplier unit
- d. All of these

8. The smallest time measured by a wrist watch accurately is:

- a. 1 millisecond
- b. 60 seconds
- c. 1 second
- d. 1 hour

9. Choose the incorrect statement among the following.

- a. Distance between the Earth and the Sun is measured in centimetres.
- b. 1 dozen is equal to 12.
- c. Time is measured in seconds.
- d. Liquids are measured in litres and millilitres.

10. Which among the following has more mass?



a.



b.



c.



d.

A bowl of cooked rice

A bowl of sugar

A bowl of iron nails

A bowl of puffed rice

## SECTION - B : EVERYDAY SCIENCE

11. Read the given conversation and answer the question that follows.

Ruchi - I want to buy a scarf for my mother.

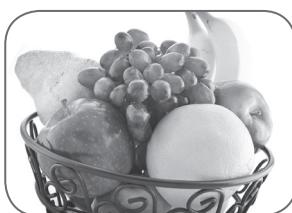
Pihu - I want to buy a gown for my sister.

Who will have to buy the longer piece of garment?

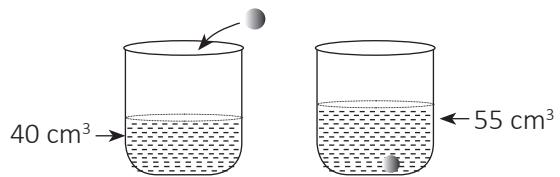
- a. Ruhi
- b. Pihu
- c. Both will require equal meter of clothes.
- d. None of the above

12. Estimate the mass of the objects shown in the picture.

- a. 12 grams
- b. 10 litre
- c. 20 meter
- d. 2 kg



13. Rohan took a container which contained  $40 \text{ cm}^3$  of water. He dropped a marble of weighing 2 g into the container. The rise in water level because of the marble is shown in the given figure.



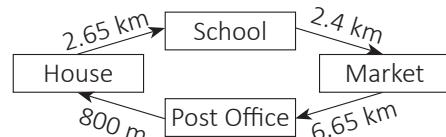
What was the volume of marble?

- a.  $55 \text{ cm}^3$
- b.  $95 \text{ cm}^3$
- c.  $15 \text{ cm}^3$
- d. Insufficient data

14. Thermometers are used to measure body temperature. There are a variety of thermometers used for different purposes. Which among the following cannot be used to measure the temperature of a human body?

- a. Laboratory thermometer
- b. Digital clinical thermometer
- c. Ear thermometer
- d. Both b. and c.

15. A student cycled from his house to school, then to the market, then to the post office and returned home.

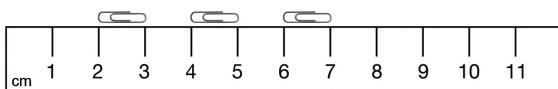


What was the total distance covered by the student?

- a. 12.4 km
- b. 12.5 km
- c. 10.4 km
- d. 12.0 km

## SECTION - C : BRAINBOX

16. What is the total length of the three paper clips?



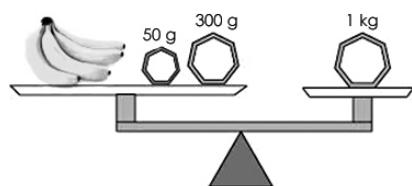
- a. 2.5 cm      b. 3.0 cm
- c. 2.2 cm      d. 1.5 cm

17. Choose the correct option.



- a) The temperature in the thermometer is the normal human body temperature.
- b) The temperature in the thermometer is below the normal human body temperature.
- c) The temperature in the thermometer is above the normal human body temperature.
- d) None of these.

18. What is the weight of the banana in the given figure?



Darker your choice with HB pencil

- |                                                                                                    |                                                                                                     |                                                                                                     |                                                                                                     |
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## Living and Non-living Things

Our environment includes living and non-living things.

The non-living components of the environment are soil, water and air.

The living components are germs, plants, animals and people.

Our environment becomes polluted when harmful substances (pollutants) are released in the air, water and land.

## Air

Air contains water vapour, smoke and dust. It forms a layer around the Earth called atmosphere.

An air current forms when hot air rises up and cool air moves to take up its space.

Air pollution is the release of gases, chemicals and particles into the atmosphere that harm living beings.

Air pollution causes respiratory diseases such as asthma, bronchitis, lung cancer, etc.

It also causes global warming and acid rain.

## Water

Water cycle (evaporation → condensation → precipitation) maintains a continuous flow of water between atmosphere and land.

Water may have impurities. Sedimentation, decantation, filtration and boiling are done to purify water.

Water pollution occurs when chemicals, sewage and garbage enter lakes, streams, rivers and oceans. Polluted water causes death of aquatic animals. When it is used for drinking, it causes diseases like jaundice, dysentery, etc.

## Soil

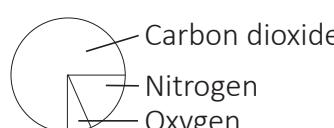
Soil is the topmost layer of the Earth's surface and consists of sand, humus, water and air.

Soil or land pollution is the pollution of Earth's surface. It is caused by industrial activities, improper handling of trash and agricultural practices.

Reduce, reuse and recycle should be our motto to reduce soil pollution.

## SECTION - A : SCIENTIFIC REASONING

1. Bronchitis and asthma are caused by:
- Water pollution
  - Air pollution
  - Global warming
  - Heat
2. Fine volcanic ash is ejected when active volcanoes erupt. Volcanic ash is an example of \_\_\_\_\_.
- Noise pollution
  - Air pollution
  - Water pollution
  - Land pollution
3. The greenhouse effect is the:
- Trapping of heat in the outer troposphere
  - Trapping of air in the outer troposphere
  - Trapping of light in the outer troposphere
  - Trapping of water vapour in the outer troposphere
4. Read the given information about Y and identify it.
- Y cannot be recycled  
but it is biodegradable.
- Waste paper
  - Soft drink can
  - Wine bottle
  - Left - over food
5. Rivers constantly erode the soil along their banks. This can be prevented by:
- Over grazing
  - Terrace farming
  - Afforestation
  - Building
6. Choose the correct option for X and Y.
- | Biodegradable<br>X | Non-biodegradable<br>Y |
|--------------------|------------------------|
| a. Fruits          | Vegetable peals        |
| b. Paper           | Polythene              |
| c. DVDs            | Metal can              |
| d. Polythene       | Rubber tyres           |
- 7.
- The diagram illustrates a simple convection cell. On the left, three vertical arrows point upwards from the text 'Hot air'. On the right, three horizontal arrows point towards the center from the text 'Cool air'.
- The above figure shows \_\_\_\_\_.
- That hot air rises up
  - That cool air moves to take up its space
  - Air current
  - All of the above
8. Run off water from manured farms enters a river. This will affect the river by causing:
- The river to dry up.
  - Algae to grow in the river.
  - Water in the river to become solid.
  - All of these

9. Which of the following statements is incorrect?
- Forests protect the soil from erosion.
  - Plants and animals in forests are not dependent on each other.
  - Forests affect climate and water cycle.
  - Soil helps forests to grow and regenerate.
10. Whenever we use a T.V, hair dryer or an air conditioner, we release 'Y' gases into the air. Which of these is one of the 'Y' gases?
- CNG
  - Oxygen
  - Carbon dioxide
  - Nitrogen
11. Which of the following is not responsible for causing water pollution?
- Afforestation
  - Throwing chemical waste products into rivers
  - Putting unwanted waste in abandoned fields
  - Sewage from cities thrown into rivers.
12. Which of the following is the best method of filtration of polluted water?
- Filtering through clean cloth
  - Filtering through filter paper
- c. Filtering through strainer
- d. All of these
13. The Earth's atmosphere is made up of different gases. Which of the following pie charts best describes the composition of gases?
- a. 
- b. 
- c. 
- d. 
14. Read the following statements.
- I. I am present in air.

II. Your body needs me to produce energy.

III. I enter your lungs when you breathe in.
- Name the gas that represents above statements.
- Oxygen
  - Carbon dioxide
  - Nitrogen
  - Hydrogen

15. Match the following and select the correct option.

| Causes of soil erosion                     | Methods of soil conservation |
|--------------------------------------------|------------------------------|
| A. Deforestation                           | (i) Wind breakers            |
| B. Running water carries top soil with it. | (ii) Terrace farming         |
| C. Strong wind blows away top soil.        | (iii) Afforestation          |

## SECTION - B : EVERYDAY SCIENCE

16.



