

L – 1 : THE WONDERFUL WORLD OF SCIENCE

SHORT ANSWER TYPE QUESTIONS :

1. What is Science?

Ans. Science is a way of thinking, observing and doing things to understand the world we live in and to uncover the secrets of the universe.

2. What makes Earth unique?

Ans. Earth is unique as the only known planet supporting life, showcasing diverse ecosystems and species that thrive across different regions.

3. Which is the most important factor for the growth of all living beings and from where it comes?

Ans. Nutrition is the most important factor for the growth of all living beings. Animals get nutrients from food and plants get nutrients from the soil, water and air.

4. What is sustainable eating?

Ans. Sustainable eating refers to food choices that are healthful for both, individuals and our planets.

5. Write some of the examples that shows living things grow.

Ans. When an infant grows into an adult, puppy grows into a dog and seed grows into a tree.

6. What is water cycle? Draw a diagram to show water cycle in nature.

Ans. Water changes into water vapour and converts into clouds on cooling. Then water returns to earth as rain. This is called water cycle.



7. What is the importance of clean water?

Ans. Importance of clean water is as follows :

1. It is required for growing crops.
2. It is used for raising livestock.

8. Why does the sun rise in the morning?

Ans. The sun appears to rise in the morning due to the rotation of the earth on its axis.

9. Why are the leaves green in colour?

Ans. Leaves are green in colour due to the presence of chlorophyll.

10. Why does the sky appear blue?

Ans. When sunlight passes through the atmosphere the fine particles in air scatter the blue colour, so the sky appears blue.

LONG ANSWER TYPE QUESTIONS :

1. Describe the process of scientific inquiry.

Ans. Scientific inquiry involves following steps:

1. Identify and define a problem
2. Conduct a research
3. Forming a hypothesis (a possible answer)
4. Testing of hypothesis
5. Analysing the result of the experiment
6. Communicate the results

L – 6 : MATERIAL AROUND US

STEP BY STEP : (Pg. No. 94)

Match the columns :

Column I	Column II
1. Lustrous	Jewellery
2. Transparent	Spectacles
3. Translucent	Butter Paper
4. Opaque	Wooden plank
5. Soft	Cotton wool
6. Hard	Rock

STEP BY STEP (Pg. No. 96)

State true or false for the following statements. Correct the false statements.

1. False - Honey dissolves in water.
2. False - Hard material can't be easily stretched.
3. False - Cardboard is an opaque material as it does not allow light to pass through it.
4. True
5. True

EXERCISE : (Pg. No. 100 – 101)

A. Select the correct option :

1. (a) Gold
2. (c) Cellophane paper
3. (b) Sugar
4. (a) Water vapour
5. (c) The matter contained in it.

B. Fill in the blanks:

1. papers
2. copper or aluminium
3. rough
4. translucent
5. Opaque

C. State True (T) or False (F) for the following statements :

1. F
2. T
3. F
4. F
5. T

D. Assertion and Reason Type Questions :

1. c

2. c

E. Write two examples for each of the following :

- | | | | |
|-----------------------|---|-------------|-----------|
| 1. Opaque materials | : | metal sheet | cardboard |
| 2. Gaseous substances | : | steam | oxygen |
| 3. Soluble substances | : | sugar | salt |
| 4. Lustrous materials | : | gold | silver |

SHORT ANSWER TYPE QUESTIONS :

1. What properties of matter are common to solids, liquids and gases?

Ans. Following properties of matter are common to solids, liquids and gases :

1. They are made up of small particles.
2. They have a particular mass and occupy space.

2. Why do we need to group materials in everyday life?

Ans. Grouping things make it easy to study their properties and we can locate them easily by segregating them.

3. Explain why solids cannot be compressed where as gases can be compressed easily.

Ans. Solids are difficult to compress because their molecules are tightly packed with strong inter-molecular force where as gases are easy to compress because their molecules are loosely packed with weak inter-molecular force.

4. Differentiate between matter and molecule.

Ans. Anything that has mass and occupies space is called matter where as a group of two or more atoms held together is called molecule.

5. The capacity of a cooking oil bottle is one litre. What will be the volume of oil left in the bottle, if one-fourth of the oil is used?

Ans. If one-fourth of the oil is used then three-fourth of the oil is left. So volume of oil will be :

$$\frac{3}{4} \times 1 \text{ L} = 0.75 \text{ l or } 750 \text{ ml.}$$

6. What are miscible and immiscible liquids? Give two examples of each.

Ans. **Miscible Liquids :** The liquids that mixes with each other completely to form a uniform solution are called miscible liquids. e.g. : alcohol and water, honey and water etc.

Immiscible Liquids : The liquids that never mixes with each other but form a separate layer are called immiscible liquids. e.g. : oil in water, ghee in water etc.

