

## NCERT QUESTIONS WITH SOLUTION

1. Name five objects which can be made from wood.

**Ans.** Table, Chair, Cupboard, Penstand, Pencil.

2. Select those objects from the following which shine: Glass bowl, plastic toy, steel spoon, cotton shirt

**Ans.** Glass bowl and steel spoon

3. Match the objects given below with the materials from which they could be made. Remember, an object could be made from more than one material and a given material could be used for making many objects.

Object	Material
Book	Glass
Tumbler	Wood
Chair	Paper
Toy	Leather
Shoes	Plastics

**Ans.**

Object	Material
Book	Paper
Tumbler	Glass, plastic
Chair	Wood, plastic
Toy	Wood, paper, plastic
Shoes	Leather

4. State whether the statements given below are 'True' or 'False'.

- (i) Stone is transparent, while glass is opaque.
- (ii) A notebook has lustre, while an eraser does not.
- (iii) Chalk dissolves in water.
- (iv) A piece of wood floats on water.
- (v) Sugar does not dissolve in water.

- (vi) Oil mixes with water.
- (vii) Sand settles down in water.
- (viii) Vinegar dissolves in water.

- Ans.** (i) False (ii) False  
 (iii) False (iv) True  
 (v) False (vi) False  
 (vii) True (viii) True

5. Given below are the names of some objects and materials:

Water, basketball, orange, sugar, globe, apple, and earthen pitcher

Group them as:

- (a) Round shaped and other shapes
- (b) Eatables and non-eatables

- Ans.** (a) Round-shaped: Basketball, orange, globe, apple, earthen pitcher

Other shapes: Water, sugar

- (b) Eatables: Water, orange, sugar, apple
- Non-eatables: Basketball, globe, earthen pitcher

6. List all items known to you that float on water. Check and see if they will float on oil or kerosene.

- Ans.** Some items that float on water are listed below

1. Plastic bottle
2. Piece of paper
3. Piece of sponge
4. Piece of thermocol
5. Wood
6. Bamboo
7. Plastic ball
8. Cork

However, none of these items floats on oil or kerosene.

7. Find the odd one out from the following:

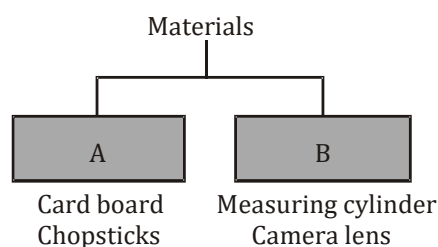
- (a) Chair, Bed, Table, Baby, Cupboard
- (b) Rose, jasmine, Boat, Marigold, Lotus
- (c) Aluminium, Iron, Copper, Silver, Sand
- (d) Sugar, Salt, Sand, Copper sulphate

- Ans.** (a) Baby (b) Boat  
 (c) Sand (d) Sand

## EXERCISE-01

**Multiple choice questions**

- Which of the following is not matter?  
(1) Water (2) Air  
(3) Sound (4) Fruits
- Classification is  
(1) grouping things as living and non-living.  
(2) grouping living things on the basis of common properties.  
(3) grouping non-living things on the basis of common properties.  
(4) grouping all things, living or non-living, on the basis of common properties.
- Classification is useful because  
(1) it makes things look neat and untidy.  
(2) it makes studying the properties of things much easier.  
(3) it does not help us in the kitchen.  
(4) it does not help us in the school library.
- Which property is common to all matter?  
(1) Matter takes up space and has no mass.  
(2) Matter can be seen and has some mass.  
(3) Matter occupy space and has mass.  
(4) Matter takes up space and may or may not have mass.
- The state of matter which has no definite shape but definite volume is  
(1) Solid (2) Liquid  
(3) Gas (4) None of these
- There are about 118 different types of  
(1) Elements (2) Molecules  
(3) Mixtures (4) Compounds
- Mrs. Reddy wants to buy a cup for her one-year child. Which material should the cup be made of?  
(1) Clay (2) Glass  
(3) Metal (4) Plastic
- A lady went to a shop to buy a bowl. She saw four bowls made up of plastic, metal, glass and porcelain. Which one of these bowls will be the first one to get scratches during use?  
(1) Plastic (2) Metal  
(3) Glass (4) Porcelain
- In the diagram below, some things have been classified according to the materials they are made of. What do A and B stand for respectively?