The above cycle shows formation of harmful rain. What is the name of the harmful rain that causes damage to forests, soil and human health?

- a. Bad rain      b. Acid rain
- c. Toxic water    d. None of them

17. Read the lines said by Riya and answer the following questions.

Riya: I met a man who was suffering from skin cancer.  
He said that skin cancer is caused because of harmful sun rays.

Name the harmful sun rays that cause skin cancer.

- a. Infrared rays    b. Ultraviolet rays
- c. Rainbow          d. None of these

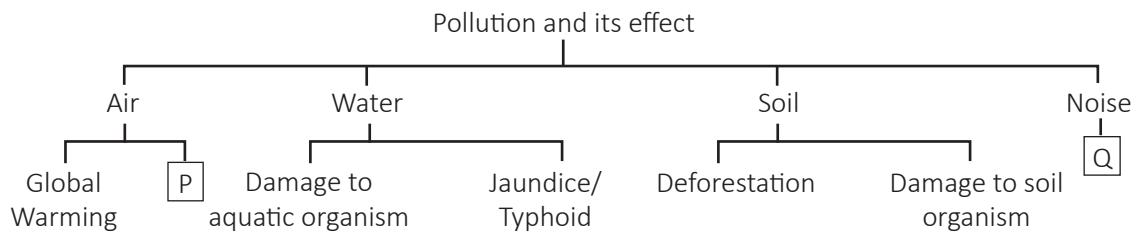
18. Aman observed a sudden increase in the amount of algae in a water body over a few days. What could be the possible reason?

- a. Imbalanced water cycle
- b. Dumping of electronic waste in nearby area
- c. Smoke discharge from factories
- d. Use of heavy chemical fertilizers in nearby fields

19. We can make a positive impact on our environment by one action. Which of the following justifies the given statement?

- a. Help the people enjoy a high standard of environmental public health.
- b. Help maintain a clean living environment.
- c. Use modern technology to help farmers reduce the use of pesticides.
- d. All of these

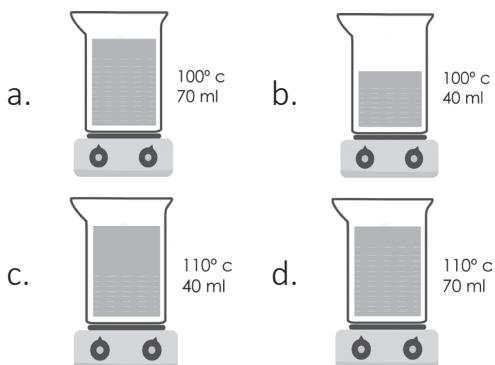
20. Complete the classification chart shown below.



- |                         |                           |
|-------------------------|---------------------------|
| a. P- Acid rain         | Q- Hearing impairment     |
| b. P- Breathing problem | Q- Acid rain              |
| c. P- Asthma            | Q- Less number of animals |
| d. P- Acid rain         | Q- Asthma                 |

### SECTION - C : BRAINBOX

21. Aman continued to heat 70 ml of pure water for 10 minutes after it reached boiling point. Which of the following figures show the result at the end of the experiment conducted by Aman?



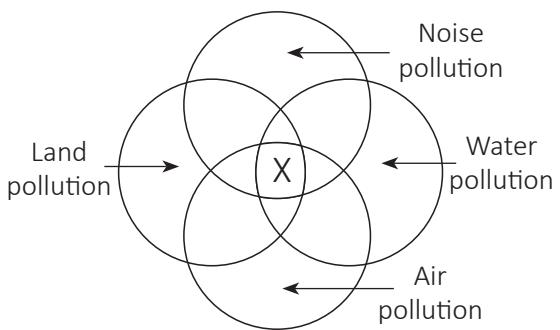
22. Arnav studied 2 groups of things.

| Biodegradable  | Non-biodegradable |
|----------------|-------------------|
| Bones          | Gold chains       |
| Meat           | Clay pots         |
| Dairy products | Cans              |

He made some conclusions about his table. Which one of the following conclusions is correct.

- a. All non-biodegradable objects are placed in the correct column.
- b. All living things are non-biodegradable.
- c. Biodegradable objects come only from animals.
- d. Most objects obtained from living resources are biodegradable.

23. Study the given Venn diagram.



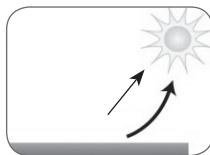
What could X be?

- a. A group of people smoking cigarettes
- b. Youngsters dancing to loud music.
- c. A farmer spraying pesticides on his crops.
- d. Construction work going on at a building site.

24. Arrange the following steps showing process of water cycle in the correct sequence.



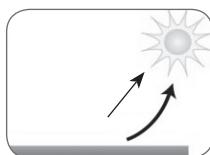
W



X



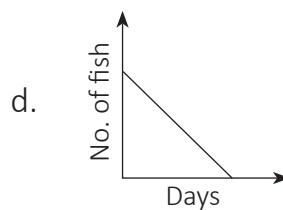
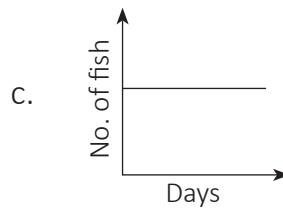
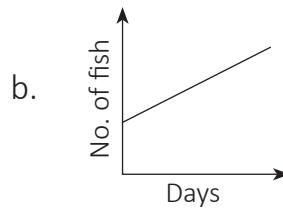
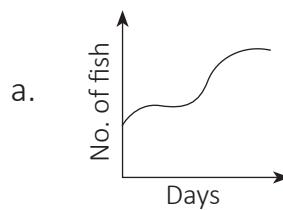
Y



Z

- a. W, X, Y, Z
- b. Z, X, Y, W
- c. X, W, Z, Y
- d. W, Z, Y, X

25. Study the given graph showing changes in the number of fish in four different tanks. Which one of all the tanks could be polluted?



Darken your choice with HB pencil

- 1.  a  b  c  d
- 2.  a  b  c  d
- 3.  a  b  c  d
- 4.  a  b  c  d
- 5.  a  b  c  d
- 6.  a  b  c  d
- 7.  a  b  c  d

- 8.  a  b  c  d
- 9.  a  b  c  d
- 10.  a  b  c  d
- 11.  a  b  c  d
- 12.  a  b  c  d
- 13.  a  b  c  d
- 14.  a  b  c  d

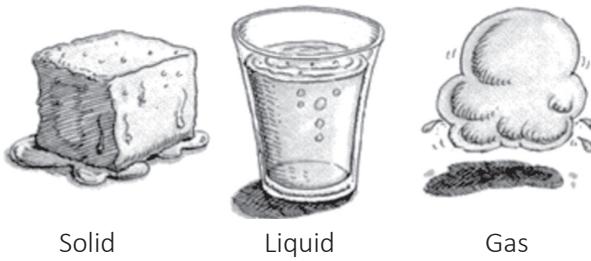
- 15.  a  b  c  d
- 16.  a  b  c  d
- 17.  a  b  c  d
- 18.  a  b  c  d
- 19.  a  b  c  d
- 20.  a  b  c  d
- 21.  a  b  c  d

- 22.  a  b  c  d
- 23.  a  b  c  d
- 24.  a  b  c  d
- 25.  a  b  c  d

# Material and Matter

Anything that has mass and takes up space is called matter. All living and non-living things are made up of matter.

- Matter is made up of very tiny particles called molecules and it exists in three different forms, namely solid, liquid and gas.



