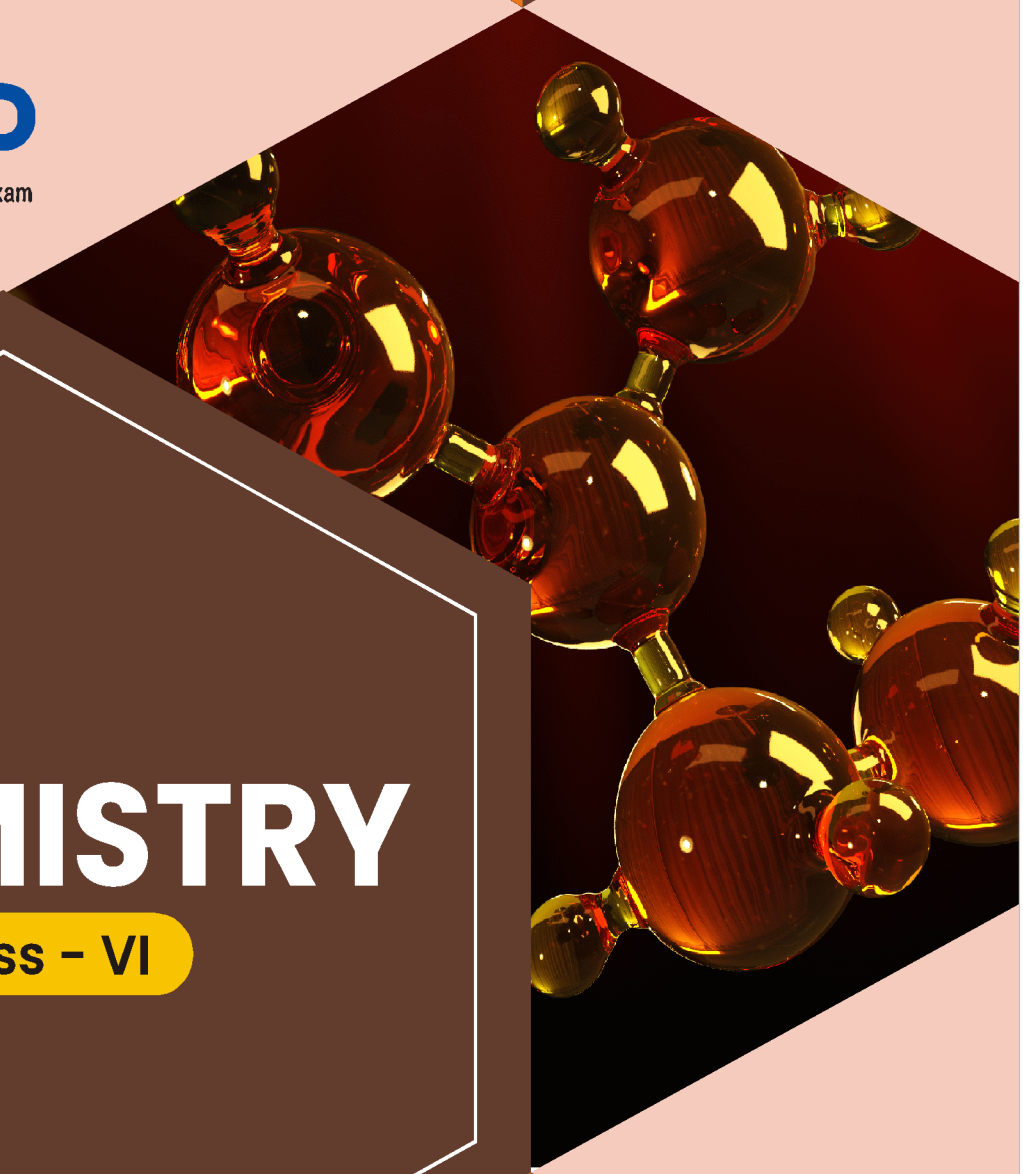
MATRIX OLYMPIAD

The Most Innovative Talent Recognition Exam



CHEMISTRY

Class - VI

MATRIX

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Few words for the Readers

Dear Reader,

"*Matrix Olympiad is established to encourage school students to go a step further than their regular studies, and get a chance and exposure to competition on a wide scale. It also helps students enhance their learning of basic cognitive skills and deeper knowledge of subjects like Science, Mathematics, English, Mental Ability, Social Studies.“Matrix Olympiad helps students nurture their minds for higher targets of tomorrow and enables them to study School for JEE, NEET, CLAT, NDA, Olympiads , NSEJS, NTSE , STSE etc.*"

The above thought has been our guiding principle while designing and collating the study material for **Matrix Olympiad** . And hence, we hope that this particular material will be helpful towards your preparation for **Matrix Olympiad**.

Our team at **MATRIX** has put in their best efforts for making this particular module interesting and relevant for you. Additional efforts have been made to ensure that the content is easy to understand and error free to the extent possible. However, there might remain some inadvertent errors in answer keys and theoretical portion and we would welcome your valuable feedback regarding the same.
If there are any suggestions for corrections, please write to us at **smd@matrixacademy.co.in** and we would be highly grateful.

Finally, we would like to end this message by a famous quote by Ernest Hemingway - "*There is no friend as loyal as a book*." So, please give your study material the time and attention it deserves, and it will surely help you reach newer heights in your fight with competition examinations.

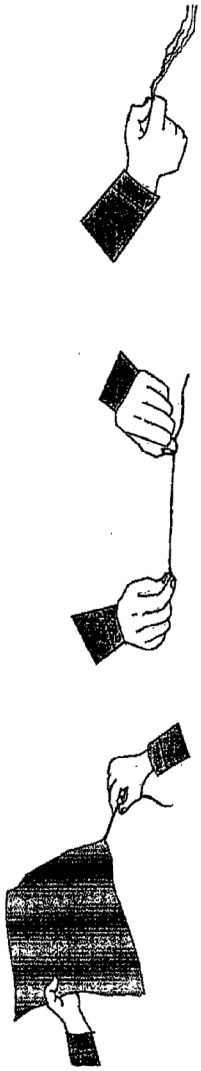
With love and best wishes !
Team MATRIX

CONTENTS

FIBRE TO FABRIC

1

Concepts



INTRODUCTION

Clothing is one of the basic necessity of human life. We wear clothes to protect us against weather conditions such as heat, cold, rain, snow, storm, etc. Clothes also offer protection against insects, germs, etc. Clothes reflect our personality and make us look good. People in different regions of the world wear different kinds of clothes. It usually depends on the climate of that place. In addition, every region has its own traditional clothing.

BUILD THE CONCEPT

Why do human being need clothes, but animals do not?

Explanation :

All animals are well protected from heat and cold with fur (thick coat of hair) present all over the body. Further more, they have thick skin and lots of fat under it. That is why they do not need clothes.

1. HISTORY OF CLOTHING MATERIAL

- Clothing is exclusively a human characteristic. Evidences suggest that human beings may have begun wearing clothes as far back as 100,000 to 500,000 years ago. Long ago, people used to cover their bodies with bark and big leaves of trees or animal skin and fur.
- After people began to settle in agricultural communities, they learnt to weave twigs and grass into mats and baskets. Animal fleece or hair were twisted together into long strands, which were then woven into fabrics. The early Indians wore fabrics made out of cotton that grew in the regions near the river Ganga. In ancient Egypt, cotton as well as flax were cultivated near the river Nile and were used to make fabrics.
- As stitching was not known in those days, therefore people simply draped the fabrics around different parts of their body. Fabrics were draped in many different ways. With the invention of the sewing needle, people started stitching fabrics to make clothes. Stitched clothes have gone through many variations since this invention. But, even today saree, dhoti, lungi, turban, etc., are popularly used as unstitched pieces of fabrics.
- The material that is used to make the clothes is called fabric. Different types of clothes, e.g., bed sheets, blankets, towels, school bags, dresses, socks, etc., are made up of different types of fabrics. A fabric is made up of thin, hair-like strands called fibres. Formation of fabric from fibres is a long and complex process. The objective of studying this chapter is to gain knowledge about different types of fibres, their sources and the processes used to convert fibre into fabrics.

LAB TIME
Let's Do & Learn

Object :To identify different types of fabrics.
Procedure :

- Collect some cuttings of different types of fabrics from a tailor's shop.
- Paste these cut pieces in your notebook.
- By taking help from the tailor or your mother or class teacher, label them as cotton fabric,woollen fabric, silk fabric, synthetic fabric etc.
- Now, feel each piece of fabric by touching it and try to identify its characteristic.
- You will find that cotton is light and reasonably smooth, wool fabric is fluffy, silk fabric is smooth and shiny, synthetic fabric is light and smooth.

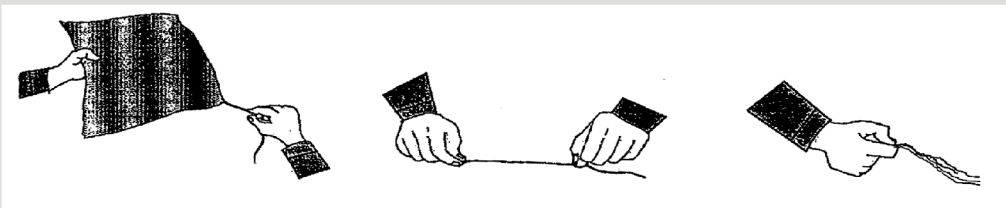
2. VARIETY IN FABRICS

- Fabrics are of different types, e.g., cotton fabric, silk fabric, woollen and synthetic fabric.
- All fabrics are made of yarns that are woven or knitted together and each yarn is further made of thinner strands called fibres. Let us understand it with an activity.

LAB TIME
Let's Do & Learn

Object :To observe that fabric is made up of yarns and yarn is made up of fibres.
Procedure :

- Take a piece of cotton fabric. Pull out a loose thread or yarn at one of the edges of the fabric (figure - a).
- If you observe the fabric very closely or with the help of a magnifying glass, you will find that the fabric is made up of a large number of such threads or yarns woven together.
- Now, put this yarn on a flat surface. Press one end of the yarn with your thumb and scratch the other end along its length with your nail (figure -b). The yarn will split up into thin strands (figure- c) These thin, hair-like strands are called fibres.



(a) Pull a yarn (b) Scratch the yarn with your nail (c) Yarn splits into fibres

3. FIBRE

Fibres are very fine, hair-like strands that cannot be made into a fabric directly. So, they are first converted into yarns which are longer, thicker and stronger. The process of making yarn from fibres is called spinning. A yarn is a continuous strand made up of a number of fibres twisted together. These yarns are then used to make fabrics.

♦ **Fibres can be classified into two main types on the basis of their origin :**

(i) Natural fibres : Natural fibres are obtained either from plants (plant fibres) or from animals (animal fibres). Cotton, jute and linen or flax are obtained from cotton, jute and flax plants respectively. Wool is obtained from the fleece of animals such as sheep, goat, yak, etc., and silk is obtained from cocoon of silkworms.

(ii) Man-made (synthetic) fibres : These fibres are artificially synthesised from chemicals, mainly from petroleum, e.g., nylon, polyester, acrylic, etc

Focus Point

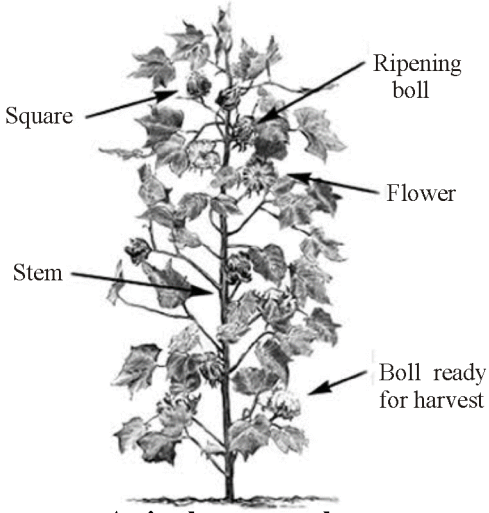
- A continuous piece of cloth which is generally used as a dress material, is called fabric. For example, silk, cotton, jute, nylon, etc.
- Rayon is not completely man-made but a semi-synthetic fibre because raw material required for its preparation is cellulose which is a plant material.

  Rayon → Shiny cotton (Ray-sun ray-shine, on → taken from cotton)
- Fibres of carbon nanotubes can be woven into fabrics that can store energy, receive radio signals or act as sensors. These fabrics can track the body movements of athletes, dancers and soldiers wear them.

4. SOME PLANT FIBRES

4.1 COTTON

- Cotton plant is a shrub, usually grown at places having black soil and warm climate with moderate rainfall. Black soil has the ability to retain moisture and thus, it is best suited for the cultivation of cotton plant.



A single cotton plant

A field of cotton plants

Figure : Cotton

- Every year during spring, new cotton seeds are planted. The fruits of the cotton plant (cotton bolls) are about the size of a lemon.
- When the crop grows to maturity, the cotton bolls burst open and seeds with their fibres are harvested. A cotton field that is ready for harvesting gives the appearance of a field covered with snow.

♦ **The fibres are then used to create the yarn involving the following steps :**

(i) Picking : Cotton is usually hand-picked from cotton bolls. Fibres are then separated from the seeds by combing.

(ii) Ginning : This process of separating the cotton fibres is called ginning. Cotton fibres that have been separated from the seeds are referred to as lint. Ginning of cotton can be done manually (by hands) or with the help of ginning machines called cotton gins.

Ginning machine

Ginning by hand

Figure : Ginning process

Focus Point

- When some cotton wool is pulled apart, the thin, small strands that are seen at the edges are cotton fibres.
- Cotton wool is used to make wicks for oil lamps and is also used for filling mattresses, quilts, pillows, cushions, etc.
- Use of charkha was popularised by Mahatma Gandhi as part of the Independence movement. He encouraged people to wear clothes made of home spun yarn and shun imported cloth made in the mills of Britain.

(iii) Spinning of cotton yarn : The cotton fibre is the most widely used plant fibre, obtained from cotton plant. Cotton fibres obtained after the process of ginning are then spun into yarn, by drawing out and twisting the fibres together. The process of making yarn from fibres is called spinning. The spinning process makes the yarn strong, smooth and fine. Spinning can be done with hand-operated devices such as takli (a hand spindle) and charkha. On a large scale, spinning is done by means of spinning machines. After spinning, yarns are used for making fabrics by the processes weaving and knitting.

Hand spindle

Charkha

Spinning machinery

Figure : Cotton spinning devices

Focus Point

- Cotton fibre is the backbone and basic foundation of the world's textile trade and industry. The properties of cotton fibre make it a most widely used fibre in textile industry.
- Cotton is a breathable fabric, i.e, the air can pass in and out through its fibres, thus making cotton fabric comfortable to wear.
- Cotton fibre has very good absorbency. It can abosrb a large amount of water. Due to breathability and absorbency of cotton fabric it absorbs sweat and then lets it evaporate so as to produce a cooling effect. Thus, cotton fabric is the most comfortable fabric for summers.
- Cotton fibre has good strength, i.e., it cannot be easily broken. It is one of the few fibres which becomes stronger when wet.
- Cotton fibre can be easily dyed into different colours.

(iv) Yarn to fabric : The two main methods by which fabrics are made from yarn are : weaving and knitting.

(a) Weaving

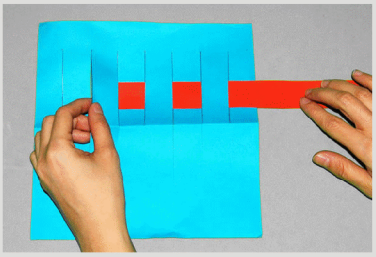
- It is the process of arranging two sets of yarns together to make a fabric. Weaving of fabric is done on looms. Looms are either hand operated (handlooms) or power operated (powerlooms).
- On a loom, a fabric is produced by interlacing two sets of threads at right angles. The process of weaving can be understood by performing the following activity.

LAB TIME
Let's Do & Learn

Object : To understand the process of weaving by making a placemat.

Procedure :

- Take two different coloured sheets of paper, e.g., red and green.
- Cut square pieces of 30 cm length and width from each sheet.
- Now fold both the sheets into half.
- Draw lines on both the sheets.
- Cut both the sheets along the lines and then unfold the sheets.
- Weave the strips of red coloured paper one by one through the cuts or slits in the green coloured paper.
- Arrange the strips so that they are evenly spaced in the slits. Be sure the strips do not extend beyond the edges of the placemat. With the help of glue, paste the ends of the strips, top and bottom to the placemat.
- This activity can be made more interesting by cutting the green coloured paper in a zig-zag or wavy manner.
- You will get a woven pattern .Weaving is done in looms in a similar manner but the yarns used are much thinner than the paper strips.