- Wood, metal
- Plastic, glass
- Bamboo, glass
- Bamboo, plastic

- 10.** Which of the following statements is not true?
- (1) A soft material can be scratched easily.
  - (2) Oil mixes with water.
  - (3) A soluble material disappears in water.
  - (4) We should use transparent bottles/containers in a kitchen.
- 11.** Study the following statements and then choose the correct option.
- (I) A metal weight is hard. Therefore, it sinks in water.
  - (II) Plastic is hard. It can be scratched easily.
- (1) Statement I is correct for all hard substances.
  - (2) All soft objects cannot be scratched easily.
  - (3) All soft objects will float in water.
  - (4) Both statements are wrong.
- 12.** A needle and a knife belong to the same group because
- (1) they are transparent
  - (2) they are magnetic
  - (3) they float on water
  - (4) they are poor conductors of heat
- 13.** Gases possess neither fixed volume nor fixed shape because
- (1) molecules are tightly packed.
  - (2) molecular motion is fast.
  - (3) there is very little force between molecules.
  - (4) it is difficult to make the molecules move away from each other.
- 14.** A substance exists in the solid state because
- (1) forces between its molecules are weak.
  - (2) molecules are tightly packed.
  - (3) molecules can move throughout the volume occupied by the substance.
  - (4) molecules can move freely in the entire space available to them.
- 15.** Which of the following statements is not true?
- (1) Kerosene oil is transparent material.
  - (2) Wood is a translucent material.
  - (3) Butter paper is a translucent material.
  - (4) All gases are transparent.
- True or False**
1. All objects are made up of only one kind of material.
  2. Sorting of materials into groups is done on the basis of similarities and differences in their properties.
  3. Different objects can be made from the same material.
  4. Materials are grouped for our convenience to study their properties.
  5. Mercury is a liquid metal.
  6. An old copper object is reddish in colour.
  7. Iodine crystals have lustre.
  8. Things made of copper and aluminium have lustre.
  9. Talcum is the hardest substance in nature.
  10. Diamond is the hardest naturally occurring substance.
  11. Washing powder used for washing is soluble in water.
  12. Natural water contains dissolved carbon dioxide, which helps in the respiration of fishes.

13. Honey is immiscible with water.
14. Alcohol is immiscible with water.
15. Honey floats on the surface of water.
16. An oily thin paper sheet will be transparent.
17. Glass, water and air form a set of transparent materials.
18. Diamond is an opaque substance.
19. Butter paper is transparent material.
20. A looking mirror is an opaque material.

**Fill in the blanks**

1. The freshly sandpapered surface of a metal has \_\_\_\_\_.
2. Common salt is \_\_\_\_\_ in water.
3. Most of the gases are \_\_\_\_\_ in water.
4. Coconut oil \_\_\_\_\_ on the surface of water.
5. Glass is a \_\_\_\_\_ substance.

**Match the column**

Column-I		Column-II	
(1)	A material which is capable of scratching another material	(a)	Carbon dioxide
(2)	A liquid which does not dissolve in water	(b)	Translucent
(3)	A term used to describe a particular kind of matter.	(c)	Hard
(4)	A substance through which you can see partially	(d)	Material
(5)	A gas which is slightly soluble in water	(e)	Immiscible

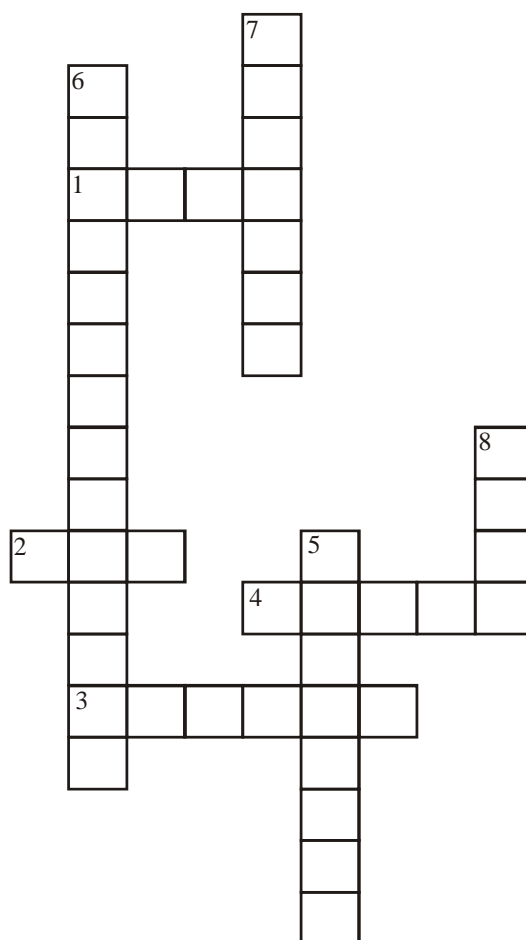
**Find the odd one out from the following**

1. Common salt, glucose, copper sulphate and powdered glass.
2. Jasmine, marigold, bucket and rose.
3. Gems, aluminium, silver and lead.
4. Chair, table, cupboard, baby and bed.
5. Wall, gate, iron, plastic and air.

**Answer in one word**

1. We are the materials with lustre.
2. I am a material that is generally used to make toys for children to play.
3. I am an elastic material but a non-conductor of heat.
4. I am a material and can be made into tumbler but cannot hold water.
5. We are the materials which can be compressed easily.
6. We are a group of materials that are hard and are good conductors of electricity.
7. I am hard and have a rough surface and in pieces float on water.
8. We are a group of materials through which things are not clearly visible.
9. I am a mixture of number of gases and transparent also.
10. I am a gas, which is essential for growth of plant.

### Crossword puzzle



#### Across

1. Smallest particle of an element
2. A state of matter which has maximum intermolecular spaces between their molecules.
3. Gas we breathe in
4. State of matter with least intermolecular spaces between their molecules.

#### Down

5. Smallest particle of a compound
6. To group together things with similar properties
7. We call iron, gold or hydrogen as
8. A yellow-coloured metal

## ANSWER KEY

### Multiple choice questions

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	4	2	3	2	1	4	1	3	2	4	2	3	2	2

### True or False

- |           |           |           |           |          |           |
|-----------|-----------|-----------|-----------|----------|-----------|
| 1. False  | 2. True   | 3. True   | 4. True   | 5. True  | 6. False  |
| 7. True   | 8. True   | 9. False  | 10. True  | 11. True | 12. False |
| 13. False | 14. False | 15. False | 16. False | 17. True | 18. False |
| 19. False | 20. True  |           |           |          |           |

### Fill in the blanks

1. Lustre      2. Soluble      3. Insoluble      4. Floats      5. Transparent

### Match the column

1. (1) → c ; (2) → e ; (3) → d ; (4) → b ; (5) → a

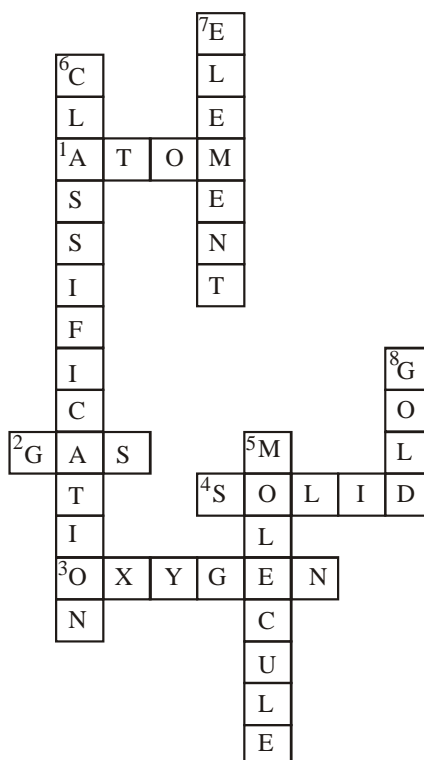
### Find the odd one out from the following

1. Powdered glass      2. Bucket      3. Gems      4. Baby      5. Air

### Answer in one word

- |           |            |                |          |              |
|-----------|------------|----------------|----------|--------------|
| 1. Metals | 2. Plastic | 3. Rubber      | 4. Paper | 5. Gases     |
| 6. Metals | 7. Wood    | 8. Translucent | 9. Air   | 10. Nitrogen |

### Crossword puzzle



## EXERCISE-02

### Very short answer type questions

1. What is classification?
2. Name the largest diamond found in Africa.
3. What is the need of grouping?
4. Classification is done only for living things. True or false?
5. Which of the following objects are soluble in water?  
Chalk powder, Sugar, Clay, Table salt
6. In the following list, circle the one which is not matter-air, water, pen, balloon, feelings, petrol.
7. What is the grouping together of things with similar properties called?
8. Name one natural material we get from trees.
9. Name the hardest substance.
10. Mention a property which is present in silk cloth but not in cotton cloth.
11. Are all liquids miscible with water?
12. Name one gas which is soluble in water.
13. Why would a solid sink in water?
14. Which out of the oil and iron nail will sink in water?

15. What term will be used for a material through which light can pass partially but you cannot see through it?

### Short answer type questions

1. List five materials. Name one thing that is made from each of these.
2. What is the advantage of classification of materials?
3. What do you mean by texture?
4. Metals are lustrous, but an iron rod used in construction does not shine. Explain.
5. How can you make paper translucent?

### Long answer type questions

1. What is classification? How is it useful?
2. What is the difference between miscible and immiscible liquids? Give one example of each.
3. How does sugar dissolve in water?
4. How does an object float or sink down in water?
5. What is the difference between transparent and opaque objects? Give two examples of each.

## Exercise-01 Solutions

**Multiple choice questions**

1. **Option (3)**  
Because it does not occupy space (has no volume) and has no mass.
2. **Option (4)**  
The act of dividing things into category, according to some common relations or affinities.
3. **Option (2)**  
It makes studying the properties of things much easier.
4. **Option (3)**  
Matter is anything that has mass and occupies space.
5. **Option (2)**  
Liquids is a matter which has no fix shape but fix volume.
6. **Option (1)**  
All materials are further made up of simpler material called as element. There are almost 118 elements known at present.
7. **Option (4)**  
Because plastic is light weight material. It is applicable for one year child.
8. **Option (1)**  
Plastic is a soft object other than three. All soft objects can be scratched easily.
9. **Option (3)**  
Because card board and chopsticks are made up of Bamboo. Measuring cylinder and camera lens are made up of Glass.
10. **Option (2)**  
Oil does not mix with water but it floats on the surface of water because oil is lighter than water.
11. **Option (4)**  
A metal weight is heavy not hard, it therefore sinks in water. And plastic is soft, it can be scratched easily.
12. **Option (2)**  
Because needle and knife are made up of iron.
13. **Option (3)**  
As forces between molecules are very little, spaces between molecules are more. Therefore gases take any shape and volume.
14. **Option (2)**  
Because kinetic energy is negligible in solid, motion of molecules is almost zero. Therefore molecules are tightly packed.
15. **Option (2)**  
Wood is not translucent material. It is an opaque material and it does not allow light to pass through.

**True or false**

1. **False**  
Objects can be made up of different kind or one kind of materials.
2. **True**  
Sorting of materials into groups is done on the basis of both similarities and differences in their properties.
3. **True**  
Different objects can be made from the same material like table, chair, cupboard can be made from wood.
4. **True**  
It will become easy to study their properties.



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|---|--|
| <p><b>5. True</b><br/>Mercury is the only metal which exists as liquid state at room temperature.</p> <p><b>6. False</b><br/>Copper becomes green on exposure to atmosphere.</p> <p><b>7. True</b><br/>Iodine crystals possess shiny appearance.</p> <p><b>8. True</b><br/>Because copper and aluminium are metals. Metals are generally possess lustre i.e. shiny appearance.</p> <p><b>9. False</b><br/>Talcum is the softest substance in nature.</p> <p><b>10. True</b><br/>Diamond is the hardest substance which can be used to cut glass.</p> <p><b>11. True</b><br/>Washing powder is soluble in water and used for washing clothes.</p> <p><b>12. False</b><br/>Natural water contains dissolved oxygen, which helps in the respiration of aquatic animals and plants.</p> <p><b>13. False</b><br/>Honey is miscible with water.</p> | <p><b>14. False</b><br/>Alcohol is miscible with water.</p> <p><b>15. False</b><br/>Honey is miscible with water so does not float on the surface of water.</p> <p><b>16. False</b><br/>An oily thin paper sheet will be translucent as it can pass the light partially.</p> <p><b>17. True</b><br/>A material through which you can see clearly is called transparent material. It happens so because light can pass through it and you can see through glass, water and air.</p> <p><b>18. False</b><br/>Diamond is a transparent substance because we can see clearly through it</p> <p><b>19. False</b><br/>Butter paper is translucent material because we can see partially through it.</p> <p><b>20. True</b><br/>You cannot see through the mirror. The property of material through which you cannot see is called opacity so it is an opaque material. It does not allow light to pass through it.</p> |
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## Exercise-02 Solutions