- Solids have a definite shape and volume. Liquids can flow easily and they have no fixed shape, but they have a definite volume. Gases have neither fixed shape nor fixed volume.
- A solid substance which dissolves in a liquid is called solute. The liquid in which it is dissolved is called the solvent. The mixture of solute and solvent is called solution.

| Material | Property                                         | Uses                                      |
|----------|--------------------------------------------------|-------------------------------------------|
| Glass    | Transparent, waterproof and hard                 | Window pane, mirror                       |
| Plastic  | Light, waterproof, strong and durable            | Plastic bags, utensils, raincoat          |
| Metal    | Hard, strong, durable, good conductor of heat    | Jewellery, iron nail, decorating articles |
| Wood     | Light, strong, durable and bad conductor of heat | Furniture, door, incense sticks           |
| Paper    | Light and flexible                               | Notepads, kite, paper envelope            |
| Rubber   | Waterproof and flexible                          | Rubber bands, toys                        |

## SECTION - A : SCIENTIFIC REASONING

- Which of the following will not freeze when cooled down to 0 °C?
  - Water
  - Alcohol
  - Salt
  - Table sugar

- In which of the following groups would you place a porcelain soup bowl?

Group P – Vase, Jar, Mug

Group Q – Socks, Gloves, Scarf

Group R – Letter, Envelope, Stamp

Group S – Tyre, Eraser, Rubber Band

- Group 'P'
- Group 'Q'
- Group 'S'
- All of these

- Which of the following objects will be equally useful if made from any of the three materials - plastic, metal and wood?

- |                  |               |
|------------------|---------------|
| I. Oven          | II. Cupboard  |
| III. Photo frame | IV. Life Vest |

- I and II
- II and III
- I and III
- I and IV

- Study the given materials and choose the correct statement.



Wooden basket   Leather gloves   Wooden chair

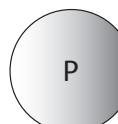
- They are made of materials obtained from living things.
- They are made of materials obtained from Earth's crust.
- They have same the hardness and strength.
- All statements are correct

- A one-litre bottle is one-quarter filled with water, as shown here. What will be the total volume of liquid in the bottle when 200 cm<sup>3</sup> of milk is poured into the bottle?

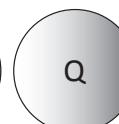


- 200 cm<sup>3</sup>
- 450 cm<sup>3</sup>
- 500 cm<sup>3</sup>
- 750 cm<sup>3</sup>

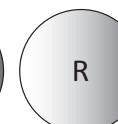
- Which of the following balls is most likely to sink in water?



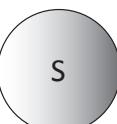
Hollow  
plastic ball



Hollow  
rubber ball



Solid  
rubber ball

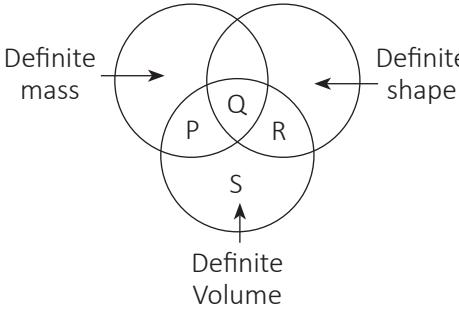


Solid  
wooden ball

- P
- Q
- R
- S

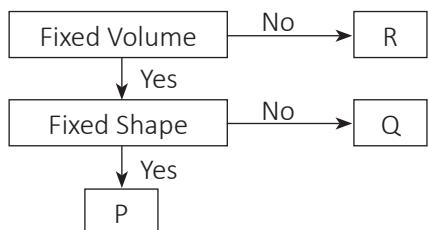
- Resin-coated fabrics are used to make raincoats and umbrellas because it gives them certain properties.

Which of the following is not one of its properties?

- a. It is heavy.  
 b. It is strong.  
 c. It is water proof.  
 d. It is light.
8. Rohan was put in a blindfold and given an object to feel. He felt that the object was flat, had one open end and no sharp edges. What was the object?  
 a. Tissue paper roll  
 b. Paper cup  
 c. Plastic bag  
 d. Ball
9. Which letter in the given diagram best represents blood?  
  
 a. R                    b. P  
 c. Q                    d. S
10. What is the reason that people do not commonly use silver to make electrical wires?  
 a. Silver is not easily available.  
 b. Silver cannot conduct electricity well enough.  
 c. Silver is the best conductor, but it is expensive.  
 d. Silver melts easily.

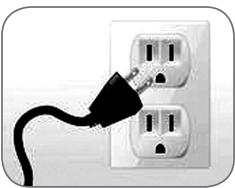
11. Which one of the following groups has matter in three different states?  
 a. Cloud, rain, fog  
 b. Iced lemon tea, coffee, toasted bread  
 c. Sugar, fizzy drink, oxygen  
 d. Nitrogen, petrol, water vapour
12. Rubber is used to make things like football, tyres, gloves, etc. Which one of the given properties make rubber useful?  
 a. Rubber is soft, flexible and has the property of elasticity.  
 b. Rubber is a natural material.  
 c. Rubber is cheap and easily available.  
 d. Rubber is an electrical insulator.
13. Identify the objects which are incorrectly classified.
- | Allows light to pass through | Allows some light to pass through | Does not allow light to pass through |
|------------------------------|-----------------------------------|--------------------------------------|
| Air                          | Clear glass                       | Brick                                |
| Water                        | Butter paper                      | Metal can                            |
| Cardboard                    | Tracing paper                     | Thin plastic sheet                   |
- a. Cardboard, clear glass and thin plastic sheet  
 b. Air, butter paper and bricks  
 c. Card board, clear glass and metal can  
 d. Air, butter paper and thin plastic sheet

14. Study the given flow chart based on states of matter. Which of the following is correct regarding this?



|    | P           | Q            | R            |
|----|-------------|--------------|--------------|
| a. | Rubber ball | Coffee       | Water vapour |
| b. | Coffee      | Water vapour | Rubber ball  |
| c. | Rubber ball | Water vapour | Coffee       |
| d. | Coffee      | Rubber ball  | Water vapour |

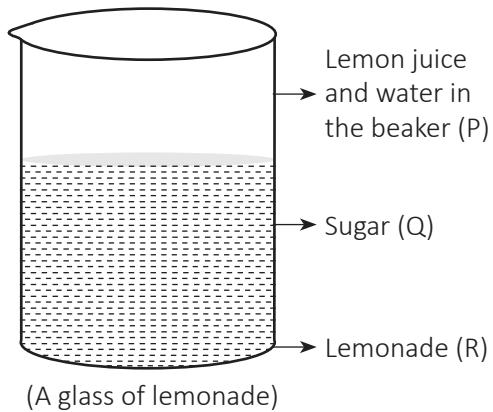
16. Which of the given materials are used for making the given object?



- a. Plastic and glass
- b. Plastic and metal
- c. Wood and metal
- d. Glass and metal

17. Tea is a \_\_\_\_\_ of sugar and extract of tea leaves in milk/water. The Sugar and extract of tea leaves are called the \_\_\_\_\_. The milk/water that dissolves the sugar and extract of tea leaves is called \_\_\_\_\_.

15. Give correct names to P, Q and R.



(A glass of lemonade)

- a. P- Solvent, Q- Solute, R- Solution
- b. P- Solute, Q- Solvent, R- Solution
- c. P- Solution, Q- Solute, R- Solvent
- d. P- Solvent, Q- Solution, R- Solute

## SECTION - B : EVERYDAY SCIENCE

16. Which of the given materials are used for making the given object?



- a. Plastic and glass
- b. Plastic and metal
- c. Wood and metal
- d. Glass and metal

- a. Solution, solvent, solute
- b. Solute, solvent, solution
- c. Solute, solution, solvent
- d. Solution, solute, solvent

18. Read the conversation between a mother and her daughter and answer the following question.

**Mother:** Naphthalene balls are kept between woollen clothes to protect them from insects.

**Riya:** Yes but I wonder why they get smaller after few days?

**Mother:** This is because they directly change into gases.

The process about which Riya's mother is talking is called:

- a. Freezing
  - b. Boiling
  - c. Sublimation
  - d. Condensation
19. Riya puts a glass of water into a freezer for 3 hours. Which of the following properties will change?
- I. Mass              II. Volume
  - III. Temperature    IV. State

Choose the correct option –

- a. I and II
- b. II, III, IV
- c. III and IV
- d. I and IV

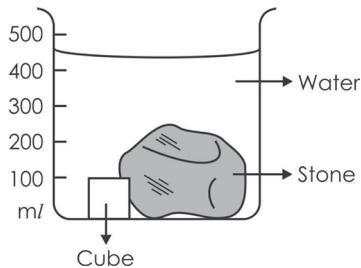
20. 'P' has weight and occupies space. It takes the shape of its container but it cannot be compressed. What could 'P' be among the following?

