

Q1. Cotton is a natural polymer. What is its chemical name?

Answer:

The chemical term of cotton is **cellulose**.

Cotton is a soft fibre that grows as a boll on cotton plants.

It is primarily grown in areas with black soil and hot temperatures. Cotton is grown mostly in Maharashtra, Punjab, Rajasthan, Madhya Pradesh, Gujarat, and other states in India.

Q2. A synthetic fiber which looks like silk is obtained by chemical treatment of wood pulp. It is, therefore, known as artificial silk. What is its common name?

Answer:

Rayon is made from wood pulp or cellulose that has been chemically treated.

Chemical treatment of wood pulp produces a synthetic thread that resembles silk. Rayon is a synthetic fibre. Rayon is a type of natural fibre made from cellulose taken from wood pulp or cotton.

Q3. Terrycot is made by mixing two types of fibres. Write the names of the fibres.

Answer:

Terylene and cotton are combined to make Terrycot. Terylene is a polymer made up of Ethylene Glycol and Terephthalic Acid. 65% cotton and 35% Terylene is the most common ratio. Terylene is one of the most widely used polyester fibres. When compared to Terylene, Terrycot fabric is far more convenient and comfortable to wear.

Q4. Plastic articles are available in all possible shapes and sizes. Can you tell why?

Answer:

Plastic is easily moldable and may be made into a variety of large and small objects. As a result, plastic items come in a variety of shapes and sizes.

Q5. Plastic is used for making a large variety of articles of daily use and these articles are very attractive. But it is advised to avoid the use of plastic as far as possible. Why?

Answer:

Plastic is non-biodegradable, which means it cannot be broken down using any methods. Plastic, because of its non-biodegradable nature, pollutes the environment, hence it is advisable to avoid using it as much as possible.

Q6. Why is it not advisable to burn plastic and synthetic fabrics?

Answer:

When plastics and synthetic fabrics are burned, a large amount of harmful gases are released, resulting in air pollution. As a result, burning plastic and synthetic fibres is not recommended.

- Synthetic fibres, like natural fibres, are difficult to colour. These fibres burn more rapidly than natural fibres. They are susceptible to heat damage and rapidly melt.
- Many animals die after consuming plastic materials.

- When plastic is burned, it emits harmful gases.

Q7. Select the articles from the following list which are biodegradable.

- (a) paper
- (b) woolen clothes
- (c) wood
- (d) aluminium can
- (e) plastic bag
- (f) peels of vegetables

Answer:

The list of biodegradable articles are –

- (a) paper
- (b) woolen clothes
- (c) wood
- (f) peels of vegetables

Q8. A bucket made of plastic does not rust like a bucket made of iron. Why?

Answer:

Plastic does not rust when exposed to air and water because it does not react with air, whereas iron oxidises when exposed to air and water, resulting in corrosion in iron but not in plastic.

Short Answer Type Questions

Q1. Rohit took with him some nylon ropes, when he was going for rock climbing. Can you tell why he selected nylon ropes instead of ropes made of cotton or jute?

Answer:

Nylon rope is more resistant to damage than jute or cotton rope. Nylon ropes are even more durable than steel ropes of the same thickness. That is why Rohit brought a nylon rope with him on his hill climbing expedition.

Q2. A lady went to the market to buy a blanket. The shopkeeper showed her blankets made of acrylic fibres as well as made of wool. She preferred to buy an acrylic blanket. Can you guess why?

Answer:

Acrylic is a synthetic fibre that can be used in a variety of applications. Acrylic is also called artificial wool or synthetic wool because it closely resembles wool. Acrylic is a less expensive alternative to genuine wool and maybe dyed in a variety of colours. As a result, acrylic is becoming increasingly fashionable, and it is increasingly replacing wool.

Q3. PVC (polyvinyl chloride) is a thermoplastic and is used for making toys, chappals, etc.

Bakelite is a thermosetting plastic and is used for making electrical switches, handles of various utensils, etc. Can you write the major difference between these two types of plastics?

Answer:

The main difference is that thermosetting plastics cannot be softened by heating after they have been moulded. Thermoplastics, on the other hand, deform when heated.

The following are some examples of plastic:

PVC and polyethylene are thermoplastics.

Melamine and Bakelite are thermosetting plastics.

Q4. Fill in the blanks:

- (i) A polymer is a chain of many small units joined together which are called _____.
- (ii) The synthetic fibres are also known as _____ fibres.
- (iii) The first fully synthetic fibre was _____.
- (iv) A fibre similar to wool is _____.
- (v) A plastic used for making crockery is _____.

Answer:

- (i) monomers
- (ii) man-made or artificial
- (iii) Nylon
- (iv) Acrylic
- (v) Melamine

Q5. Match items in List A with the items of list B.