7. What is ORS?

Ans. ORS is Oral Rehydration Solution. It contains glucose and sodium chloride. It is used for prevention and treatment of dehydration.

LONG ANSWER TYPE QUESTIONS :

1. Classify objects based on transmission of light through them.

Ans. Objects are of three types on the basis of transmission of light through them :

Transparent objects : The objects that allow light to pass through them completely are called transparent objects. e.g. : glass, air etc.

Translucent objects : The objects that allow light to pass through them partially are called translucent objects. e.g. frosted glass, butter paper etc.

Opaque objects : The objects that do not allow light to pass through them are called opaque objects. e.g. wood, paper etc.

2. Why is classification of materials useful? Explain with an example.

Ans. The uses of classification of materials are as under :

1. It becomes easy to study their properties.
2. We can locate them easily.
3. It makes our work easier and wastage of time is avoided.
4. It becomes convenient for us to learn any pattern in their properties.
5. It helps to segregate similar objects from dissimilar ones.
6. e.g. If you want to buy biscuits from a mall, then you directly go to that particular counter. It will save your time and energy.

3. Write at least three differences between solids, liquids and gases.

Ans.

Solid	Liquid	Gas
1. Solids have definite shape and volume.	1. Liquids have no fixed shape but definite volume.	1. Gases have no fixed shape and no fixed volume.
2. In solids, molecules are closely packed.	2. In liquids, molecules are loosely packed.	2. In gas, molecules are far apart from each other.
3. In solids, force of attraction between molecules is very strong.	3. In liquids, force of attraction between molecules is weak.	3. In gas, force of attraction between molecules is very weak.
4. Solids can't flow.	4. Liquids flow from higher to lower level.	4. Gases can flow in all directions.
5. e.g. – table, chair, salt etc.	5. e.g. – water, milk, oil etc.	5. e.g. – oxygen, nitrogen, carbon dioxide etc.

4. How will you check the solubility of a substance in water?

Ans. We can check the solubility of a substance in water through an activity :

1. Take two glasses of water, 2 table spoon sugar and 2 table spoon sand.
2. Mark the glasses 'A' and 'B'
3. Put sugar in glass 'A' and sand in glass 'B'
4. Stir it well for sometime.
5. Now observe both the glasses.
6. Sugar will dissolve in water completely where as sand will settle down at the bottom of the glass.
7. It proves the solubility of sugar in water.

THINK AND REFLECT (Pg. No. 101 – 103)

1. You are provided with three glass jars A, B and C, of the same shape and capacity. Put few sugar cubes in jar A, a cup of water in jar B and let there be air in jar C. Cover the jars with a lid at the top.

i) In which of the three jars available space will be occupied completely?

Ans. In jar C, as air is present in it that occupies the space completely.

ii) Which among the three substances will have taken the shape of the container?

Ans. Water and air have taken the shape of the container.

iii) Which of the three substances in the jar, is most difficult to compress?

Ans. Sugar cubes in jar A are most difficult to compress.

iv) Which of the substances has a definite volume?

Ans. All three (sugar cubes, water and air) substances have a definite volume.

2. Waste segregation is crucial for the waste generated in the households or industries. Make a report on waste management keeping classification of wastes and importance of recycling of materials as the core theme.

Ans. Waste management is a critical environmental concern that involves proper collection, disposal and recycling of waste materials to reduce pollution and conserve natural resources.

Classification of wastes :

- | | | |
|------------------------|-----------------------------|---------------------|
| 1. Biodegradable waste | 2. Non –biodegradable waste | 3. Hazardous waste |
| 4. E-waste | 5. Bio-medical waste | 6. Industrial waste |

Importance of recycling of materials : It plays a significant role in waste management by reducing waste.

The key benefits of recycling are:

- | | |
|--------------------------------------|--------------------------------------|
| 1. Conservation of natural resources | 2. Reduction in pollution |
| 2. Energy conservation | 4. Protection of marine and wildlife |

3. List different properties you would consider in buying footwear from a footwear store. Some criteria are suggested. Add more to it:

- | | | | |
|--------------------------|--------------------------------|-------------|---------|
| 1. Colour | 2. Material | 3. Price | 4. Size |
| 5. Formal or Casual | 6. With heels or without heels | 7. Softness | |
| 8. With laces or buckles | | | |

Note : Do this question on notebook.

4. Visit a grocery store and take note of how various items are arranged on the shelves. Make a classification using your own criteria for suggesting to the store manager for better segregation of the items. You can select four or more important criteria for your suggestions.

Ans. Suggested criteria for better segregation :

1. **Category based segregation** : Staples & Essentials (wheat flour, sugar, rice), Dairy products (milk, butter, cheese) beverages (tea, juices, coffee)
2. **Customer purchase behavior** : Frequently bought, seasonal & festive displays
3. **Brand Segmentation**
4. **Storage requirements and shelf life** : cold storage, dry goods, fragile items.

Note : Do this question on notebook.

5. Why do sweet shops have the sweets displayed on racks covered by transparent glass? What would happen if the display rack is covered by translucent or opaque material?

Ans. Transparent glass allows customers to clearly see the variety of sweets available. If it is covered by translucent or opaque material, it would be difficult for customers to choose what they want.

6. Select any two criteria you would prefer for buying a comfortable study table for yourself. Justify why you chose them.

- | | | | |
|-----------------|--------------------|---------------------|-----------------|
| 1. Large size | 2. Small size | 3. Made of steel | 4. Made of wood |
| 5. Made of cane | 6. Made of plastic | 7. With a glass top | |

Note : Do this question on notebook.

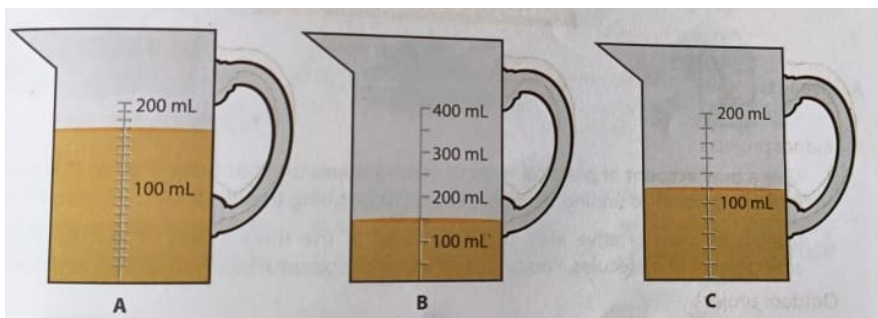
7. Fill in the blank spaces in the table below :

S.No.	Properties of the substance	Name of the substance
1.	Easily compressed	Air in a balloon
2.	Not easily compressed but takes the shape of the container	Liquid in a bottle
3.	Lustrous and hard	Metal like iron, copper
4.	Light passes completely through it	Air, glass

8. The following table has some of the distinguishing properties of solids, liquids, and gases that are mentioned incorrectly. Correct mistakes.

Properties	Solid	Liquid	Gas
Packing of particles (atoms or molecules)	The particles most closely packed	Particles less closely packed than gases	Loosely packed
Compressibility	Cannot be compressed	Can be lightly compressed	Very easy to compress
Ability to flow	Solids do not flow	Liquids can flow	Gases can flow in all directions.
Shape	Definite shape	Takes the shape of the container	No definite shape
Volume	Definite volume	Expand to the available space	No definite volume
Regidity	Very rigid	Rigid	Not rigid
Storing	Can be stored on their own	Have to be stored in containers	Gases have to be stored in closed containers

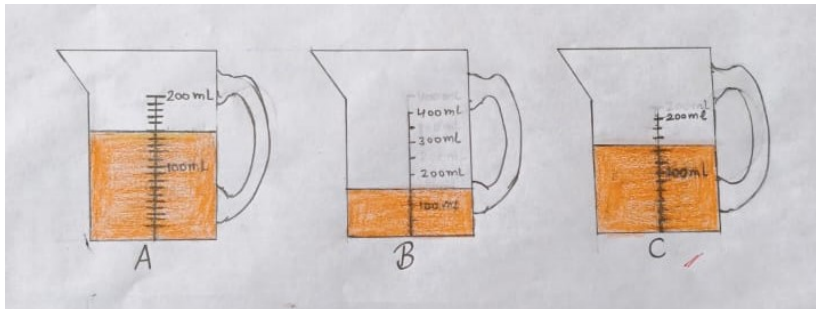
9. Given below are three jugs each of different size..



(i) Identify the volume of orange juice in each jug.

Ans. Jug A – 170 ml Jug B – 150 ml Jug C – 120 ml

(ii) Mark to show the level of 150 ml in each of the jug.



Ans.

(iii) What is the total capacity of the 3 jugs – A, B and C?

Ans. Total capacity of the 3 jugs = 200 ml + 400 ml + 200 ml = 800 ml

10. Rashmi's mother had to boil 2 litres of water in a vessel to make rice. Some water evaporated after boiling. What was the impact of it on the capacity of the vessel and volume of water?

Ans. After evaporation the capacity of the vessel will increase and volume of water will decrease.

CASE BASED QUESTION : (Pg. No. 103 – 104)

(i) What was the earliest material used for making pottery?

Ans. Clay was the earliest material used for making pottery.

(ii) What were the early improvements in making ceramic objects?

Ans. It is stronger and non-porous to liquids.

(iii) What is terracotta?

Ans. Sculpted figures made from clay is called terracotta.

(iv) What is the difference between earthenware and porcelain?

Ans. Earthenware is made from clay fired at low temperature while porcelain, made from a refined clay fired at high temperatures.