



## Exercise Questions

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1. Explain why some fibres are called synthetic.

**Soln:**

Some fibres are called synthetic fibres because they are man-made fibres prepared using chemicals. These are made of small units that join together to form long chains. Some examples of synthetic fibres are nylon, rayon, acrylic, polyester etc.

2. Mark the correct answer.

Rayon is different from synthetic fibres because (a)

it has a silk-like appearance.

(b) it is obtained from wood pulp.

(c) its fibres can also be woven like those of natural fibres.

**Soln:**

The answer is (b) it is obtained from wood pulp.

3. Fill in the blanks with appropriate words.

(a) Synthetic fibres are also called \_\_\_\_\_ or \_\_\_\_\_ fibres.

(b) Synthetic fibres are synthesised from the raw material called \_\_\_\_\_. (c) Like synthetic fibres, plastic is also a \_\_\_\_\_ **Soln:**

(a) Synthetic fibres are also called **artificial** or **man-made** fibres.

(b) Synthetic fibres are synthesised from a raw material called **petrochemicals**.

(c) Like synthetic fibres, plastic is also a **polymer**.

4. Give examples which indicate that nylon fibres are very strong.

**Soln:**

Following are the examples that indicate nylon fibres are very strong:

- Parachutes and ropes of rock climbing are made of nylon
- Nylon is used in making seat belts, fishing nets and tyre cords.
- Nylon is used in making sports accessories like rackets.

5. Explain why plastic containers are favoured for storing food.



**Soln:**

Plastic containers are favoured for storing food because plastic is non-reactive and will not react with the ingredients of the food items.

**6. Explain the difference between thermoplastic and thermosetting plastics.**

**Soln:**

The difference between thermosetting plastics and thermoplastics are as follows:

Thermosetting plastics	Thermoplastics
It cannot be bent; it will break if we attempt to bend thermosetting plastics	Thermoplastic can be bent easily
On heating thermosetting plastics, they cannot be softened. This is the reason it cannot be reshaped once it is moulded.	On heating the thermoplastics, it becomes softened and can be moulded and reshaped easily.

**7. Explain why the following are made of thermosetting plastics.**

**(a) Saucepan handles**

**(b) Electric plugs/switches/plug boards Soln:**

**a)** Thermosetting plastics are used to make saucepan handles because they are bad conductors of heat, and also, on heating, these plastics do not get softened.

**b)** Bakelite is a kind of thermosetting plastic which is a bad conductor of heat and electricity. Because of this property, it is used for making electric plugs, switches, plug boards, etc.

**8. Categorise the materials of the following products into 'can be recycled' and 'cannot be recycled'.**

Telephone instruments, plastic toys, cooker handles, carry bags, ballpoint pens, plastic bowls, plastic covering on electrical wires, plastic chairs, electrical switches.

**Soln:**



### Can be Recycled

Plastic chairs

Plastic bowls

Plastic toys

The plastic covering on electrical wires

Carry bags

Ballpoint pens

### Cannot be recycled

Cooker handles

Electrical switches

Telephone instruments

9. Rana wants to buy shirts for summer. Should he buy cotton shirts or shirts made from synthetic material? Advise Rana, giving your reason.

**Soln:**

Rana should buy a cotton shirt for the summer and not a synthetic shirt. Cotton is a good absorber of water. So it can soak the sweat coming out of the body and expose it to the environment. Thus, it helps in evaporating sweat and helps in cooling the body.

10. Give examples to show that plastics are non-corrosive in nature.

**Soln:**



Plastics are non-corrosive in nature; they do not react even if they come in contact with strong chemicals. For example, the cleaning chemicals that we use at home are stored in plastic bottles instead of metal containers.

**11. Should the handle and bristles of a toothbrush be made of the same material? Explain your answer Soln:**

The handle and bristle of a toothbrush should not be made of the same material, as the handle of the toothbrush should be hard and strong while the bristle should be soft and flexible.

**12. 'Avoid plastics as far as possible'. Comment on this advice.**

**Soln:**

We should avoid plastics as far as possible because plastics are non-biodegradable in nature. Once introduced into the environment, they cause pollution. If burnt, they release poisonous gases, and the plastic bags thrown in the garbage dump are swallowed by animals, choking their respiratory system and causing fatalities in them.

**13. Match the terms of column A correctly with the phrases given in column B**

A	B
(i) Polyester	(a) Prepared by using wood pulp
(ii) Teflon	(b) Used for making parachutes and stockings
(iii) Rayon	(c) Used to make non-stick cookware
(iv) Nylon	(d) Fabrics do not wrinkle easily

**Soln:**

A	B
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|---------------|--|
| (i) Polyester | (d) Fabrics do not wrinkle easily            |
| (ii) Teflon   | (c) Used to make non-stick cookware          |
| (iii) Rayon   | (a) Prepared by using wood pulp              |
| (iv) Nylon    | (b) Used for making parachutes and stockings |

**14. 'Manufacturing of synthetic fibres is actually helping conservation of forests'. Comment.**

**Soln:**

The manufacturing of synthetic fibres is helpful in the conservation of forests because if we use natural fibres, the raw materials for them have to be derived from plants, which requires cutting off lots of trees. This proves to be helpful in the conservation of forests.

**15. Describe an activity to show that thermoplastic is a poor conductor of electricity Soln:**

In order to show that thermoplastic is a poor conductor of electricity, we will design a circuit. For that, we need a bulb, some wires, a battery, a piece of metal and a plastic pipe (as shown in the figure below). After setting the experiment, switch on the current, and you will observe that the bulb glows in the former case. In the latter case, the bulb does not glow. Hence, a plastic pipe (which is a thermoplastic) is shown to be a poor conductor of electricity.