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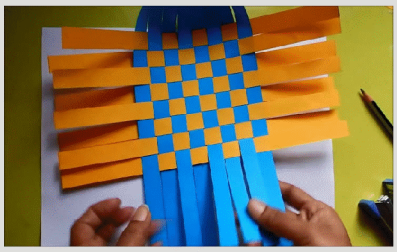

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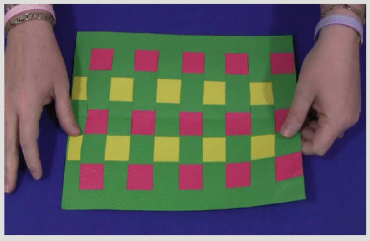

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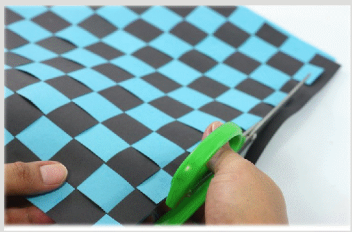

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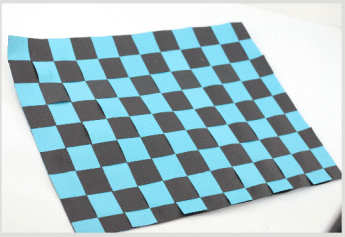
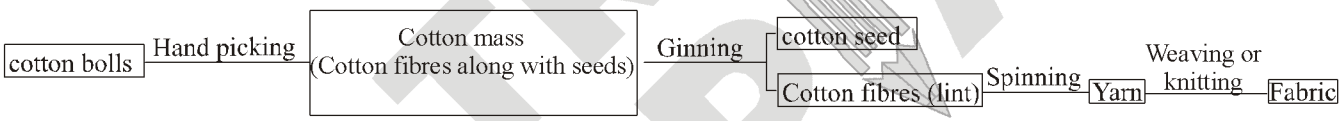


(v)

(b) Knitting

- You must have noticed your mother or grandmother knitting sweaters for you at home.
- The process of making a piece of fabric from a single yarn is called knitting.
- Knitting is done either by hand or by machines. Since knitting is done from a single yarn, if we pull a yarn from a sweater it gets unravelled. Socks, sweaters and many other clothing items are made by knitting yarns.

Figure : Knitting by hands



♦ **Uses of cotton :**

- Cotton is used in the manufacture of fish nets, coffee filters, tents and in book binding.
- The cotton seed, which remains after the cotton is separated from its seeds or ginned, is used to produce cotton seed oil, which after refining can be consumed like any other vegetable oil.
- The cotton seed meal (khal) that is left is generally fed to livestock.

4.2 JUTE

- Jute is the second most important natural plant fibre after cotton in terms of cultivation and usage. Jute fibre is obtained from the stem of jute plant. Jute is one of the cheapest natural fibres. Some of the useful properties of jute fibre are its biodegradability, durability and strength. Jute is a rainy season crop and grows best in warm and humid weather.
- Jute grows best in alluvial soil receiving silt from annual floods, as in the Sunderbans delta in India and Bangladesh where almost 85% of the world's jute cultivation is concentrated. In India, jute is mainly grown in West Bengal, Bihar and Assam.

♦ **Jute fibres are used for a wide variety of purposes such as:**

(i) To make cloth for wrapping bales of raw cotton.

(ii) To make sacks and other wrapping materials.

(iii) To make curtains, handbags, chair coverings, carpets and many other things.

- **The process of obtaining jute yarn from the plant is as follows :**

(a) Retting of jute fibres

- Jute plants are harvested after flowering and before they turn into fruits. After harvesting, the stalks of the plants are tied into bundles and soaked in water for a few days (about 20 days). It leads to the rotting of the stem. This is done to soften the tissues so that the fibres can be easily separated. This process is called **Retting**.
- The fibres are then stripped from the stalks in long strands and washed in clear, running water. Then they are hung up or spread out to dry. After 2-3 days of drying, the fibres are tied into bundles and sent to the mills. India, China and Bangladesh are the three major producers of jute fibre.

(b) Spinning : The fibres are made into yarn by twisting the strands together. This process of making yarn from fibre is called spinning. The strong threads made from jute fibres are used in making sacks and help to sustain the livelihoods of millions of small farmers. Jute yarn and twines are also woven into curtains coverings, carpets, and rugs.

Jute plant | Jute crop | Jute harvesting

Retting of Jute | Jute products

Figure : Jute plant, crop, harvesting, retting & various products

4.3 COIR

- Coir is the fibre obtained from the outer covering of the fruit of the coconut palm.
- Usually coconuts are left in water for a few months. The husk is then separated from the nut beaten with wooden mallets to get the fibre. The fibre thus obtained is then spun and dyed and is ready for weaving.
- There are various qualities of coir. Coir is used to make several household products like repes and floor coverings. Some varieties are used as a stuffing in matteresses and pillows.

Figure : Coir

4.4 KAPOK

- The fruits of the kapok tree contain fibres that are light open, releasing the fibres. Bursting of the fruit also helps the tree in dispersing its seeds.

Figure : Kapok

4.5 HEMP

- Hemp fibres are obtained from the stem of the hemp plant. Hemp plants grow best in loamy soil. Hemp fibres are used in the production of ropes, carpets, nets, clothes, and paper.

Figure : Hemp

4.6 FLAX

- Fibres obtained from the stem of the flax plant are wove to make a fabric called linen. Flax fibre are also used in the production of ropes and high quality paper.

Figure : Flax

5. ANIMAL FIBRE

These fibres are obtained from animals. Some of the common examples of animal fibres are wool and silk.

5.1 WOOL

Wool is obtained from the fleece of sheep or hairy animals (for example, yaks, camels, cashmere goats and angora rabbits). The fleece is sheared, washed, dried, and then spun into yarn. This yarn is then woven or knitted to make clothes. Wool is flexible, absorbs moisture, and is dirt and flame resistant. It is used for making fine clothing and in bedding, upholstery, and carpets.

Figure : Sheep Bearing Wool

5.2 SILK

Silk is produced from cocoons of the silkworm which feeds on mulberry leaves. It secretes an unbroken fibre cocoon around itself. The cocoon is boiled and unwound to form the fibre which is then spun. Silk is the strongest natural fibre. It dries quickly, does not shrink, retains its shape, drapes well, has a natural shine, and can be easily dyed. The silk fibre is made into fabrics such as satin, velvet chiffon, crepe, and brocades.

Figure : White Cocoon and silkworm

6. SYNTHETIC FIBRE

Fibres made by human beings from chemical substances are called synthetic or man-made fibres. These fibres are made from chemical substances processed from crude oil. Examples of synthetic fibres are polyester, nylon, and acrylic. The chemical substances are first heated so that they melt and then forced through spinnerets that have fine pores. The long threads that come out from these pores are allowed to cool and solidify. These threads are then twisted together to form yarn which is ultimately used to make fabric.

This synthetic cloth so formed is strong, does not get wrinkled and dries easily. However, since they have lesser air spaces within them, the fabric does not absorb sweat and is unsuitable to be used in hot and humid climate. Thus, synthetic fibres are usually mixed with other natural fibres such as cotton or wool to make cloth.

Figure : Synthetic Fibres

LAB TIME
Let's Do & Learn

Object :To identify the yarns of different fabrics by their burning properties.

Procedure :

- Pull out 5-6 different yarns from different types of fabrics such as cotton, silk, wool, etc.
- Hold one end of the yarn with a tong and bring the other end over the flame of a candle,
- Perform the same activity with different types of yarns and observe carefully,
- Match your observations with those given in the following table.

Table : Burning properties of cotton, wool, silk and synthetic yarns or fibres.

Types of fibre	Burning properties	Odour on burning
Cotton	Catches fire easily, continues to burn with a yellow flame, does not shrink or melt	Burning paper
Silk and wool	Does not catch fire easily, shrinks away from the flame, burns with a yellow flame but does not melt, does not continue to burn	Burning hair
Synthetic fibres	(e.g., Shrinks, burns and melts into a very hot bead	Depends on the
nylon, polyester, acrylic)	that drips dangerously	type of fibre

SOLVED EXAMPLES

SE. 1

(a) What is a fibre? Name two items that are made from jute fibre,

(b) From which part of the plant coir is obtained?

Ans. (a) A fibre is a thin hair-like strand from which fabrics are made. Gunny bags and carpets are made from jute fibre.

(b) Coir is obtained from the husk of coconut. Husk is the fibrous covering present on outer shell of coconut fruit.

SE. 2

Explain the process involved in making cotton fabric from cotton plant.

Ans. Cotton fibres are obtained from the cotton bolls (fruits of cotton plant). The process involved in making cotton fabric from cotton plant is as follows:

(i) Harvesting of cotton bolls : When the cotton crop attains maturity, the cotton bolls burst open and seeds with the fibres are harvested. Cotton is usually hand picked from the cotton bolls.

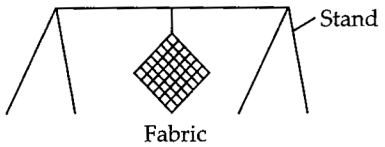
(ii) Ginning: After harvesting, cotton fibres are separated from the seeds by combing. This process is called ginning. Ginning can be done by hands or by ginning machines.

(iii) Spinning : In this process, fibres from a mass of cotton wool are drawn out and twisted. This brings the fibres together to form a yarn. Spinning can be done by hand-operated devices such as takli, charkha or by spinning machines.