- a. A Potato
- b. Hydrogen gas
- c. A Syrup
- d. A Sponge

### SECTION - C : BRAINBOX

21. A plastic cube with a volume of  $50\text{ cm}^3$  and a stone are placed in a beaker containing  $300\text{ ml}$  water.

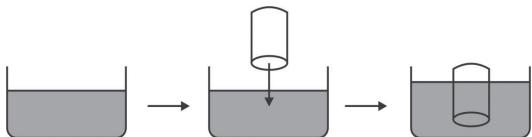
Which one of the following statements is not true?



- a. The water is at  $450\text{ ml}$ .
- b. The stone has a greater volume than the plastic cube.
- c. The stone has a volume of  $150\text{ ml}$ .
- d. The stone and the plastic cube causes the water level to rise.

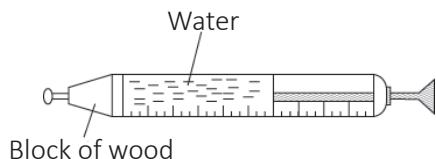
22. The glass in this picture is put inside water in an inverted position.

It is found that water does not enter the glass. Why is it so?

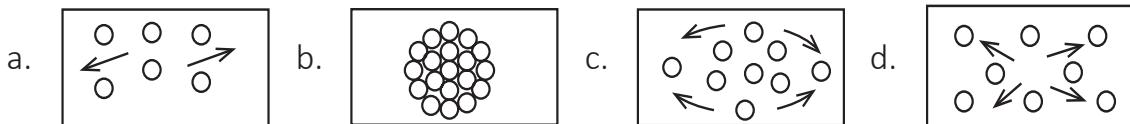


- a. There is air inside the empty glass.
- b. The water enters but comes out as the glass is inverted.
- c. Both a. and b.
- d. None of these

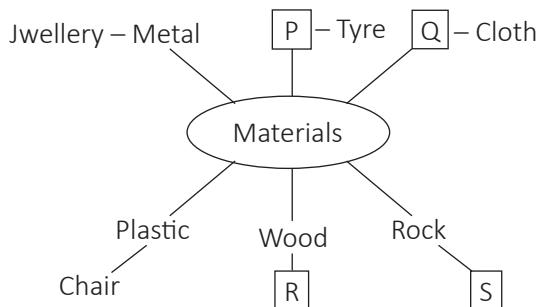
23. Jaya tries to push in the plunger of a syringe that is half filled with water (Shown in the figure below). But she cannot push it in. What is the reason behind this?



- a. Water has no definite shape.  
 b. Water has definite volume.  
 c. Water cannot be compressed.  
 d. Water has mass and it occupies space.
24. The given pictures show particles of the same matter. Which of the pictures show the matter at the lowest temperature?



25. Study the given diagram and answer the following question.



Which of the following best represents P, Q, R and S?

|    | P      | Q       | R         | S      |
|----|--------|---------|-----------|--------|
| a. | Rubber | Leather | Cloth     | Brick  |
| b. | Rubber | Cotton  | Pencil    | Statue |
| c. | Cotton | Silk    | Furniture | Paper  |
| d. | Mirror | Cotton  | Pencil    | Board  |

Darken your choice with HB pencil

- |                            |                         |                         |                         |                             |                         |                         |                         |                             |                         |                         |                         |                             |                         |                         |                         |
|----------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|
| 1. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 8. <input type="radio"/> a  | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 15. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 22. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 2. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 9. <input type="radio"/> a  | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 16. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 23. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 3. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 10. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 17. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 24. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 4. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 11. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 18. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 25. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 5. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 12. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 19. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |
| 6. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 13. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 20. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |
| 7. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 14. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 21. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |

# The Earth and The Universe

Our solar system consists of the Sun, eight planets and other heavenly bodies. The Sun is a star. A star is a huge ball of gases which gives heat and light of its own.

Planets revolve around the Sun in orbit. Satellites are heavenly bodies which revolve around planets.

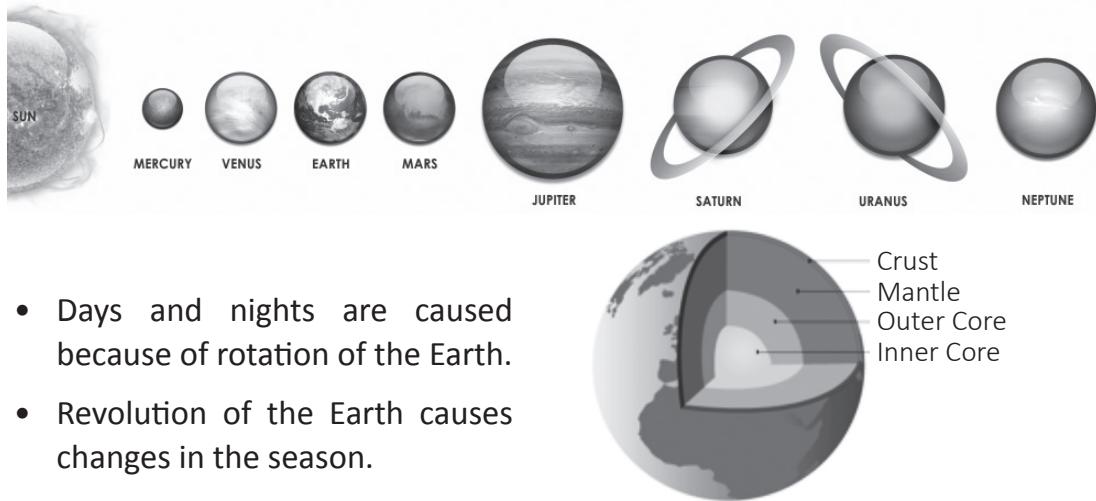
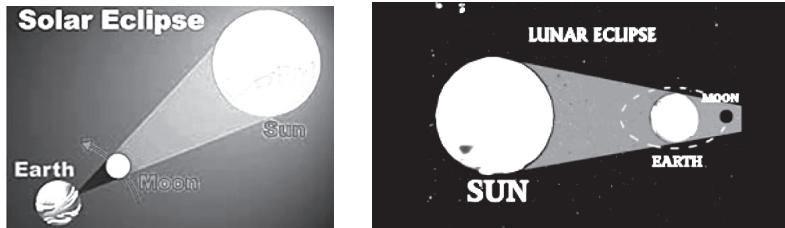


Fig: Internal structure of the earth

- Days and nights are caused because of rotation of the Earth.
- Revolution of the Earth causes changes in the season.

- Eclipse is the play of light and shadow. The Earth and the Moon cast shadows in the space when sunlight falls on them. This causes solar and lunar eclipses.



- Weather is the changing condition of the atmosphere at a particular time and place.
- Land breeze and sea breeze occur along coastal areas due to uneven heating of land and water bodies by the Sun.

## SECTION - A : SCIENTIFIC REASONING

1. We are the smaller heavenly bodies that move around planets.

Guess our name.

- a. Sun                  b. Satellites
- c. Earth                d. Stars

2. State the factor that causes the Sun to appear to change its position during day time.

- a. The movement of Moon around the Earth.
- b. The movement of Earth on its own axis.
- c. The movement of satellites around the planets.
- d. The fixed position of the Sun.

