

Chapter 6: Substances in Daily Use

EXERCISE [PAGE 49]

Exercise | Q 1.1 | Page 49

Fill in the blank using the proper word.

Rubber made by vulcanization is a _____ material.

SOLUTION

Rubber made by vulcanization is a man-made material.

Exercise | Q 1.2 | Page 49

Fill in the blank using the proper word.

Man-made materials are made by _____ natural materials.

SOLUTION

Man-made materials are made by processing natural materials.

Exercise | Q 1.3 | Page 49

Fill in the blank using the proper word.

_____ the thread was developed simultaneously in New York and London.

SOLUTION

Nylon thread was developed simultaneously in New York and London.

Exercise | Q 1.4 | Page 49

Fill in the blank using the proper word.

Rayon is also known as _____.

SOLUTION

Rayon is also known as synthetic silk.

Exercise | Q 2.1 | Page 49

Answer the following question.

Why did the need for man-made materials arise?

SOLUTION

For several years, humans have been dependent on natural materials to meet their demands. However, there has been a shift towards the use of man-made materials as well. Increasing population, deforestation, and limited natural resources are some of the reasons due to which they need for man-made materials arose. Another reason which led to an increase in the use of man-made material was to get a comfortable lifestyle.



Exercise | Q 2.2 | Page 49

Answer the following question.

Which are the natural materials obtained from plants and animals?

SOLUTION

Sources	Natural material	Objects
Plants	Wood	Furniture
	Rubber	Ballon, tyres, etc.
	Cotton	Clothes
Animals	Fur	Hats, Sweaters
	Leather	Handbags, shoes
	Silk	Sarees

Exercise | Q 2.3 | Page 49

Answer the following question.

What is vulcanization?

SOLUTION

Vulcanization is the process carried out for the production of rubber. In this process, raw rubber is heated with a mixture of sulphur and an appropriate additive, at a temperature range of 61.85°C to 141.85°C for three to four hours. Sulphur is added to give toughness to rubber.

Exercise | Q 2.4 | Page 49

Answer the following question.

Which natural materials are used to obtain fibres?

SOLUTION

Natural materials obtained from plants and animals are used to obtain fibers. For example, wool and silk are natural materials of animal origin that are used for obtaining fibers. Wool is obtained from the fleece (hair) of sheep or yak and silk is obtained from the cocoons of a silk moth. Cotton and jute are examples of natural materials of plant origin which are used for obtaining fibers.

Exercise | Q 3.1 | Page 49

What are we used for?

Soil

SOLUTION

Soil - It is used in construction, pottery, medicine, and cosmetics.



Exercise | Q 3.2 | Page 49

What are we used for?

Wood

SOLUTION

Wood- It is used in making furniture, as a source of fuel, utensils, hand tools, musical instruments, wooden toys, etc.

Exercise | Q 3.3 | Page 49

What are we used for?

Nylon

SOLUTION

Nylon - It is used in making canopies of parachutes, tents, sleeping bags, sails, rope, tennis strings, fishing poles and linens, cookware, etc.

Exercise | Q 3.4 | Page 49

What are we used for?

Paper

SOLUTION

Paper - It is used in making bags, envelopes, notebooks, packaging purposes, etc.

Exercise | Q 3.5 | Page 49

What are we used for?

Rubber

SOLUTION

Rubber- Balloons, erasers, rubber toys, rubber balls, etc.

Exercise | Q 4 | Page 49

How is paper manufactured? Write in your own words.

SOLUTION

Paper is manufactured by the following process:

- Logs of wood are made to pass through a debarker, where the barks of the tree are separated.
- Then the wood is chopped into small pieces and is mixed with some chemicals and water in the digester for the formation of the pulp.
- The obtained pulp is washed refined and sometimes even bleached.
- The pulp is made to travel down the screen to remove the excess of water and then to the rollers where it is being dried and squeezed between large rollers to form rolls of paper.

Exercise | Q 5.1 | Page 49

Give scientific reasons.

We must use cotton clothes in summer.

SOLUTION

We must use cotton clothes in summers because they protect us from the heat of the sun. They absorb sweat and help keep our bodies cool. The pores in cotton clothes allow the free movement of air, which helps cool our bodies.

Exercise | Q 5.2 | Page 49

Give scientific reasons.

We must observe the economy in the use of materials.

SOLUTION

We must observe the economy in the use of materials because they directly or indirectly affect our environment. Most of the natural materials which we obtain from our environment are exhaustible/non-renewable resources i.e. once these resources are finished they cannot be renewed again or even if they can, it would take several years to do so. For example, our forests from where we obtain wood are precious resources because once a forest is destroyed, it would take several years to renew that forest. Also, destroying the forests for our needs affects the habitat of several other species of organisms and plants. The man-made materials which we use are largely non-biodegradable for example plastic etc. Increased use of man-made materials poses a threat to the environment because their disposal is not easy and leads to environmental pollution. These examples state the importance of judicious use of both natural and man-made materials.

Exercise | Q 5.3 | Page 49

Give scientific reasons.

Saving paper is the need of the hour.

SOLUTION

We very well know that paper is obtained from trees. Trees are important resources because they not only provide us with wood or paper but are also a habitat for various organisms. They are important in maintaining the climate as well. The more paper we use or waste, the more no. of trees will have to be cut down for this purpose, thus leading to various kinds of harmful effects on our environment. We should make a genuine effort in saving paper by adopting small steps that can make a huge difference.

Exercise | Q 5.4 | Page 49

Give scientific reasons.

Man-made materials have more demand.

SOLUTION

Man-made materials have more demand because of their characteristics like easy to use, low cost of production, cheaper products, and variety of things which can be made from them.

Exercise | Q 5.5 | Page 49

Give scientific reasons.

Humus is a natural material.

SOLUTION

Humus is a natural material because its formation is a natural process. It is the dark-coloured layer of topsoil that is rich in nutrients. The decomposers convert the dead plants and animals into humus that is utilised by the plants. It increases the fertility of the soil.

Exercise | Q 6.1 | Page 49

Find out.

How is lac obtained from nature?

SOLUTION

Lac is a natural resin and is a product of animal origin. It is secreted by an insect, known as lac-insect. In order to obtain lac, these insects are cultured and the technique is called lac-culture. Lac culture requires proper care of host plants, regular pruning of host plants, propagation, collection, and processing of lac. The lac insect lives as a parasite, feeding on the sap of certain trees and shrubs. Lac secretion begins as soon as the larva of the insect settles on the plant. Initially, lac has a shining appearance but later on, it turns harder on coming in contact with air. This lac is then collected and used for making jewellery etc.

Exercise | Q 6.2 | Page 49

Find out.

How are pearls obtained?

SOLUTION

Pearls are precious jewels and the only gems created by a living animal. They are formed when a microscopic foreign object finds its way inside a mussel or oyster. The animal coats the object with a substance called nacre. With time, several layers of nacre build up over the foreign material thus leading to the formation of a pearl. These oysters/mussels are collected from the sea and opened to collect these pearls.