(iv) Weaving and knitting : Weaving and knitting are the two processes by which fabrics are made from yarns. In weaving, two sets of yarns are arranged together to form a fabric while in knitting, a single yarn is used to make a fabric.

SE. 3

Smita took a piece of fabric to study its properties. Her mother assisted her in performing the activity. They hung the piece as shown in the given figure, burned it and observed that the fabric burns fast and produces the smell of burning paper. Based on above observation, answer the following questions.



(a) Name the fabric and its source.

(b) Why this fabrics is preferred to make clothes for summer seasons?

Ans. (a) The fabric is cotton fabric that is made from cotton fibres obtained from cotton plant.

(b) From the given observation, it is clear that the fabric is cotton fabric. Cotton fabric is preferred to make clothes for summer season because cotton fabric is soft, absorbs sweat and lets air pass through it easily. The sweat absorbed by cotton fabric evaporates easily because of the air spaces present between the fibre. This results in cooling down of the body. Cotton clothes are thus, comfortable to wear during hot and humid weather.

SE. 4

Fill in the blanks in the following paragraph.

Jute fibre is obtained from the (i) of jute plant. Jute crop is cultivated in the (ii) season. After harvesting, the (iii) of jute plants are tied into bundles and soaked in water for a few days to (iv) the tissue. It leads to (v) of the stem and then (vi) are separated by hands. This process is called as (vii) of jute fibres.

Ans. (i)-stem, (ii)-rainy, (iii)-stems, (iv)-soften, (v)-rotting, (vi)-fibres, (vii)-retting

SE. 5

What kind of climate and soil is required by cotton crop to give better yield ?

Ans. Cotton is a warm season crop which require a moderate rainfall of 50 cm to 80 cm. It requires a temperature ranging from 21°C to 27°C. Black soil has the ability to retain moisture and thus, is best suited for the cultivation of cotton plant.

SE. 6

Why the fibres cannot be directly made into fabrics without first converting them into yarns?

Ans. Fibres cannot be made directly into a fabric as they are very thin, small and weak. So they are first converted into yarns by the process of spinning. Yarns are longer, thicker and stronger.

SE. 7

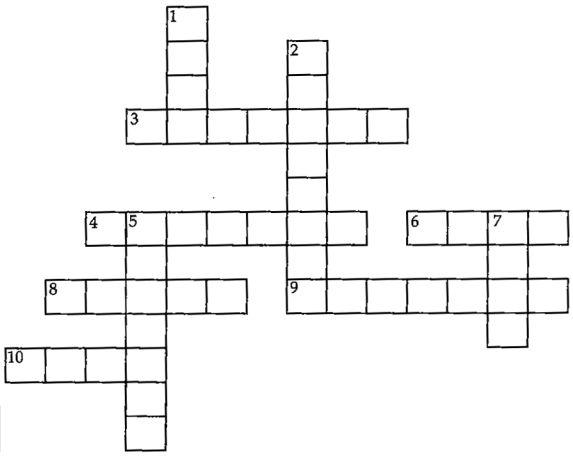
Solve the given crossword puzzle with the help of clues given.

Across

3. Arranging two sets of yarns together
4. A synthetic fibre
6. An animal fibre
8. Soil best for cotton cultivation
9. Process of separation of cotton fibres from seeds
10. Part of coconut fruit from which coir is obtained

Down

1. A fibre obtained from plants
2. Making fabric by using single set of yarn
5. Device used for spinning cotton
7. Cotton fibres left after the removal of seeds



Ans. Across : 3-Weaving, 4-Acrylic, 6-Silk, 8-Black, 9-Ginning, 10-Husk

Down : 1-Jute, 2-Knitting, 5-Charkha, 7-Lint

SE. 8

Name two natural and two synthetic fibres.

Ans. Natural fibres : Cotton, Jute

Synthetic fibres : Nylon, Acrylic

EXERCISE – I

ONLY ONE CORRECT TYPE

1. Which one of the following is a synthetic fibre?

(A) Nylon (B) Rayon

(C) Cotton (D) All of these

2. _____ is a cellulose fibre.

(A) Cotton (B) Wool

(C) Silk (D) None of thesee

3. The clothes are made up of thinner strands called

(A) Yarn (B) Thread

(C) Fibre (D) Fabric

4. Separation of fibres of cotton from its seeds is known as

(A) Weaving (B) Spinning

(C) Knitting (D) Ginning

5. Eri is a type of

(A) Silk (B) Wool

(C) Cotton (D) None of these

6. Number of yarns used to make fabric by weaving and knitting are

(A) Two sets of yarns in each case

(B) Single yarn in each case

(C) More than two yarns

(D) Single yarn in knitting and two sets of yarn in weaving

7. Weaving of fabric is done by

(A) Handlooms

(B) Powerlooms

(C) Both (A) and (B)

(D) Takli

8. Which fibres are used to make clothes?

(A) Natural (B) Synthetic

(C) Both (D) None of these

9. Which of the following is a plant fibre?

(A) Wool (B) Silk

(C) Cotton (D) Nylon

10. The right time to cut jute plants is

(A) Matured stage

(B) Before flowering stage

(C) Flowering stage

(D) Any time after flowering

11. Which of these is not a natural fibre?

(A) Leather (B) Jute

(C) Wool (D) Cotton

12. Wool burns with smell of burning hair -

(A) As it is obtained from hair of sheep and goat

(B) Because it is a natural fibre

(C) Because it is synthetic fibre

(D) None of these

13. Historians believe that cotton clothes were first worn in

(A) India (B) Egypt

(C) China (D) Europe

14. Which of these is not a property of jute?

(A) Biodegradability (B) Durability

(C) Smoothness (D) Strength

15. Silk is a

(A) Man-made fibre

(B) Natural protein fibre

(C) Natural carbohydrate fibre

(D) Both (B) and (C)

16. The fruit of cotton containing fibres and seeds is called as

(A) Fibre (B) Lint

(C) Boll (D) Pod

17. Which of the following fibres is/aer obtained from fleece of certain animals?

(A) Wool and jute (B) Silk and wool

(C) Cotton (D) Wool

18. The fibres which are obtained from plants and animals are called _____ fibres, e.g.,_____ and_____

(A) Natural, cotton, wool

(B) Animal, wool, silk

(C) Artificial, nylon, acrylic

(D) Plant, cotton, flax

19. The process of ginning refers to

(A) Picking of cotton by hands from cotton bolls

(B) Separation of cotton yarn from cotton fabric

(C) Separation of cotton fibres from the seeds

(D) Making yarn from fibres

20. The process of arranging two sets of yarn together to form a fabric is called _(i)_ whereas the process in which a single yarn is used to make a piece of fabric is called _(ii)_ .

Select the correct option for (i) and (ii).

	(i)	**(ii)**
(A)	spinning	knitting
(B)	weaving	spinning
(C)	weaving	knitting
(D)	knitting	weaving

21. Which of the following are not natural fibres?

(A) Wool and silk (B) Nylon and polyester

(C) Cotton and coir (D) Jute and hemp

22. The process of twisting fibres to make yarn is called _L_. This process can be done by using _M_.

Select the correct option for L and M.

	L	**M**
(A)	Spinning	Charkha
(B)	Spinning	Hand spindle
(C)	Ginning	Ginning machine

(D) Both (A) and (B)

23. Which out of the following is a semi-synthetic fibre?

(A) Rayon (B) Nylon

(C) Polyester (D) None of these

24. Coir is obtained from

(A) Bolls of cotton plant

(B) Stalk of coconut plant

(C) Husk of coconut fruit

(D) Stem of jute plant

25. Sericulture is defined as the

(A) Production of jute from jute plants.

(B) Rearing and management of silkworms for the production of silk.

(C) Obtaining synthetic fibres from petroleum.

(D) Rearing of wool producing animals such as sheeps for wool production.

MATCH THE COLUMN TYPE

1.

Column - I (Kind of fibre)	Column - II (Uses)
P. Coir	(i) Winter clothes
Q. Jute	(ii) Strong packing material
R. Wool	(iii) Summer clothes
S. Cotton	(iv) Mattresses

(A) P – (ii), Q – (iii), R – (iv), S – (i)

(B) P – (i), Q – (iv), R – (iii), S – (ii)

(C) P – (iv), Q – (i), R – (ii), S – (iii)

(D) P – (iv), Q – (ii), R – (i), S – (iii)

2.

Column - I	Column - II
P. A plant fibre	(i) Silk
Q. An animal fibre	(ii) Spinning
R. Process of making yarn from fibres	(iii) Retting
S. Process of separating jute fibres from the stems	(iv) Coir

(A) P – (iv), Q – (i), R – (ii), S – (iii)

(B) P – (iv), Q – (i), R – (iii), S – (ii)

(C) P – (i), Q – (iv), R – (ii), S – (iii)

(D) P – (i), Q – (iv), R – (iii), S – (ii)

PARAGRAPH

PARAGRAPH # 1

Silk is produced from cocoons of the silkworm which feeds on mulberry leaves. It secretes an unbroken fibre cocoon around itself. The cocoon is boiled and unwound to form the fibre which is then spun. Silk is the strongest natural fibre. Karnataka is famous for silk in India.