3. Why is there no marked seasons at parts near the equator?

- a. Parts near the equator do not receive sunlight.
- b. Parts near equator receive heavy rainfall.
- c. Parts near equator receive the same amount of sunlight throughout the year.
- d. None of the above

4. The festival of Holi marks the coming of:

- a. Spring                b. Autumn
- c. Winter               d. Summer

5. The distance travelled by light in one year is called \_\_\_\_\_.

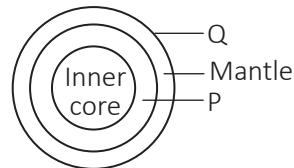
- a. Light year            b. Second year
- c. Calendar year      d. None of these

6. Match the following.

| I                    | II                       |
|----------------------|--------------------------|
| A. Natural satellite | (i) Sun's family         |
| B. Aryabhatta        | (ii) No Longer a planet  |
| C. Solar system      | (iii) Man-made satellite |
| D. Pluto             | (iv) Moon                |

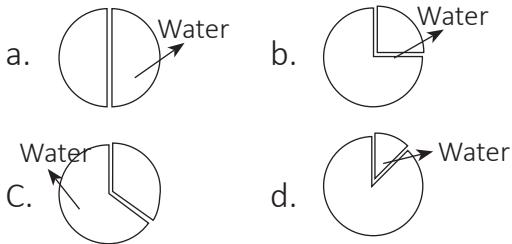
- a. A- (i), B- (iv), C- (iii), D- (ii)
- b. A- (iv), B- (iii), C- (i), D- (ii)
- c. A- (i), B- (ii), C- (iii), D- (iv)
- d. A- (ii), B- (i), C- (iv), D- (iii)

7. The following diagram shows the internal structure of the Earth. Identify P and Q in the figure.

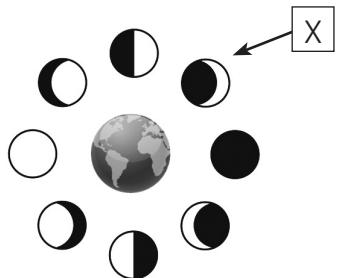


| P             | Q            |
|---------------|--------------|
| a. Outer Core | Crust        |
| b. Outer line | Crust        |
| c. Crust      | Outer core   |
| d. Crust      | Outer border |

8. Identify the pie chart that represents the fraction of the Earth which is covered by water.



9. Which phase of the Moon is shown by 'X' in the figure shown below?



- a. New
  - b. Gibbous
  - c. Crescent
  - d. Full

10. Riya, Priya, Aryan and Aman made the following statements about Life on Earth.

**Riya:** There is life on Earth because of its position in the solar system.

**Priya:** There is life on Earth because of its atmosphere.

**Aryan:** There is life on Earth because of the right amount of gases present on it.

**Aman:** There is life on Earth because of abundance of water.

## Whose statement was correct?

- a. Riya's and Priya's

- b. Aryan's and Aman's
  - c. Riya's, Priya's and Aman's
  - d. Riya's, Priya's, Aryan's and Aman's

11. The axis of the Earth is tilted at an angle. What does this statement tell us?

- a. The northern hemisphere is away from the Sun and the southern hemisphere is towards it.
  - b. The season in the northern hemisphere can never be same as the season in the southern hemisphere.
  - c. The southern hemisphere is away from the Sun and the northern hemisphere is towards it.
  - d. None of these

12. Read the given statements and choose the correct one.



- a. Volcanoes occur in only one continent.
  - b. Volcanoes are concentrated in certain areas.
  - c. Volcanoes occur all over the globe.
  - d. All of these

13. Read the statements given below and answer the following question.

- I. The Earth is like a half boiled egg.
- II. The outer surface of the Earth is hard, but deep inside it contains molten material.

Which of the above statements is/are correct?

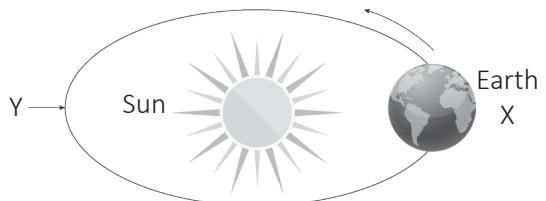
- a. I and II both are correct.
- b. II is correct explanation of I.
- c. II is correct.
- d. Both a. and b.

14. Which of the following statements is correct?

- a. At night, sea is warmer than the land.

- b. Warm air over land rises up.
- c. Cool air from water moves towards land.
- d. All of these

15. Study the given diagram and answer the following question.



How long will it approximately take the Earth to reach from X to Y in its orbit around the Sun?

- a. 210 days
- b. 160 days
- c. 180 days
- d. 365 days

## SECTION - B : EVERYDAY SCIENCE

16. Man made satellites are used for:

- I. Gathering weather information.
- II. Creating maps.
- III. Monitoring pollution.

- a. I and II
- b. I, II and III
- c. Only III
- d. I and III

17. Which of the following statements is incorrect?

- I. Land breeze and sea breeze are caused due to uneven heating of land by the Sun.

- II. Land breeze and sea breeze are caused due to uneven heating of water bodies by the Sun.

- a. I only
- b. II only
- c. Both I and II
- d. None of them

18. From the Earth, the Moon looks bigger than the Sun. Which of the following could be a possible reason?

- a. Small size of the Sun.
- b. The Sun is nearer to the Earth.
- c. The Moon is nearer to the Earth.
- d. The Sunlight is brighter than the Moon.

19. When you go to the Moon, you will weigh approximately one-sixth of your weight on Earth. Based on that statement, which one of the following is true?
- Moon's mass is approximately one-sixth of the Earth's mass.
  - Moon's surface area is approximately one-sixth of the Earth's surface area.
  - Moon's volume is approximately one-sixth of the Earth's volume.
  - None of the above

20. Artificial satellites are built by people and launched by rockets into space, where they orbit around the Earth. These satellites are used for:
- Map making
  - GPS
  - Broadcasting T.V programmes
  - All of these

### SECTION - C : BRAINBOX

21. The table below shows the shapes of the Moon on different days. What should be the shape of the Moon on 21st December according to the table?

- 
- 
- 
- 

| December |    |    |
|----------|----|----|
| 21       | 22 | 23 |
| 24       | 25 | 26 |
| 27       | 28 | 29 |
| 30       |    |    |

22. Study the given table and answer the following question.

| Planet  | Approx distance from Sun (million km) | Approx time taken to make a revolution around the Sun |
|---------|---------------------------------------|-------------------------------------------------------|
| Mercury | 46                                    | 88 days                                               |
| Saturn  | 1427                                  | 29 years                                              |
| Venus   | 107                                   | 225 days                                              |
| Earth   | 147                                   | 1 year                                                |
| Jupiter | 741                                   | 12 years                                              |

Planet Neptune is about 4504 million km away from the Sun. How long will this planet take to revolve around the Sun?

- 95 days
- 165 years
- 110 days
- 10 years

23. Read the statements given below. Which planets do they describe?

- It is the largest and the fastest spinning planet.
- Its rings are made up of rocks and ice.
- Boiling hot during day time and freezing cold at night.

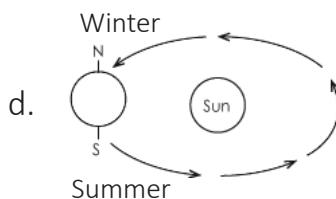
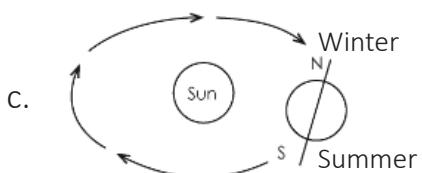
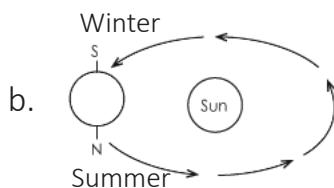
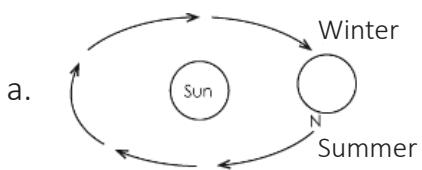
|    | I       | II      | III     |
|----|---------|---------|---------|
| a. | Venus   | Uranus  | Jupiter |
| b. | Jupiter | Saturn  | Venus   |
| c. | Mercury | Venus   | Earth   |
| d. | Mars    | Jupiter | Uranus  |

**24. Match the following.**

| Column I            | Column II     |
|---------------------|---------------|
| A. Morning Star     | (i) Earth     |
| B. Brightest Planet | (ii) Venus    |
| C. Red Planet       | (iii) Mercury |
| D. Largest Planet   | (iv) Jupiter  |
| E. Blue Planet      | (v) Mars      |

- a. A- i, B- ii, C- iii, D- iv, E- v
- b. A- ii, B- i, C- iv, D- iii, E- v
- c. A- ii, B- iii, C- v, D- i, E- iv
- d. A- ii, B- iii, C- v, D- iv, E- i

**25. Which figure correctly shows the relation between Earth's seasons and its revolution around the Sun?**



Darken your choice with HB pencil —————

1.  a  b  c  d  
 2.  a  b  c  d  
 3.  a  b  c  d  
 4.  a  b  c  d  
 5.  a  b  c  d  
 6.  a  b  c  d  
 7.  a  b  c  d