## Very short answer type questions

1. The act of dividing things into category, according to some common relations or affinities is called classification.
2. The largest diamond found in Africa is Cullinan.
3. Materials can be grouped on the basis of their properties and it makes their study easier.
4. False, we also divide non-living things on the basis of their common properties.
5. Sugar and Table salt are soluble in water.
6. Feelings are not matter because it doesn't occupy space and doesn't have mass.
7. Grouping together of things with similar properties is called Classification.
8. Wood is a natural material which we get from trees.
9. Diamond is the hardest substance.
10. Silk is lustrous but cotton is not.
11. No, all liquids are not miscible with water. Coconut oil is a liquid which is immiscible with water.
12. Oxygen is soluble in water.
13. A solid sink in water because they are generally heavier than water.
14. Iron nail will sink in water as it is heavier than water.
15. Translucent term will be used for a material through which light can pass partially but you cannot see through it.

## Short answer type questions

1. (i) Iron nail                      (ii) Knife  
(iii) Needle                      (iv) Key  
(v) Scissors  
All things are made from Iron.
2. Advantages of classification of materials  
(i) It makes study of materials easy.  
(ii) It makes materials systematic.  
(iii) It makes things look neat and tidy  
(iv) It helps us in every field of daily life.
3. The word texture means: what things are made of and how they feel. Textures can be described as "rough", "smooth", "hard", "soft", "liquid", "solid", "lumpy", "gritty" etc. The word "texture" is used for many different things.
4. Metals are lustrous, but an iron rod used in construction does not shine because iron reacts chemically with air and moisture present in atmosphere and form their oxide which have dull appearance.
5. If we pour a few drops of oil on the paper when oil spreads on the paper you will notice that the objects outside are faintly visible and such materials through which you can see partially are called translucent.

### Long answer type questions

1. The act of dividing things into category according to some common relations or affinities is called classification.

It is so useful since it makes it easy for things to be identified. Things and organisms are normally classified depending on their features and characteristics. It helps us to identify organisms. It organizes information.

2.

Miscible liquids		Immiscible liquids	
1.	When two solution can be mixed to form one solution are called miscible liquids.	1.	When two liquids do not mix together, then it is known as immiscible liquids.
2.	They will form homogeneous mixture.	2.	They will form heterogeneous mixture.
3.	No distinct layers are found when they get mixed.	3.	Two layers are found when they get mixed.
4.	Miscible liquids mix uniformly	4.	Immiscible liquids are not mixed uniformly.
5.	For e.g. vinegar, sugar-water solution	5.	For e.g. Oil and water.

3. Sugar dissolves in water because it is a soluble substance. When we put a spoon full of sugar into a tumbler filled with water and stir the content, the sugar completely disappears. The particle theory states that there are spaces between all particles. This means that, in a glass of water, there are many water particles but also many empty spaces. The same is true in a cup of sugar. When you look at sugar, you can see many crystals of sugar. Each sugar crystal contains enormous numbers of invisible sugar particles. When sugar dissolves, the sugar particles separate and mix with the water particles. The water and sugar particles are attracted to each other so they move closer together when they are mixed. This is why the total volume is often slightly less than the sum of the two separate components.

4. Density is the mass occupied by a substance per unit volume and is obtained by dividing the mass by the volume occupied.

If material has higher density than water so it will sink otherwise it will float.

Objects that are more dense than water will not float in the water. Adding salt to water increases its density and so becomes more buoyant. For a less denser liquid the floating object immerse more. For a much more denser the same object immerse less.

5.

Transparent objects		Opaque objects	
1.	These objects allow light to pass through them.	1.	These objects do not allow light to pass through them.
2.	One can clearly see through transparent objects.	2.	One cannot see through opaque objects.
3.	Transparent object do not cast shadows because they do not block light.	3.	Opaque object cast shadows because they block light.
4.	Example: Glass, Diamond	4.	Example: Wood, Stone.