It dries quickly, does not shrink, retains its shape, drapes well, has a natural shine, and can be easily dyed. The silk fibre is made into fabrics such as satin, velvet chiffon, crepe, and brocades.

1. Silk is produced from _____.

(A) Stem of hemp plant

(B) Cocoons of silkworm

(C) Cotton plant

(D) Flax plant

2. Which fabric is not made by silk fibre ?
(A) Satin (B) Crepe
(C) Velvet Chiffon (D) Cotton

3. Which state is famous for silk in India ?
(A) Karnataka (B) Punjab
(C) Rajasthan (D) Haryana

PARAGRAPH # 2

In ancient times, people used big leaves of trees, barks of trees, animal skin etc to cover their body. When man began to settle down in communities, he began to tie together twigs, grass, leaves, animal skin/ fur etc into mats and clothes. They simply draped these fabric around their body because they didn't know stitching.

The material that is used to make the clothes is called fabric.

Later, when needle was invented, people started stitching these fabric into different shapes to suit their body and thus clothes evolved.

1. What people not use to cover their body in ancient time ?
(A) Big leaves of trees (B) Barks of trees
(C) Clothes (D) Animal skin

2. After which invention, stitching began ?
(A) Needle (B) Fur
(C) Grass (D) Iron

3. The material that is used to make the clothes is called_____.
(A) Twigs (B) Animal hair
(C) Fabric (D) None of these

Space for Notes :

EXERCISE – II

VERY SHORT ANSWER TYPE

1. How will you classify fibres on the basis of their origin?
2. What kind of soil and climate is needed for growing cotton plant?
3. What is the difference between rayon and nylon?
4. Why do we all prefer cottons over nylons in summer?
5. Write one example each of plant fibre and animal fibre.
6. From which parts of the plant cotton and jute are obtained?
7. Write the name of one semi synthetic fibre.
8. Among the fabrics, which is a good absorber of water and a bad conductor of heat?
9. Write the name of process in which seeds are removed from cotton.
10. What did primitive people cover themselves with?

SHORT ANSWER TYPE

1. What is the difference between fibre and yarn?
2. Mention five uses of cotton.
3. Explain the process of knitting.
4. Which property of synthetic fibres make them useful?
5. Name three vegetable fibres.

LONG ANSWER TYPE

1. How are fibres classified? Give two examples of each type.
2. Why do different kinds of people wear different kinds of clothes?
3. Describe how you would compare the abilities of different fabrics to absorb water.
4. How is jute fibre obtained from the jute plant?
5. Describe spinning and weaving.

TRUE / FALSE TYPE

1. Knitting is a method of converting yarn to fabric.
2. Flax fibre is obtained from the seed of the flax plant.
3. Jute fibre is very smooth and is obtained from the fruits of jute plant.
4. Man-made fibres are nylon, polyester and acrylic.
5. During spinning , yarns from a mass of cotton wool are drawn out and twisted to form fabric.

FILL IN THE BLANKS

1. _____ fibres are obtained from either plants or animals.
2. The process of removing _____ from cotton fibres is called ginning.
3. In India, jute is mainly grown in _____ and _____ Assam.
4. _____ is obtained from the fleece of animals such as sheep, goat, camel, etc.
5. Hemp is obtained from the _____ of the hemp plant.

Answer Key

EXERCISE–I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	A	C	D	A	D	C	C	C	C	A	A	A	C	B
16	17	18	19	20	21	22	23	24	25					
C	D	A	C	C	B	D	A	C	B					

MATCH THE COLUMN

1. D 2. A

PARAGRAPH # 1

1. B 2. D 3. A

PARAGRAPH # 2

1. C 2. A 3. B

EXERCISE – II

TRUE/FALSE FALSE

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

FILL IN THE BLANKS

1. Natural 2. seeds 3. West Bengal, Bihar 4. Wool
5. stem

SELF PROGRESS ASSESSMENT FRAMEWORK

(CHAPTER : FIBRE TO FABRIC)

CONTENT	STATUS	DATE OF COMPLETION	SELF SIGNATURE
Theory			
In-Text Examples			
Solved Examples			
Exercise I			
Exercise II			
Short Note-1			
Revision - 1			
Revision - 2			
Revision - 3			
Remark			

NOTES :

1. In the status, put "completed" only when you have thoroughly worked through this particular section.
2. Always remember to put down the date of completion correctly. It will help you in future at the time of revision.

Space for Notes :

SORTING MATERIALS INTO GROUPS

2

Concepts

INTRODUCTION

We use several objects in our day-to-day lives. Pencils, erasers, books, notebooks, etc., are objects that you must be using a lot. All objects are made of substances called materials. It is very important to use the right material for making each object. For example, a chalk made of materials like wood or plastic would be useless because it cannot be used to write on the blackboard. Therefore, it is important for us know the properties of different kinds of materials. Let us start by learning more about objects.

Figure : Different kinds of materials

1. HISTORY OF CLOTHING MATERIAL

(a) Objects Around Us

There is such a vast variety of objects everywhere. We see around us a chair, a bullock cart, a cycle, cooking utensils, books, clothes, toys, water, stones and many other objects. All these objects have different shapes, colours and uses. All objects around us are made of one or more materials. These materials may be glass, metal, plastics, wood, cotton, paper, mud or soil.

(b) Importance of Grouping Things

Virat has a Science test tomorrow. He searched his room for hours but cannot find his Science textbook. This is because his room is in a mess. Clothes, toys, and other objects are scattered all over the place. This situation could have been avoided if the objects had been grouped properly.

"Placing similar things together is called grouping."

Grouping makes it easier for us to find things when we need them. If all textbooks had been kept at the same place it would have been very easy to find the Science textbook. Similarly, it would be easy to find a particular shirt if all clothes are kept together. Also, grouping things would make the room look much better. Have you ever been to a supermarket ? Grouping is done in a supermarket by keeping similar items on the same shelf, which makes it easier for us to find the items we need. If things are not grouped, chances are that you will never find your favourite chocolate in a large supermarket.

2. PROPERTIES OF MATERIALS

Grouping is done based on certain similarities between objects.

The process of grouping things on the basis of some similarities and dissimilarities is called classification.

Various objects around us are made up of different kinds of materials. These materials have different properties. The classification or grouping of things can be done on the basis of similarities and dissimilarities in their properties. Let us first study the properties of various materials.

2.1 APPEARANCE

Materials usually look different from each other. Wood looks very different from iron. Iron appears different from copper or aluminium. At the same time, there may be some similarities between iron, copper and aluminium that are not there in wood.

Some materials have lustre. These are usually metals. Iron, copper, aluminium and gold are examples of metals. Some metals often lose their shine and appear dull, because of the action of air and moisture on them.

Figure : Gold

Figure : Copper

LAB TIME
Let's Do & Learn

- **Objective : To show that certain materials have lustre**
- **Material required :** Small pieces of (i) paper (ii) cardboard, a thin piece of wood, a small strip of plastic, thin wires of copper, aluminium and iron, heavy scissors or a metal cutter, sand paper.
- **Procedure :**

(a) Cut each of the materials with heavy scissors or metal cutter. Carefully observe the cut surface of each material.

- **Conclusion :**

(a) We will notice that in case of paper, cardboard, wood, plastic, etc., the cut surface is not shining. However, in case of thin wires of copper, aluminium and iron, the cut surface is shining.

(b) Rub each of the material with sand paper. Carefully observe the sand papered surface of the material.

(c) We will notice that in case of paper, cardboard, plastic and wool, the sand papered surface is not shining.

However, in case of thin wires of copper, aluminium and iron, the sand papered surface is shining.

2.2 HARDNESS

When we press different materials with our hands, some of them may be hard to compress while others can be easily compressed.

We can easily scratch some materials, while some cannot be scratched so easily. Materials which can be compressed or scratched easily are called soft while some other materials which are difficult to compress are called hard. For example, cotton or sponge is soft while iron is hard.

2.3 SOLUBILITY

Some substances like sugar, salt etc. completely disappear or dissolve in water. These substances are soluble in water. Other substances like sand, chalk powder etc. do not mix with water and do not disappear even after we stir for long time. These substances are insoluble in water. Water plays an important role in the functioning of our body because it can dissolve a large number of substances.

When two liquids dissolve in one another such as water and milk, they are known as miscible liquids. Liquids such as mustard oil and kerosene do not dissolve in water but form separate layers. Such liquids are known as immiscible liquids.

