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SYNTHETIC FIBRES AND PLASTICS

TEXTBOOK QUESTIONS AND THEIR ANSWERS

Q.1. Make a list of some common articles made from fibres. Try to separate them into those made from natural fibres and those made from artificial fibres. Make entries in given table.

Table : Natural and artificial fibres

S.No.	Name of Article	Type of Fibre (Natural / artificial)

Ans.

Table : Natural and Artificial Fibres

S.No.	Name of Article	Type of fibre (Natural / artificial)
(i)	Cotton clothes	Natural
(ii)	Woolen sweater	Natural
(iii)	Nylon saree	Synthetic
(iv)	Woolen socks	Natural
(v)	Polyester shirt	Synthetic

Q.2. Is nylon fibre really so strong that we can make nylon parachutes and ropes for rock climbing ?

Ans. Yes, nylon fibres are very strong, elastic and light. Now, it is scientifically tested that nylon wire is stronger than steel wire. Therefore, nylon fibres are used for making parachutes and ropes for rock climbing.

Q.3. Can you give names of some natural fibres ?

Ans. Yes, cotton, wool, silk, etc., are natural fibres.

Q.4. My mother always buys PET bottles and PET jars for storing rice and sugar. I wonder what PET is !

Ans. PET is a very familiar form of polyester. PET denotes **polyethylene terephthalate**. It is used for making bottles, utensils, films, wires and other useful products.

Q.5. Why one should never wear polyester clothes while working in the kitchen ?

Ans. Polyester is a synthetic fibre. Fabric made from this fibre melt on heating. If the clothes catch fire, the fabric melt and sticks to the body of the person wearing it. Therefore, one should never wear polyester clothes while working in the kitchen.

Q.6. Do synthetic fibres soak less/more water than the natural fibres ?

Ans. Synthetic fibres soak less water than the natural fibres.

Q.7. Do synthetic fibres take less / more time to dry ?

Ans. Synthetic fibres take less time to dry.

Q.8. What does the activity tell you about the characteristics of the synthetic fibres ?

Ans. Synthetic fibres (polyester, terylene and nylon) take less time to dry as compare to natural fibres.

Natural fibres (cotton, wool and silk) absorb lot of water whereas polyester, terylene and nylon do not absorb so much water.

Q.9. Find out from your parents about the durability, cost and maintenance of synthetic fabrics compared with the natural fabrics ?

Ans. The synthetic fabric clothes are very durable, less costlier than natural fabrics and least effort is required in the maintenance of synthetic fibres. As the fabric made from this fibre does not get wrinkled easily. It remains crisp and easy to wash while natural fabrics require high maintenance.

Q.10. Explain why some fibres are called synthetic.

Ans. Some fibres are called synthetic because they do not occur naturally and are made by human beings.

Q.11. 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.

Q.12. 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) man-made, artificial
- (b) petrochemicals
- (c) polymer

Q.13. Give examples which indicate that nylon fibres are very strong.

Ans. Nylon fibres are so strong, that they are used for **making parachutes** and **ropes** for rock-climbing. It is scientifically proved that nylon wire is stronger than steel wire.

Q.14. Explain why plastic containers are favoured for storing food.

Ans. Plastic containers are favoured for storing food because

1. Plastics do not react with the food stored in them.
2. Plastics are easy to handle and safe.
3. Plastics are light weighted but strong.
4. Plastics do not get rusted.
5. Plastic has a good strength so it is durable.
6. Plastic has a low price range.

Q.15. Explain the difference between the thermoplastic and thermosetting plastics.

Ans.

Thermoplastic	Thermosetting plastic
1. It can be softened on heating	1. It cannot be softened on heating and break when forced to bend.
2. It can be bent or deformed easily.	2. It cannot be bent or deformed.
3. It can be reshaped.	3. It cannot be

4. It is a good conductor of heat.	reshaped.
5. Thermoplastics are used for manufacturing toys, combs, bucket and containers	4. It is a bad conductor of heat.
6. Polythene and PVC are the examples of thermoplastics.	5. Thermosetting plastics are used for making electrical switches, handles of various utensils etc.
	6. Bakelite and melamine are the examples of thermosetting plastics.

Q.16. Explain why the following are made of thermosetting plastics.

(a) Saucepan handles

(b) Electric plugs / switches / plug boards

Ans. (a) The handles of saucepan are made of thermosetting plastic because it is a bad conductor of heat and do not get heated

up while cooking. So it becomes easy to handle the utensil while cooking.

- (b) Electric plugs / switches and plug boards are made up of thermosetting plastic because it is a bad conductor of electricity. It does not allow the electric current to pass through it, thus safe in using the electric appliances.

Q.17. Categorise the materials of the following products into ‘can be recycled’ and ‘cannot be recycled’.

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

Ans. Can not be Recycled : Cooker handles, electric switches, telephone instruments.

Can be Recycled : Toys, carry bags, plastic bowls, ball point pen, plastic chairs, electric wire covering.

Q.18. Rana wants to buy shirts for summer. Should he buy cotton shirts or shirts made from synthetic material ? Advice Rana, giving your reason.

Ans. Cotton clothes are preferred to synthetic clothes in summers because cotton is a bad conductor of heat. It does not allow the

outer heat to enter in our body, thus protects body from heat. It also has more capacity to hold moisture than the synthetic clothes. So, it retains the sweat of the body and keeps it cool. So, Rana should buy shirts made up of cotton.

Q.19. Give examples to show that plastics are non-corrosive in nature.

Ans. Following examples show that plastics are non-corrosive in nature :

- (i) They are used to store chemicals in laboratories.
- (ii) They are used to store all types of food, as it does not react to materials stored in it.
- (iii) It does not even react with air and water.
- (iv) It does not get rusted when exposed to moisture and air.
- (v) It does not decompose when left in open for a long period.

Q.20. Should the handle and bristles of a tooth brush be made of the same material ? Explain your answer.

Ans. No, the handle and bristles of a tooth brush should not be made of the same material because the bristles should be soft and the handle should be hard. The bristles made up of soft material do

not harm the gums. The handles made up of hard material can give firm grip.

Q.21. 'Avoid plastics as far as possible.' Comments on this advice.

Ans. Plastics are harmful for our environment. Since plastic takes several years to decompose, it is not environment-friendly. It causes environmental pollution. Besides, when the plastics burnt, it takes a long time to get completely burnt. In the process it releases a lot of poisonous fumes into the atmosphere causing air pollution.

Q.22. Match the terms of column I correctly with the phrases given in column II :

Column I	Column II
(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 cookwares
(iv) Nylon	(d) Fabrics do not wrinkle easily

Ans.

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

Q.23. ‘Manufacturing synthetic fibres is actually helping conservation of forests’. Comment.

Ans. Manufacturing synthetic fibres is actually helping conservation of forests because it does not require cutting plants and hunting animals to get the natural fibres. The synthetic fibres are made up of chemicals and these chemicals are not available in forests. When we use articles made of plastics we also save thousands of trees which otherwise has to be cut if we used articles made of wood or natural fibres.

Q.24. Describe an activity to show that thermoplastic is a poor conductor of electricity.

Ans. Observe all the electric wires of your house from a distance. You can take an electric wire which is not carrying current. Open the main wire you will see three / two small wires in the main wire and will see that they have covering of red, green and yellow plastic covering. This proves that the thermoplastic is bad conductor of electricity.