8.  a  b  c  d  
 9.  a  b  c  d  
 10.  a  b  c  d  
 11.  a  b  c  d  
 12.  a  b  c  d  
 13.  a  b  c  d  
 14.  a  b  c  d

15.  a  b  c  d  
 16.  a  b  c  d  
 17.  a  b  c  d  
 18.  a  b  c  d  
 19.  a  b  c  d  
 20.  a  b  c  d  
 21.  a  b  c  d

22.  a  b  c  d  
 23.  a  b  c  d  
 24.  a  b  c  d  
 25.  a  b  c  d

Whenever we push or pull an object we apply force. A force can:

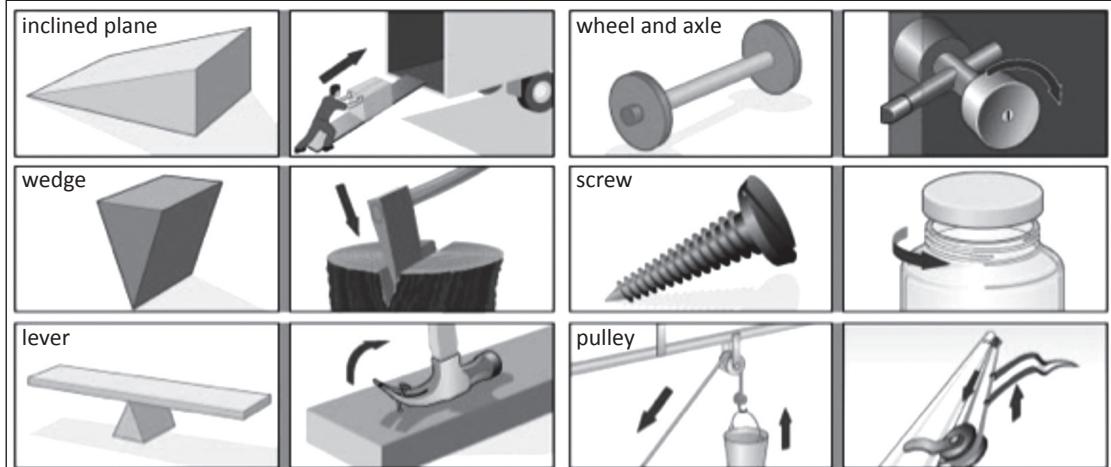
- make an object move
- stop a moving object
- change the speed and direction of a moving object
- change the shape of an object

Work is done when a force is applied on an object and the object moves because of applied force. When the applying force does not change the position or shape of an object, no work is said to be done.

Energy is the ability to apply force and to do a work. Energy is also required by matter to change its state. Such as, heat energy is required to change water into water vapour.

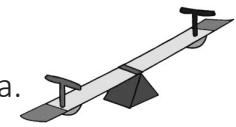
A simple machine is a tool or device that makes a work easy by applying lesser force.

Types of simple machines:



**Fig:** Some simple machines

## SECTION - A : SCIENTIFIC REASONING

1. A ball rolling on the floor stops after covering some distance. Name the force that stops the rolling ball.
- Gravitational force
  - Muscular force
  - Frictional force
  - Elastic force
2. Which of the following is a simple machine?
- a.  b. 
- c.  d. All of these
3. The given figure shows \_\_\_\_\_ force.
- a. Gravitational  
b. Frictional  
c. Muscular  
d. Elastic
4. Identify the change in energy, when a ceiling fan is switched on.
- Electrical energy into kinetic energy.
  - Kinetic energy into electrical energy.
  - Gravitational energy into kinetic energy.
  - All of these
5. Name the energy that is produced when coal is burnt in air.
- Chemical energy
  - Heat energy
  - Mechanical energy
  - Electrical energy
6. Which of the following best describes the energy conversion in a calculator with solar cells?
- Light energy → Chemical energy → Light energy
  - Heat energy → Chemical energy → Light energy
  - Heat energy → Electrical energy → Light energy
  - Light energy → Electrical energy → Light energy
7. Riddhi made a list of activities and determined whether she needs a push, a pull or both to carry them out. She however made a mistake in her list. Spot her mistake.
- | Activity                   | Push | Pull | Both |
|----------------------------|------|------|------|
| a. Writing with a pen      |      | ✓    |      |
| b. Blowing a candle        | ✓    |      |      |
| c. Raising the school flag |      | ✓    |      |
| d. Sawing a piece of wood  |      |      | ✓    |



8. In an experiment, two wooden blocks of the same weight slide down an inclined plane at different speeds. Which of the following forces could be responsible for the difference in their speeds?

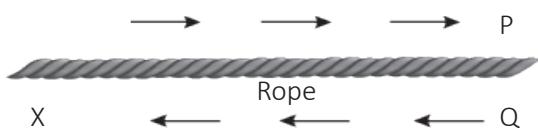
- a. Gravity
- b. Magnetic force
- c. Muscular force
- d. Friction

9. Match the following.

| Column I          | Column II            |
|-------------------|----------------------|
| 1. Battery        | p. Heat energy       |
| 2. Motor bike     | q. Mechanical energy |
| 3. Electrical fan | r. Chemical energy   |
| 4. Bonfire        | s. Electrical energy |

- a. 1 – p, 2 – q, 3 – r, 4 – s
- b. 1 – r, 2 – q, 3 – s, 4 – p
- c. 1 – r, 2 – q, 3 – p, 4 – s
- d. 1 – r, 2 – p, 3 – q, 4 – s

10. During a game of tug of war, a team applies force P to move the rope in its direction. The other team applies force Q in the opposite direction. Identify forces P and Q.



- a. Q – Pushing P – Pushing
- b. Q – Pulling P – Pulling

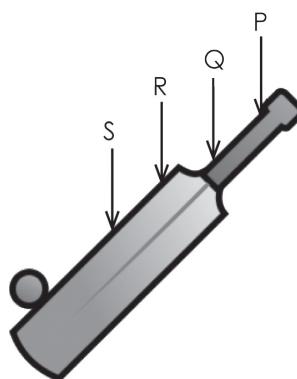
- c. Q – Pulling P – Pushing

- d. Q – Pushing P – Pulling

11. If two boys push a table in opposite directions with equal force, then:

- a. Work is said to be done.
- b. No work is done.
- c. Double work is done.
- d. None of these.

12. The figure shows a stone and a wooden bat are kept on ground. Identify the point where you should apply the force to lift the stone easily.

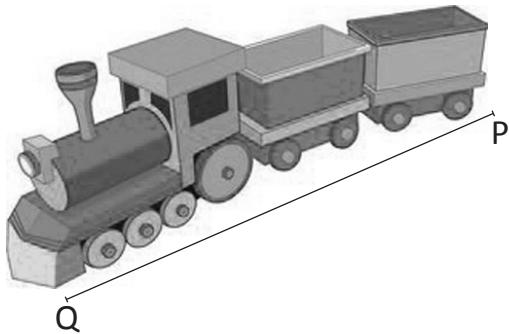


- a. P
- b. Q
- c. R
- d. S

13. Which of the following statements is correct?

- a. Wind and flowing water possess energy.
- b. Wind does not possess energy.
- c. Moving water does not possess energy.
- d. Gravitational force is applied only by the Earth.

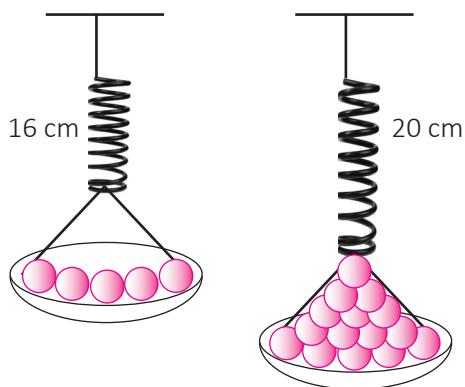
14. A toy train is released from point P on a slope and it travels towards point Q. Name the force responsible for pulling the train towards point Q.



- I. Weight of the toy train
- II. Earth's magnetic field
- III. Earth's gravity
- IV. Frictional force acting between the wheels and the slope

- a. IV only
- b. I and II
- c. Both I and III
- d. I only

15. Study the given diagrams.



What should be the original length of the spring?