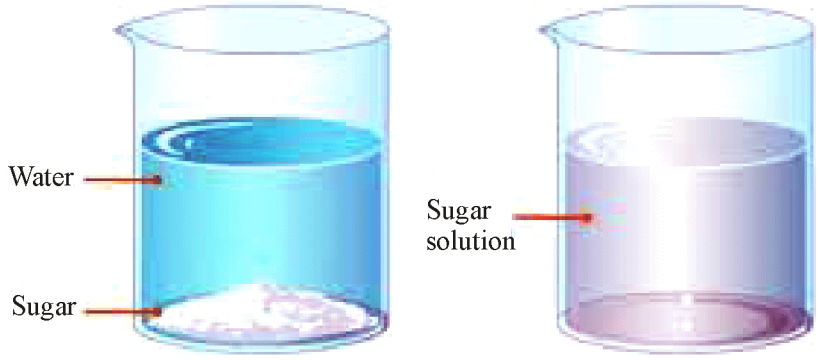
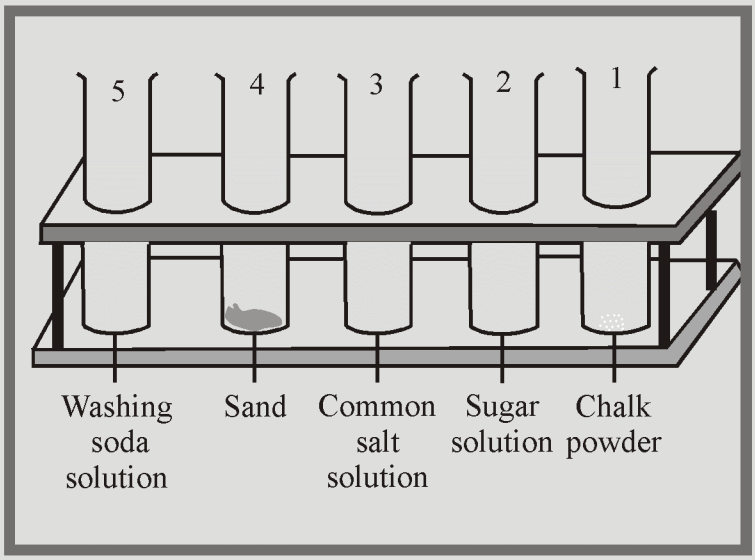


Figure : Dissolving sugar in water

LAB TIME
Let's Do & Learn

- **Objective : To prove that some solids are soluble in water.**
- **Material required :** (i) A rack of test tubes, (ii) water, (iii) common salt, (iv) washing soda, (v) chalk powder and sand.

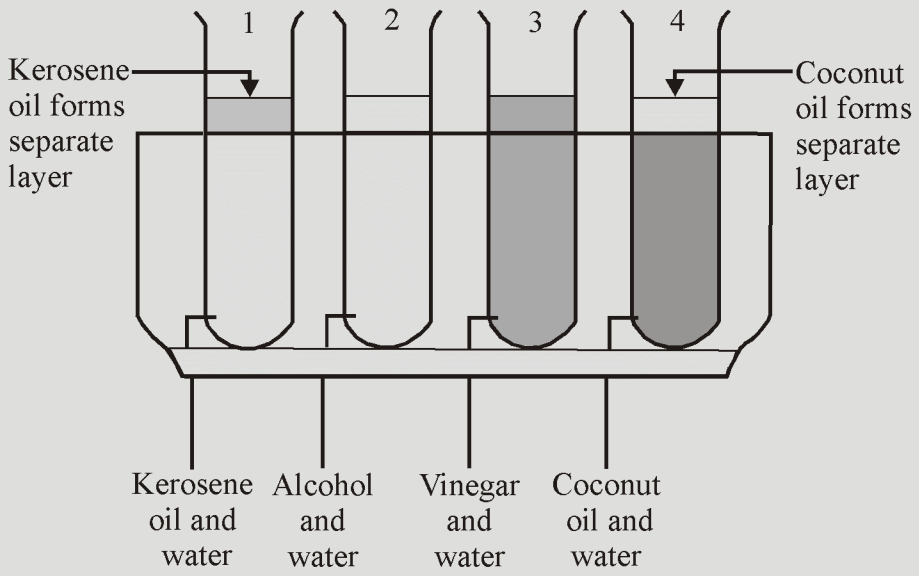


- **Procedure :** Add a pinch of chalk powder in the first test tube, add a pinch of sugar in second test tube, a pinch of common salt in the third test tube, a pinch of sand in the fourth test tube and a pinch of washing soda in the fifth test tube. Pour water into each test tube such that half of each test tube is filled with water. Shake each test tube vigorously and replace in the rack.
- **Conclusion :** We will notice that sugar, common salt and washing soda disappear in water, and hence are soluble substances. Sand and chalk powder do not dissolve in water, and hence are insoluble substances.

LAB TIME
Let's Do & Learn

• **Objective : To prove that some liquids are miscible in water.**

• **Material required :** (i) A rack of test tubes, (ii) water, (iii) alcohol, (iv) kerosene oil, (v) vinegar and coconut oil.



• **Procedure :** Fill each of the test tubes half with water and place them in the test tube rack. Add a few drops of kerosene oil in the first test tube, a few drops of alcohol in the second test tube, a few drops of vinegar in the third test tube and few drops of coconut oil in the fourth test tube. Shake each test tube vigorously and replace it in the test tube rack. Wait for 10 minutes and you will notice that kerosene oil and coconut oil float upon the surface of water and form separate layers.

No separate layer is formed in case of vinegar and alcohol.

• **Conclusion :** The activity proves that vinegar and alcohol are soluble in water, and hence are miscible liquids, but kerosene oil and coconut oil are insoluble in water and hence are immiscible liquids.

2.4 TEXTURE

The feel of any material is known as its texture. All materials do not feel the same when they are touched. They have different textures. They may be rough or smooth. The surface of paper or a glass tumbler feel smooth since there are no uneven surfaces. The bark of a tree, an unfinished wall, or sand paper are rough to touch since their surfaces are uneven and bumpy.

Figure : Rough substance

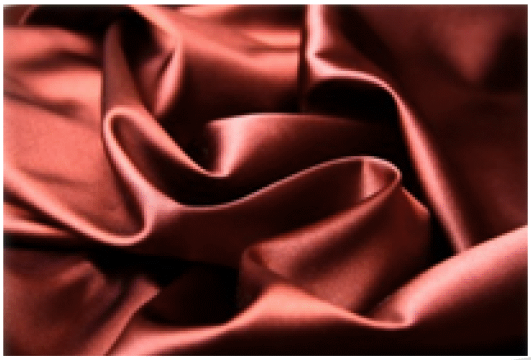


Figure : Smooth substance

2.5 FLOATATION

Substance that are less dense than water or are lighter than water will float in water. For example, paper boats, feather, and wooden cork float in water. Substances heavier than water such as iron nail or metal coins, however, sink in water.

Figure : Sinking and Floating substances

2.6 TRANSPARENCY

Material can be classified into three groups depending on the amount of light that can pass through them- transparent, opaque, and translucent.

Material such as air, water and clear glass are called transparent. They allow light to pass through and as a result, you can see clearly through them. The property of a material through which one can see clearly is called transparency.

Materials that do not allow light to pass through them and block the light are called opaque. Wood, stone and metal are some examples of opaque materials. When light is blocked by an object, a shadow is formed. The shadow appears on the side of the object that is away from the light source.

Translucent materials allow only some part of light to pass through. We can see through these materials but not clearly. Eg. oiled paper, ground glass, etc.

Transparent **Opaque** **Translucent**

Figure : Transparency

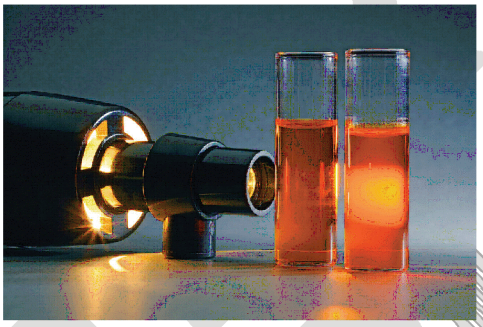


Figure : Light can passs through transparent material

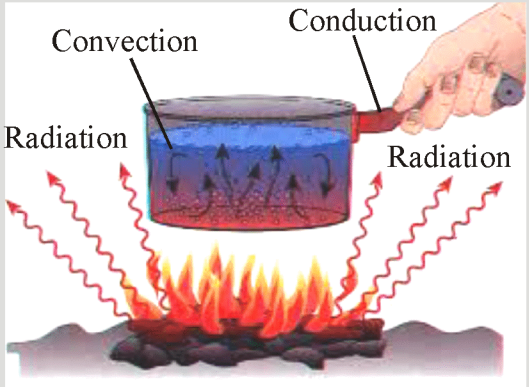
LAB TIME
Let's Do & Learn

• **Attraction towards a magnet :** Materials that are attracted to a magnet are called magnetic materials. This property is called magnetism. Objects made of iron are attracted to a magnet. In addition to iron, nickel and cobalt are also attracted to a magnet.

• **Conduction of heat :** If you observe the utensils kept in your kitchen, you will notice that though most of them are made of metals, their handles are made of plastic or wood. Why are not the handles made of metal as well ? This is because metals get heated whereas materials such as plastic and wood do not. It would be difficult to handle metal utensil after cooking if the handles were made of metal.

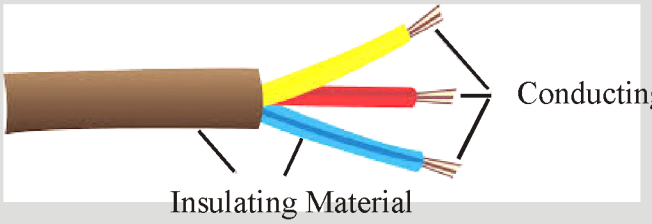
Materials that allow heat to flow through them are called good conductors of heat whereas those that do not allow heat to flow through them are called bad conductors of heat.

Generally, metals are good conductors of heat whereas non-metals such as wood, plastic, glass, bamboo, air and paper are bad conductors of heat.

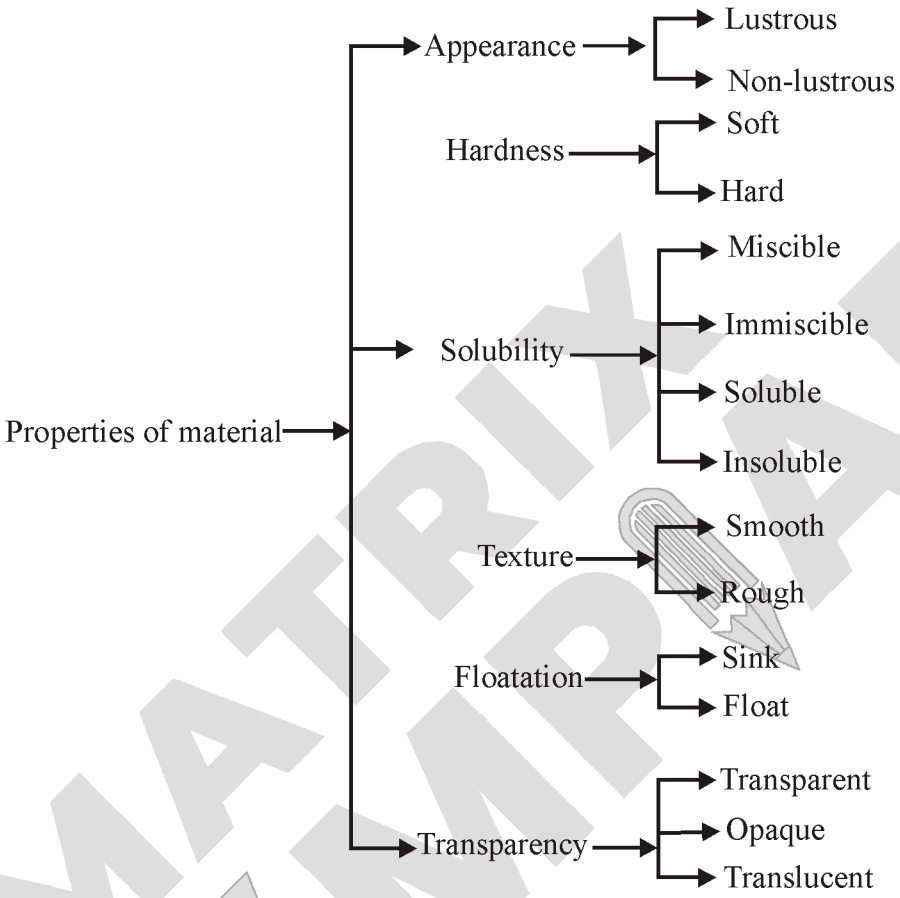


• **Conduction of electricity :** We get electricity in our homes through cables and wires. An electric cable consist of a number of metal with or without a plastic covering as shown in Fig. The substances that conduct electricity are called good conductors of electricity or conductors whereas substances that do not conduct electricity are called bad conductors of electricity or insulators.

For example, metals are good conductors of electricity. Wood, air, and plastic are insulators.



• **Concept Map :**



SOLVED EXAMPLES

SE. 1

Write any four properties of materials.

Ans. (a) Appearance

(b) Hardness

(c) Solubility

(d) Float or sink in water

(e) Transparency

SE. 2

Why is a tumbler not made with a piece of cloth?

Ans. We use tumblers made of glass, plastic and metal to keep a liquid. These substances can hold a liquid. A tumbler made of cloth cannot hold a liquid because:

(i) Cloth piece is not hard enough to hold liquids and

(ii) Cloth piece has very minute pores through which the liquid comes out.

SE. 3

What are the similarities between iron, copper and aluminium?

Ans. (a) They all have lustre

(b) They are all metals

(c) They are hard

SE. 4

Mention some materials which are made up of paper.

Ans. Books, notebooks, newspapers, toys, calendars, etc.

SE. 5

Why is water important for our body?

Ans. Water can dissolve a large number of substances, so it is needed by the body. It is also major part of our body cells.

SE. 6

What is the basis for sorting materials?

Ans. Materials are grouped on the basis of similarities or dissimilarities in their properties.

SE. 7

What is the reason for grouping materials?

Ans. Materials are grouped for our convenience to study their properties and also observe any patterns in these properties.

SE. 8

Make a table of different types of objects that are made from the same material.

S.No.	Material	Objects made of these materials
1.	Wood	Chair, table, plough, bullock cart and its wheels
2.	Paper	Books, notebooks, newspaper, toys, calendars
3.	Leather	Shoes, belts, purses, jackets, suitcase, bags
4.	Plastics	Buckets, chairs, tables, bags, briefcase, lunch box
5.	Cotton	Clothes, bandage, bed sheets, cushions, bags
6.	Iron	Chairs, tables, doors, bathroom fittings, mesh, wheels and other railway goods.

SE. 9

Make a table and find out whether the following materials mix with water: Vinegar, Lemon juice, Mustard oil, Coconut oil, Kerosene.

S.No.	Liquid	Mixes well/ Does not mix
1.	Vinegar	Mixes well
2.	Lemon juice	Mixes well
3.	Mustard oil	Does not mix
4.	Coconut oil	Does not mix
5.	Kerosene	Does not mix

SE. 10

Metals have lustre (shine). Give reason why some metal articles become dull and loose their shine.

Ans. Metals when exposed to air react with moisture and gases present in it, thereby forming a dull layer of some other compound on it.

SE. 11

Kerosene, coconut oil, mustard oil do not dissolve in water, even on shaking. They separate after sometime forming two different layer. Explain why.

Ans. The molecules of water do not intermingle (mix) with the molecules of oil. The space between the molecules of water is not taken by oil, so they are immiscible in water.

SE. 12

Metals generally occur in solid state and are hard. Name a metal that exists in liquid state and a metal that is soft and can be cut with knife.

Ans. Mercury is a metal that exists in liquid state. Sodium and Potassium are soft metals and can be cut with knife.

SE. 13

'Grouping of objects helps the shopkeeper.' Justify the statement.

Ans. Proper grouping of objects helps shopkeeper in the following ways:

(i) He can locate the required object easily and quickly.

(ii) He can easily come to know what stocks are going to finish and he should purchase them for his customers.

EXERCISE – I

ONLY ONE CORRECT TYPE

1. Sorting of materials is useful as -
(A) It makes their study convenient
(B) Any pattern in their properties can be observed
(C) Properties of a substance can be predicted
(D) All of these

2. The property that we use for classifying things depends on the _____ of the classification
(A) Grouping (B) Purpose
(C) Information (D) System

3. Which of the following is lustrous?
(A) Iron (B) Paper
(C) Wood (D) Glass

4. Metals can be identified as :
(A) Hard (B) Lustrous
(C) Sonorous (D) All of above

5. A substance is called hard when -
(A) It is easy to scratch and compress
(B) It is difficult to scratch and compress
(C) It is shiny and opaque
(D) It is insoluble in water

6. One of the following liquids is immiscible with water. This one is
(A) Kerosene (B) Vinegar
(C) Glycerine (D) Lemon juice

7. Which of the following is insoluble in water?
(A) Sugar (B) Salt
(C) Kerosene (D) Oxygen

8. Objects which sink in water are :
(A) Insoluble and heavier than water
(B) Insoluble and lighter than water
(C) Soluble and lighter than water
(D) Soluble and heavier than water

9. ____ sinks in the water, while _____ floats on the water.
(A) Oil, mercury
(B) Oil, petroleum
(C) Mercury, oil
(D) Mercury, alcohol

