Synthetic Fibres and Plastics

Q.1 Explain why some fibres are called synthetic.
Sol: The fibres that are made by man using different kind of chemicals are known as synthetic fibres. Synthetic fibres are also known as manmade fibres. Such as Rayon, Nylon, Polyester etc.

Q.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.
Sol: 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.

Q.3 Fill in the blanks in the following statements.
(a) Synthetic fibres are also called _____ or _____ fibres.
(b) Synthetic fibres are synthesized from raw materials called _____.
(c) Like synthetic fibres, plastic is also a _____.
Sol: Fill in the blanks:
(a) Synthetic fibres are also called **man-made** or **artificial** fibres.
(b) Synthetic fibres are synthesised from raw materials called **petrochemicals**.
(c) Like synthetic fibres, plastic is also a **polymer** .

Q.4 Give examples which indicate that nylon fibres are very strong.
Sol: Nylon fibres are very strong. For this reason it is used for making ropes for climbing rocks and for making parachutes. These examples show that nylon fibres are very strong fibres.

Q.5 Explain why plastic containers are favoured for storing food.
Sol: The Plastic containers are light weight, Lower price, Good strength, Easy handling and no reaction with food items. Due to these characteristics, it is favoured for storing food.

Q.6 Explain the difference between thermoplastic and thermosetting plastics.
Sol: The difference between thermoplastic and thermosetting plastics:

Thermosetting plastic	Thermoplastic
This plastic cannot be bent easily. It may break when try to bend.	This plastic can be bent easily.
This plastic cannot be softened by heating. So, it cannot be reshaped once molded.	This plastic can be softened easily by heating. So, it can be reshaped again and again.
It loses their plasticity.	It does not lose their plasticity.
Examples are bakelite and melamine	Examples: polyethene, PVC, etc.

Q.7 Explain why the following are made of thermosetting plastics.
(a) Saucepan handles
(b) Electric plugs/switches/plug boards
Sol:
(a) Saucepan handles are made of thermosetting plastics because these plastics are a bad conductor of heat and do not get heated up while cooking.
(b) Since thermosetting plastics (Bakelite) are bad conductor of heat and electricity. So it is used for making electric plugs, switches, plug boards, etc.

Q.8 Categorize 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 wires, plastic chairs, electrical switches.

Sol:

Can be recycled	Cannot be recycled
Plastic toys carry bags, plastic bowls, plastic covering on electrical wires, plastic chairs.	Telephone instruments, cooker handles, ballpoint pens, electrical switches.

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

Sol: He should buy a cotton shirt because cotton cloths are very good absorber of sweat and moisture. These cloths can soak the sweat coming out from the our body and expose it to the environment. It also helps in evaporating the sweat and give the cooling effect to our body. That's why cotton clothes are much better than the clothes made from synthetic material.

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

Sol: Plastics are non-corrosive in nature which means that it cannot destroyed by the chemical action. Plastic do not react with items stored in it. In our day today life we use plastics to store many food items, detergents and lots of chemicals. Plastic is not effected by any chemicals. These examples show that plastics are non-corrosive in nature.

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

Sol: No, The handle and bristles of toothbrush should not be made from same materials because our gums are soft and the bristles should be made of soft material. So, we need a soft material for making bristles to brush our teeth. Whereas handle is made from bad conductor of heat and strong plastic.

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

Sol: Plastics must be avoided as far as possible. Since plastics are non-biodegradable. The use of plastics materials has a bad effect on the environment. Once it is introduced into the environment takes lots of years to decompose. If we burn, it releases poisonous gases that are harmful to living beings. The plastics also choke the respiratory tract of animals when it is consumed which leads to death. Therefore, the usage of plastic should be avoided.

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

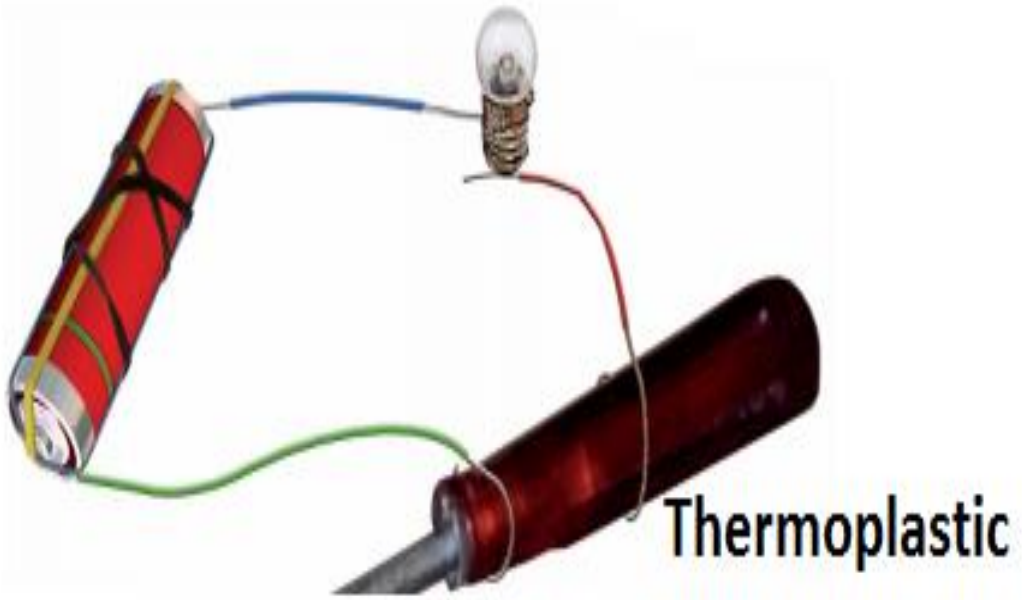
A	B
(i) Polyester	(a) Prepared by using wood pulp
(ii) Teflon	(b) Used for making parachutes and stockings
(iii) Rayon	(c) Used to make non-stick cookware
(iv) Nylon	(d) Fabrics do not wrinkle easily

Sol:

A	B
(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

Q.14 'Manufacturing synthetic fibres is actually helping conservation of forests'. Comment.
Sol: Manufacturing synthetic fibres is actually helping conservation of forests'. Because in the manufacturing of synthetic fibres, we use only chemical substances and no any natural materials. Thus, by the making of synthetic fiber we conserve the forests.

Q.15 Describe an activity to show that thermoplastic is a poor conductor of electricity.
Sol: If we arrange a electric circuit and leave a gap between two ends of the wire. After that we place a thermoplastic in the gap.



Now, we observe the bulb.
We observe that the bulb does not glow. This activity shows that thermoplastic is a poor conductor of electricity.