- a. 14 cm
- b. 150 cm
- c. 40 cm
- d. 10 cm

## SECTION - B : EVERYDAY SCIENCE

16. A car slows down and stops when the driver applies the brakes. Which of the following forces makes the car stop?

- a. A magnetic force acts in the opposite direction of the moving car.
- b. An electric spring force acts in the direction of the moving car.
- c. A gravitational force acts on the moving car.
- d. A frictional force acts in the opposite direction of the moving car.

17. Hari puts a ring on a glass-topped table and flicked it with his finger. He used a ruler to measure the distance travelled by the ring. Then he carried out the same test by laying a piece of newspaper, a cotton cloth, and a sand paper, in turns, on the table.

On which surface will the ring travel the farthest?

- a. Cotton cloth
- b. Glass table
- c. Sand paper
- d. News paper

18. We sprinkle talcum powder on a carom board to \_\_\_\_\_.

- a. Reduce frictional force.
- b. Reduce gravity.
- c. Increase frictional force.
- d. Increase gravity.

19. Pihu and Aman put their hands around the flame of a burning candle as shown in the figure.



Pihu's hand

Aman's hand

Pihu could not hold her hand above the flame for more than few seconds.

Aman could hold his hand in the given position for a longer time.

Which of the following statement justifies this?

- a. The hot air rises up.
- b. The hot air spreads around in all direction.

c. The candle flame burns in upward direction.

d. Aman's and Pihu's hand are different.

20. Ramesh tried to see if he could produce different sounds with a violin.

The following table shows the action made by him to produce different sounds.

| Action                     | Sound produced |
|----------------------------|----------------|
| Slide a bow on the strings | Yes            |
| Strum the strings          | Yes            |
| Drum on the side           | Yes            |
| Strike the side with a pen | Yes            |

Now choose the correct option showing the conclusion of Ramesh's experiment.

- a. Different actions produce different sounds.
- b. Same actions produces different sounds.
- c. Different actions produces same sound.
- d. None of these

## SECTION - C : BRAINBOX

21. Shaurya is pushing a loaded barrel onto a lorry using a ramp. As he pushes the barrel up the ramp, the \_\_\_\_\_ energy from the food that Shaurya has eaten changes into \_\_\_\_\_ energy of the barrel.

When the barrel reaches the deck of the lorry, this energy is stored in the barrel as \_\_\_\_\_ energy. However, some of the energy from Shaurya is changed into \_\_\_\_\_ and \_\_\_\_\_ energy.

Select the correct sequence of words to complete the above paragraph.

- a. Kinetic, chemical, potential, heat, sound
- b. Chemical, kinetic, potential, heat, sound
- c. Chemical, potential, kinetic, sound, heat
- d. Chemical, kinetic, potential, heat, light

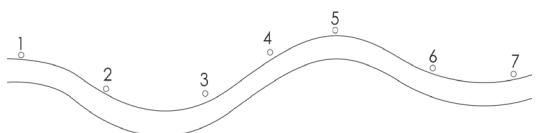
22. A scissor is a compound machine made up of a combination of simple machines. Which simple machines combine to make the scissor?

- I. Lever
- II. Pulley
- III. Wheel and axle
- IV. Wedge



- a. I and II
- b. II and III
- c. I and III
- d. I and IV

23. Observe the given figure and answer the following question.



- I. The marble is moving faster at position 2.
  - II. The marble is slower at position 5.
- Which of the above statement(s) is/are correct?
- a. I and II
  - b. I only
  - c. II only
  - d. None of them

24. The given figure shows two girls playing tennis. Girl P hits the ball over the net. Girl Q hits it back with a lot of force at point X.

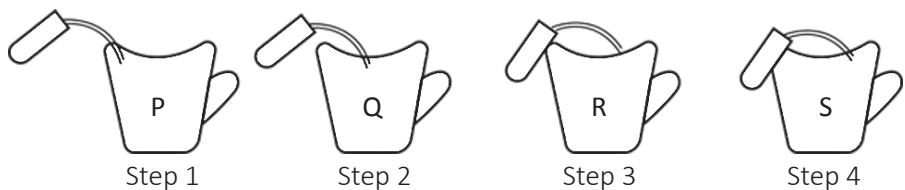


What happens at point X?

- I. The direction of the ball changes because of applied force.
  - II. The shape of the ball changes because of the force.
  - III. Ball stops moving because of the force.
- a. I only
  - b. II only
  - c. I and III
  - d. I and II

25. The given figure shows boiling water being poured into four mugs of the same size and material, (P, Q, R and S). Which of the following mugs will have water at the lowest and the highest temperature respectively?

- a. P and Q
- b. S and P
- c. Q and P
- d. R and S



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Darken your choice with HB pencil —————

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- |                            |                         |                         |                         |                             |                         |                         |                         |                             |                         |                         |                         |                             |                         |                         |                         |
|----------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|
| 1. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 8. <input type="radio"/> a  | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 15. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 22. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 2. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 9. <input type="radio"/> a  | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 16. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 23. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 3. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 10. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 17. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 24. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 4. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 11. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 18. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 25. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |
| 5. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 12. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 19. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |
| 6. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 13. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 20. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |
| 7. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 14. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d | 21. <input type="radio"/> a | <input type="radio"/> b | <input type="radio"/> c | <input type="radio"/> d |                             |                         |                         |                         |

**Identify the pattern and replace question mark with suitable number.**

1. 12, 17, 14, 19, 16, ?
  - a. 20
  - b. 21
  - c. 24
  - d. 30
2. 53, 53, 40, 40, 27, 27, ?
  - a. 14
  - b. 15
  - c. 21
  - d. 24

**Unscramble the word given below to form a meaningful word.**

3. Bream
  - a. Brown
  - b. Mearb
  - c. Amber
  - d. Brome
4. Swing
  - a. Win
  - b. Swim
  - c. Sing
  - d. Wings

**Complete each analogy by choosing the correct options.**

5. Bed : Sleeping :: Chair : ?
  - a. Resting
  - b. Eating
  - c. Sitting
  - d. Crawling

6. Lizard : Reptile :: Mouse : ?

- a. Animal
- b. Reptile
- c. Vertebrate
- d. Mammal

7. Parsley, Mayonnaise, Basil, Mint

- a. Parsley
- b. Mayonnaise
- c. Basil
- d. Mint

**Identify the letter / picture pattern and fill in the blank.**

8. FAG, GAF, HAI, IAH, ?

- a. JAK
- b. JAI
- c. HAK
- d. HAI

9. 

- a. 
- b. 
- c. 
- d. 

10. Complete the analogy.



**Study the analogies and fill in the blanks with the correct option  
(Q 11 - Q 12).**

11. Temperature : Kelvin :: Electricity : ?

- a. Watt
- b. Calorie
- c. Meter
- d. Cm<sup>3</sup>

12. Bird : Aviary :: \_\_\_\_\_

- a. Fish : Ocean
- b. Bee : Apiary
- c. Beer : Brewery
- d. Parrot : Tree

**Find the mirror image of given number/word (Q 13 - Q 14).**

13. 6669

- a. 6666
- b. 6666
- c. 6666
- d. 6666

14. TEMPLE

- a. TEMPLE
- b. TEMPLE
- c. TEMPLE
- d. ELPMET

15. Rashi baked 3 cakes on Monday, 5 on Tuesday, 7 on Wednesday and 9 on Thursday. How many cakes will she bake on Saturday, if she follows the same pattern?

