

1. Explain why some fibres are called synthetic?

Ans. Some fibres are called synthetic because they are made by human beings.

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.

Ans. (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 raw material called

(c) Like synthetic fibres, plastic is also a

Ans. (a) artificial , man-made.

(b) petrochemicals. (c) polymer.

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

Ans. Parachutes and ropes for rock climbing are made of nylon fibres.

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

Ans. Plastic containers are good for storing food because :

- (i) They do not react with food items.
- (ii) They do not get rusted.
- (iii) They are light, strong and durable.

6. Explain the difference between thermoplastic and thermosetting plastics.

Ans. Thermoplastics can be softened on heating and can be bent easily. Thermosetting plastics cannot be softened on heating and it breaks when forced to.

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

- (a) Saucepan handles
- (b) Electric plugs/switches/plug boards.

Ans. The articles given in questions are made up of bakelite which is a thermosetting plastic, because it is—

- (i) poor conductor of electricity,
- (ii) heat resistant.

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

Telephone instruments, plastic toys, cooker handles, carry bags, ball point pens, plastic bowls, plastic covering on electrical wire, plastic chairs, electrical switches.

Ans.

Can be recycled	Can not be recycled
Toys, carry bags, plastic bowls, electric wire covering, plastic chairs.	Telephone instruments, cooker handles, ball point pens, electrical switches.

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

Ans. Cotton fibres easily absorb the water but the absorbing capacity of synthetic fibres is less than cotton fibres. In summers we have extensive sweating which must be soaked up by cotton clothes easily. So Rana should buy cotton shirts.

10. Give example to show that plastics are noncorrosive in nature.

Ans. Plastic is non-corrosive in nature because.

1. It does not react with the chemical or other items stored in the containers.
2. It does not get rusted when exposed to moisture and air.
3. It does not decompose when left in open for a long period of time.
4. It does not show any chemical reaction.

11. Should the handle and bristles of a tooth brush be made of the same material? Explain your answer.

Ans. The bristles of the tooth brush are flexible and soft because it works on the teeth and gums. The material of handle is harder to give it a firm grip. So handle and bristles are made of different material.

12. 'Avoid plastic as far as possible'. Comment on this advice.

Ans. Plastic is non-degradable so it takes several years to decompose. It is not environment friendly. It causes environmental pollution. The burning process of the synthetic material is quite slow and it does not get completely burnt easily and releases poisonous gases in the atmosphere which causes air pollution. So to prevent pollution we should avoid plastic as far as possible.

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

Column A		Column B	
1.	Polyester	(a)	Prepared by using wood pulp
2.	Teflon	(b)	Used for making parachutes and stockings
3.	Rayon	(c)	Used to make non-stick cookwares
4.	Nylon	(d)	Fabrics do not wrinkle easily

Answers. 1. (d), 2. (c), 3. (a), 4. (b)

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

Ans. Natural fibres are obtained from plants and animals. In the manufacturing of synthetic fibres we use no material from natural sources thus, in turn we conserve forest which may otherwise have been destroyed. When we use articles made of plastic we also save thousands of trees which otherwise would have been cut if we use articles made of wood or natural fibres. So manufacturing synthetic fibres is actually helping in the conservation of forests.

15. Describe an activity do show that thermoplastic is a poor conductor of electricity.

Ans. Activity : 1. List five items of cooking ware and electric appliances.

2. Observe them carefully.

Observation : You will observe that handles of cooking ware were are made of plastic and you can easily touch them while cooking. And in electric appliances, electrical wire have plastic covering and handles of screw driven are made of plastic.

Inference : It shows that plastic is a poor conductor of electricity.

Activity 3.1

1. Take an iron stand with a clamp.
2. Take a cotton thread of about 60 cm length.
3. Tie it to the clamp so that it hangs freely from it as shown in the figure.
4. At a free end suspend a pan so that weight can be placed in it.
5. Add weight one by one till the thread breaks.
6. Note down the total weight required to break the thread.

7. This weight indicates the strength of the fibre.
8. Repeat the same activity with threads of wool, polyester, silk and nylon.
9. Tabulate the data as shown in the following observation table.
10. Arrange the threads in order of their increasing order.

Observation Table

Type of threads	Total weight required to break the thread
(1) Cotton	200 gms
(2) Wool	300 gms
(3) Silk	350 gms
(4) Nylon	400 gms



Fig. An iron stand with a thread hanging from the clamp

Observation and conclusion : We observe more weight is required to break the nylon thread in comparison to other threads. So nylon is much stronger than other threads.

Activity 3.2

1. Take two cloth pieces of the same size roughly half a meter square each.
2. One of these should be from natural fibre.
3. Soak the pieces in different mugs each containing the same amount of water.
4. Take the pieces out of the container after five minutes and spread them in the sun for a few minutes.
5. Compare the volume of the water remaining in each mug.

Observation and conclusion : Natural fibre more soak amount of water and polyester and synthetic fibre soak less water.

Inter Text Questions (Paheli Boojho)

1. Is nylon fibre really so strong that we can make nylon parachutes and ropes for rock climbing ?

Ans. Nylon fibre is very strong, elastic and light so parachutes and ropes are made from nylon fibres.

2. My mother always buy PET bottles and PET jars for storing rice and sugar. I wonder what PET is ?

Ans. PET is very familiar form of polyester. It is used to prepare bottles, utensils, films, wires and other useful products.

3. My mother never wears polyester clothes while working in the kitchen. Why?

Ans. Polyester is a synthetic fibre. It easily catches fire. The fibre melts and sticks to the body.