10. When petroleum is mixed with water, it will -
(A) Float (B) Sink
(C) Explode (D) Dissolve

11. Which of the following allow/s light to pass through it ?
(A) Transparent (B) Translucent
(C) A & B both (D) Opaque

12. One of the following object is not opaque. This one is
(A) Ground glass (B) Brick
(C) Book (D) Wood

13. Milk and water dissolve in each other. They are -
(A) Immiscible liquids
(B) Solvent and solution
(C) Solute and solution
(D) Miscible liquids

14. Clay is used for making pots and bricks because it is :
(A) Opaque
(B) Non-magnetic
(C) Easily moulded into different shapes
(D) Good conductor of heat

15. What are the characteristic of metals ?

(A) Good conductors of electricity and heat ; solid at room temperature ; transparent, shine brightly when polished

(B) Good conductors of electricity and heat ; solid at room temperature ; opaque, except in extremely thin films ; do not shine at all when polished

(C) Bad conductors of electricity and heat ; solid at room temperature ; opaque, except in extremely thin films

(D) Good conductors of electricity and heat ; solid at room temperature; opaque, except in extremely thin films ; shine brightly when polished

16. Metals lose their shine due to action of :

(A) Other metal (B) Water

(C) Air (D) Both (B) and (C)

17. Wood is different from iron in :

(A) Transparency & lustre

(B) Hardness & solubility

(C) Smoothness & solubility

(D) Hardness and lustre

18. We can see objects through transparent substances because -

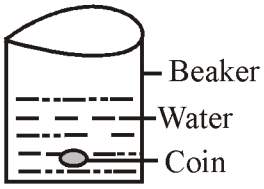
(A) Transparent substances are hollow

(B) Transparent substances are lustrous

(C) Transparent substances allow light to pass

(D) Transparent substances are colorless

19. Sonal took a glass beaker and filled it with clean water. She put a silver coin in it and looked the coin from the top of the beaker. What would be her observation ?



(A) She could not see the coin properly because water is translucent

(B) She could see the coin clearly because water is opaque

(C) She could see the coin clearly because water is transparent

(D) She could not see the coin clearly because the coin is transparent

20. We should choose a material to make an object depending on its properties and the purpose for which object is to be used. Based on this knowledge, Ankita made a few choices. Select the incorrect choice made by her.

(A) A windowpane made up of glass to look through

(B) A pan made up of steel to cook food

(C) A bucket made up of plastic to fill water

(D) A tumbler made up of cotton cloth to drink water

21. Pick one material from the following which is completely soluble in water.

(A) Chalk powder (B) Tea leaves

(C) Glucose (D) Saw dust

22. Boojho found a bag containing the following materials

(i) Mirror (ii) Paper stained with oil

(iii) Magnet (iv) Glass spectacles

Help Boojho in finding out the material(s) which is/ are opaque.

(A) (i) only (B) (iv) only

(C) (i) and (iii) (D) (ii) and (iv)

23. Which pair of substances among the following would float in a tumbler half filled with water?

(A) Iron ball, thermocol

(B) Feather, plastic ball

(C) Pin, oil drops

(D) Rubber band, coin

24. Which of the following materials is not lustrous?

(A) Gold (B) Silver

(C) Wood (d) Diamond

25. Which type of the following materials is used for making the front glass (wind screen) of a car?

(A) Transparent (B) Translucent

(C) Opaque (D) All the above

PARAGRAPH TYPE QUESTION

PARAGRAPH # 1

If you observe the utensils kept in your kitchen, you will notice that though most of them are made of metals, their handles are made of plastic or wood. It would be difficult to handle metal utensil after cooking if the handles were made of metal. Materials that allow heat to flow through them are called good conductors of heat whereas those that do not allow heat to flow through them are called bad conductors of heat. Generally, metals are good conductors of heat whereas non-metals such as wood, plastic, glass, bamboo, air and paper are bad conductors of heat.

1. Materials that allow heat to flow through them are_____ conductors of heat.

(A) Good (B) Bad

(C) Stable (D) Weak

2. Which of the following is not a non metal ?

(A) Wood (B) Plastic

(C) Glass (D) Gold

3. Handles of utensils are made up of-

(A) Non metal (B) Metal

(C) Wires (D) Silver

PARAGRAPH # 2

Material such as air, water and clear glass are called transparent. They allow light to pass through and as a result, you can see clearly through them. The property of a material through which one can see clearly is called transparency.

Materials that do not allow light to pass through them and block the light are called opaque.

Translucent materials allow only some part of light to pass through. We can see through these materials but not clearly.

1. Materials that do not allow light to pass through them are called____.

(A) Transparent (B) Translucent

(C) Opaque (D) Rough

2. Which of following is a translucent material ?

(A) Oiled paper (B) Glass

(C) Wood (D) Stone

3. Which property of a material through which one can see clearly ?

(A) Transparency (B) Occupancy

(C) Transpiration (D) Condensation

MATCH THE COLUMN TYPE

1. Match the objects given Column I with the given in Column II.

Column I	Column II
(P) Surgical instruments	(i) Plastic
(Q) Newspaper	(ii) Animal product
(R) Electrical switches	(iii) Steel
(S) Wool	(iv) Plant product

(A) P-iii, Q-iv, R-i, S-ii
(B) P-i, Q-ii, R-iii, S-iv
(C) P-iv, Q-iii, R-ii, S-i
(D) P-iv, Q-iii, R-i, S-ii

2.

Column A	Column B
(P) Soluble in water	(i) Silver
(Q) Lustrous substance	(ii) Brick
(R) Translucent material	(iii) Common salt
(S) Float in water	(iv) Ice cubes

(A) P-iii, Q-iv, R-i, S-ii
(B) P-iii, Q-i, R-ii, S-iv
(C) P-i, Q-iii, R-ii, S-iv
(D) P-iv, Q-iii, R-i, S-ii

Space for Notes :

EXERCISE – II

VERY SHORT ANSWER TYPE

1. Why do we need to group materials ?
2. Group these materials as eatables and non eatables-water, apple, wood, sugar, balls, pen.
3. Why is gold used in making ornaments ?
4. If a material 'A' scratches material 'B', which is more hard ?
5. Mention any two materials that are soft.
6. Name any two liquids that are miscible with each other.
7. Why does oil float on water ?
8. Give an example each of an opaque and a transparent material ?
9. What is sorting material into group ?
10. What is common between salt and sand ?

SHORT ANSWER TYPE

1. What do you mean by classification ? Give three examples from everyday life.
2. When do we say that two liquids are immiscible ? Explain taking a suitable example.
3. Differentiate between :
   a. Miscible and immiscible substances
   b. Transparent and translucent substances.
   c. Hard and soft materials.
4. Explain the types of materials on the basis of hardness.
5. A piece of wood float on surface of water. why ?

LONG ANSWER TYPE

1. Why is sponge labelled as a soft material ?
2. List five examples of object that float on water.
3. Mention three properties of the following substances : honey, ice and iron nail.
4. Explain the types of substances on the basis of transparency with example.
5. Write the different benefits of classification ?

TRUE / FALSE TYPE

1. Substances that can be dissolved in a liquid are called soluble substance.
2. Liquids that dissolve in one another are called immiscible liquids.
3. Substance that are less dense than water or are lighter than water will float on water.
4. Materials that do not allow light to pass through them are called transparent material.
5. Materials that allow only some part of light to pass through them are called translucent material.

FILL IN THE BLANKS

1. The object must be _____or _____ to make a shadow.
2. Materials can be classified as _____ and _____ on the basis of their texture.
3. Liquids which are soluble in one another are called _____ liquids.
4. Substances which are less _____ than water can float on water.
5. _____ have no definite shape or volume.

Answer Key

EXERCISE I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	A	A	D	B	A	C	A	C	A	C	A	D	C	D
16	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**					
D	D	C	C	D	C	C	B	C	A					

PARAGRAPH # 1

1. A 2. D 3. A

PARAGRAPH # 2

1. C 2. A 3. A

MATCH THE COLUMN

1. A 2. B

EXERCISE – II

TRUE/FALSE FALSE

1. True 2.False 3.True 4. False 5. True

FILL IN THE BLANKS

1. opaque, translucent 2. rough, smooth 3. Miscible 4. dense 5. gases

SELF PROGRESS ASSESSMENT FRAMEWORK

(CHAPTER : SORTING MATERIALS INTO GROUPS)

CONTENT	STATUS	DATE OF COMPLETION	SELF SIGNATURE
Theory			
In-Text Examples			
Solved Examples			
Exercise I			
Exercise II			
Short Note-1			
Revision - 1			
Revision - 2			
Revision - 3			
Remark			

NOTES :

1. In the status, put "completed" only when you have thoroughly worked through this particular section.
2. Always remember to put down the date of completion correctly. It will help you in future at the time of revision.

Space for Notes :

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