- a. 11
- b. 13
- c. 15
- d. 17

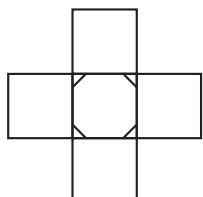
16. Choose one word from group 'X' and another word from group 'Y' to form a compound word.

| Group X             | Group Y             |
|---------------------|---------------------|
| Before, after today | Science, thing math |

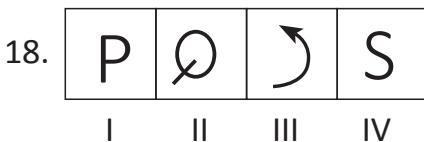
- a. Aftermath
- b. Beforescience
- c. Sciencetoday
- d. Beforething

17. How many lines of symmetry can be drawn in the given figure?

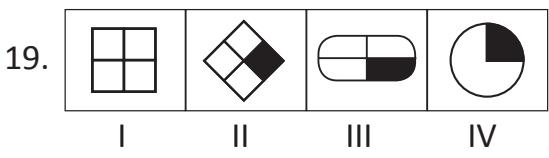
- a. 1
- b. 2
- c. 3
- d. 4



**Choose the odd one out (Q 18 - Q 19).**



- a. I
- b. II
- c. III
- d. IV



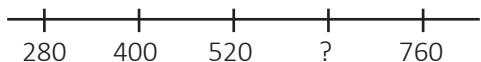
- a. I
- b. II
- c. III
- d. IV

**Find the odd one out (Q 20 - Q 21)**

- 20. a. Fish: Pisciculture
- b. Birds: Horticulture
- c. Bees: Apiculture
- d. Silkworm: Sericulture

- 21. a. Microscope
- b. Telescope
- c. Periscope
- d. Stethoscope

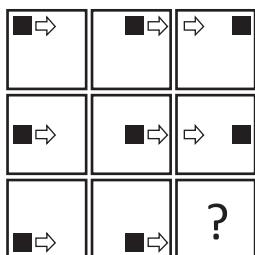
22. A number line is shown below.



What is the missing number?

- a. 580
- b. 640
- c. 720
- d. 760

23. Replace the question mark with correct figure to complete the series.



- a. 
- b. 
- c. 
- d. 

24. Every class that visits Life Science Museum is divided into groups of 4 students for each tour guide. Which of the following classes would not be able to form groups of 4 students with none left over?

- a. A class of 36 students
- b. A class of 40 students
- c. A class of 46 students
- d. A class of 52 students

25. Vinay wanted to take the bus at 5:10 p.m. He arrived at the bus stop 25 minutes before 5:10 p.m. When did Vinay arrive at the bus stop?

- a. 4:45 pm
- b. 5:35 pm
- c. 4:40 pm
- d. 4:25 pm

26. A family consists of six members P, Q, R, X, Y and Z. Q is the son of R but R is not mother of Q. P and R are a married couple. Y is the brother of R. X is the daughter of P. Z is the brother of P. Who is the father of Q?

- a. P
- b. R
- c. X
- d. Z

27. In a certain code, PAPER is written as SCTGW. How is MOTHER written in that code?

- a. ORVLGW
- b. PQXJJT
- c. PQVJGT
- d. PQXKJV

28. A boy rode his bicycle northward, then turned left and rode 1 km and again turned left and rode 2 km. He found himself 1 km west of his starting point. How far did he ride northward initially?

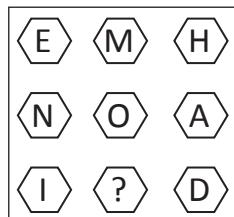
- a. 1 km
- b. 2 km
- c. 3 km
- d. 5 km

29. Today is Monday. After 61 days, it will be:

- a. Wednesday
- b. Saturday
- c. Tuesday
- d. Thursday

30. Look at the given figure. Which letter will replace the question mark?

- a. P
- b. M
- c. Z
- d. R



— Darken your choice with HB pencil —

1.  a  b  c  d

2.  a  b  c  d

3.  a  b  c  d

4.  a  b  c  d

5.  a  b  c  d

6.  a  b  c  d

7.  a  b  c  d

8.  a  b  c  d

9.  a  b  c  d

10.  a  b  c  d

11.  a  b  c  d

12.  a  b  c  d

13.  a  b  c  d

14.  a  b  c  d

15.  a  b  c  d

16.  a  b  c  d

17.  a  b  c  d

18.  a  b  c  d

19.  a  b  c  d

20.  a  b  c  d

21.  a  b  c  d

22.  a  b  c  d

23.  a  b  c  d

24.  a  b  c  d

25.  a  b  c  d

# Answers

## Chapter 1: Plant World

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | b | 2.  | d | 3.  | d | 4.  | c | 5.  | b | 6.  | d | 7.  | d | 8.  | c | 9.  | b | 10. | a |
| 11. | d | 12. | d | 13. | a | 14. | d | 15. | b | 16. | a | 17. | c | 18. | a | 19. | a | 20. | a |
| 21. | c | 22. | b | 23. | c | 24. | b | 25. | a |     |   |     |   |     |   |     |   |     |   |

## Chapter 2: Animal World

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | b | 2.  | c | 3.  | b | 4.  | c | 5.  | d | 6.  | c | 7.  | c | 8.  | d | 9.  | a | 10. | b |
| 11. | c | 12. | b | 13. | a | 14. | a | 15. | b | 16. | c | 17. | b | 18. | c | 19. | a | 20. | d |
| 21. | c | 22. | c | 23. | a | 24. | b | 25. | d |     |   |     |   |     |   |     |   |     |   |

## Chapter 3: Human Body and Food

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | a | 2.  | b | 3.  | b | 4.  | c | 5.  | a | 6.  | c | 7.  | a | 8.  | c | 9.  | d | 10. | c |
| 11. | b | 12. | b | 13. | d | 14. | c | 15. | a | 16. | a | 17. | b | 18. | a | 19. | d | 20. | c |
| 21. | d | 22. | c | 23. | b | 24. | a | 25. | c |     |   |     |   |     |   |     |   |     |   |

## Chapter 4: Measurement

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | c | 2.  | d | 3.  | b | 4.  | c | 5.  | d | 6.  | d | 7.  | b | 8.  | c | 9.  | a | 10. | c |
| 11. | b | 12. | d | 13. | c | 14. | a | 15. | b | 16. | b | 17. | b | 18. | a | 19. | d | 20. | b |

## Chapter 5: Our Environment

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | b | 2.  | b | 3.  | a | 4.  | d | 5.  | b | 6.  | b | 7.  | d | 8.  | b | 9.  | b | 10. | c |
| 11. | a | 12. | b | 13. | d | 14. | a | 15. | d | 16. | b | 17. | b | 18. | d | 19. | d | 20. | a |
| 21. | b | 22. | d | 23. | d | 24. | c | 25. | d |     |   |     |   |     |   |     |   |     |   |

## Chapter 6: Materials and Matters

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | b | 2.  | a | 3.  | b | 4.  | a | 5.  | b | 6.  | c | 7.  | c | 8.  | c | 9.  | b | 10. | c |
| 11. | c | 12. | a | 13. | a | 14. | a | 15. | a | 16. | b | 17. | d | 18. | c | 19. | b | 20. | c |
| 21. | c | 22. | a | 23. | c | 24. | c | 25. | b |     |   |     |   |     |   |     |   |     |   |

## Chapter 7: The Earth and The Universe

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | b | 2.  | b | 3.  | c | 4.  | a | 5.  | a | 6.  | b | 7.  | a | 8.  | c | 9.  | b | 10. | d |
| 11. | b | 12. | c | 13. | d | 14. | d | 15. | c | 16. | b | 17. | d | 18. | c | 19. | d | 20. | d |
| 21. | b | 22. | b | 23. | b | 24. | d | 25. | c |     |   |     |   |     |   |     |   |     |   |

## Chapter 8: Force Work and Energy

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | c | 2.  | d | 3.  | a | 4.  | a | 5.  | b | 6.  | d | 7.  | a | 8.  | d | 9.  | b | 10. | b |
| 11. | b | 12. | a | 13. | a | 14. | c | 15. | a | 16. | d | 17. | b | 18. | a | 19. | a | 20. | a |
| 21. | b | 22. | d | 23. | a | 24. | a | 25. | b |     |   |     |   |     |   |     |   |     |   |

## Chapter 9: Logical Reasoning

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1.  | b | 2.  | a | 3.  | c | 4.  | d | 5.  | c | 6.  | d | 7.  | b | 8.  | a | 9.  | d | 10. | d |
| 11. | a | 12. | b | 13. | b | 14. | c | 15. | b | 16. | a | 17. | d | 18. | c | 19. | a | 20. | b |
| 21. | d | 22. | b | 23. | c | 24. | c | 25. | a | 26. | b | 27. | b | 28. | b | 29. | b | 30. | b |

## My Notes

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## My Notes

## My Notes