List A List B

- (a) nylon (i) non-stick coating
- (b) PET (ii) electric switches
- (c) rayon (iii) parachutes
- (d) thermosetting plastics (iv) polyester
- (e) Teflon (v) artificial silk

Answer:

- (a) nylon – (iii) parachutes
- (b) PET – (iv) polyester
- (c) rayon – (v) artificial silk
- (d) thermosetting plastics – (ii) electric switches
- (e) Teflon – (i) non-stick coating

Q6. Unscramble the jumbled words given below, related to synthetic materials.

- (a) anory
- (b) lopmery
- (c) relyteen
- (d) laspict
- (e) yespolter
- (f) felton

Answer:

1. Rayon
2. Polymer
3. Terylene
4. Plastic
5. Polyester
6. Teflon

Long Answer Type Questions

Q1. Indicate whether the following statements are True or False. Also, write the false statements in their correct form.

- (i) The fabric terywool is obtained by mixing terylene and wool.
- (ii) Synthetic fibres do not melt on heating.
- (iii) It is risky to wear synthetic clothes while working in the kitchen.
- (iv) Most of the plastics are biodegradable.

Answer:

- (i) True. The fabric terry wool is procured by combining terylene and wool.
- (ii) False. Synthetic fibres do melt on heating.
- (iii) True.
- (iv) False. Plastics are non-biodegradable.

Q2. Write the importance of synthetic polymers in our life.

Answer:

The importance of synthetic polymers in our life is as follows:

- 1) It is used to make ropes for rock climbing, fishing nets, and parachutes, among other things, because of their outstanding flexibility and high strength.
- 2) Acrylic, a synthetic material, is used in the manufacture of sweaters, boots, gloves, as well as furnishing fabrics and carpets due to its resemblance to many natural fibres.

3) Terylene is used in the manufacture of clothing. It's also combined with other fabrics to make a wide range of apparel options.

4) One of the most commonly used materials is plastic containers. They're used to keep food and drinks, and they're also quite handy.

5) Synthetic fibres are inexpensive, making them accessible to the general public.

Q3. Despite being very useful it is advised to restrict the use of plastic. Why is it so? Can you suggest some methods to limit its consumption?

Answer:

Plastic is a non-biodegradable material that pollutes the environment. Simultaneously, burning such items in the form of waste pollutes the air.

There are a few things we can do to cut down on daily consumption:

- Instead of plastic bags, paper bags are strongly suggested.
- If at all possible, reuse to cut down on consumption.
- Plastic may be recycled. It necessitates the collection, sorting, chopping, melting, and remoulding of plastic.
- Do not burn the plastic since it releases carbon monoxide, a highly toxic gas that causes cancer.

Q4. Write an activity to show that synthetic fibres are stronger than the cotton fibres.

Answer:

Activity

- Take an iron stand with a clamp and a 65-cm-long cotton thread.
- Tie a knot in the thread and let it hang freely from the clamp.
- Suspend a pan from the free end so that weight can be placed in it.
- One by one, add weight until the thread breaks.

Observation

- Make a note of how much weight is required to break the thread. This weight denotes the fibre's tensile strength.
- Repeat the activity using wool, silk, and nylon threads.
- You'll notice that the weight necessary to break the threads of wool, silk, and nylon is greater than that required to break the threads of cotton.

Inference

Thus, synthetic fibres are more durable than cotton because the weight required to break the threads of wool, silk, and nylon is more.

Q5. Complete the crossword given below with the help of clues.



Across

- 1. Substance used as synthetic wool (7)
- 2. A plastic used for making containers and carry bags (9)
- 3. Substance made up of large number of smaller molecules (7)
- 4. Another name for this compound is artificial silk (5)

Down

- 5. A type of fibre obtained naturally from cocoon (4)
- 6. A synthetic fibre classified as polyester (8)
- 7. A polymer used for making rope (5)

Answer:

Across

1. ACRYLIC
2. POLYTHENE
3. POLYMER
4. RAYON

Down

1. SILK
2. TERYLENE

3. NYLON

CBSE Class 8 Science Chapter 3 MCQ Type Questions

Q1. Name a natural fibre from the following:

- (a) Nylon
- (b) Polyester
- (c) Rayon
- (d) Cotton

Answer: (d) Cotton

Q2. Which of these items given below cannot be recycled?

- (a) Cooker handles
- (b) Carry bags
- (c) Toys
- (d) Plastic chair

Answer: (a) Cooker handles

Q3. What is PET?

- (a) polyester
- (b) polyamide
- (c) nylon
- (d) thermosetting polymer

Answer: (a) polyester