01 Synthetic polymers have become an integral part of our lives. They are replacing metals, wood and natural fibres due to their durability and less wear and tear. They are non-biodegradable i.e. they are not decomposed in nature by microorganisms, hence cause pollution. The advantages of synthetic polymers are far more than their disadvantages. With careful use, they can be a boon to mankind.

1. Manufacturing synthetic fibres is actually helping conservation of forests when compared with the manufacture of natural fibres. Explain.
2. The polythene bags carelessly thrown here and there pose a big threat to the environment and to the animals. Give reasons.
3. Polythene bags remain on the land for several years depriving space for biodegradable substances to decompose.

Your solution here:

02 Polyester is a synthetic fibre. Fabrics made from this fibre do not get wrinkled easily. It remains crisp and easy to wash and dry. It is quite suitable for making dress materials. It can be mixed with a natural fibre to give a blended fibre which has properties of both the fibres.

1. Why synthetic fibres are resistant to wrinkles ?
2. Which fibre absorbs more amount of water ?
3. Why blended fabrics have more properties than natural and man-made synthetic fibres ?

Your solution here:

03 Tensile strength of a fibre determines its strength due to a mild or heavy load. It is the maximum amount of stress that it can be subjected to before the material breaks or tears away. The tensile strength of a polymer depends on the arrangement of molecules that make up the polymer, as well as the orientation of the polymer. Acrylic is a substitute of wool. It is used to make wide range of products.

1. Which fibre has high tensile strength ?
2. Parachute and the ropes for rock climbing are made up of nylon and not steel ?
3. Wool is expensive. It is replaced with Acrylic having better properties than natural fibre Wool. Give reasons.

Your solution here:

04 X is a thread from which Y is made. If Y is of natural origin it is called Z fibres and if it is prepared by man it is called W fibres. Nylon, rayon, polyester, etc. are examples of W.

1. What is X ?
2. What is Y ?
3. What is Z ?
4. What is W ?

Your solution here:

05 A student performs an experiment. He cuts out equal sized squares from each of the three fabrics - nylon, wool and cotton and weighs them. He then places each fabric square into a beaker containing 500 ml of water. After 10 minutes he removed the fabric squares from the water, weighed them and recorded his observations in a table given below.

Fabric	Mass before soaking (g)	Mass after soaking (g)
Nylon	30	43
Wool	35	70
Cotton	40	50

1. Which fabric absorbed less water ?
2. What is the difference between water absorption capacity of natural fabrics wool and cotton ?
3. After soaking in water, which fabric becomes the heaviest ?

Your solution here: