ExperiHub
Live to learn. Learn to live.

Synthetic Fibres & Plastics - Quiz

Multiple Choice Questions

1. Pick the synthetic fibre out of the following?
   a. Cotton b. Nylon c. Jute d. Wool

2. Which of the following is a source of rayon?
   a. Wool b. PET c. Wood pulp d. Silk

3. Polycot is obtained by mixing
   a. nylon & wool b. polyester & wool c. nylon & cotton d. polyester & cotton

4. Which is a thermosetting plastic?
   a. Melamine b. Polythene c. PVC d. Nylon

5. The material similar to silk in appearance is
   a. Nylon b. Rayon c. Polyester d. Terylene

6. The most suitable material for the preparation of handles of cooking utensils is
   a. Polythene b. PVC c. Nylon d. Bakelite

7. Which of the following is not a common property of plastics?
   a. Non-reactive b. Light in weight c. Durable d. Good conductor of electricity

8. Each repeating unit in a polymer is called
   a. Monomer b. Dimmer c. Trimmer d. Tetramer

9. Which of these fibres is made from a raw material obtained from plants?
   a. Rayon b. Nylon c. Terylene d. Polyester

10. Which of these is a thermosetting plastic?
    a. Polystyrene b. Bakelite c. Polythene d. Polyvinyl chloride

11. Which of these plastics is a polymer?
    a. Bakelite b. Polystyrene c. Polythene d. All of these

12. Which of these can you use as a substitute for glass in windows?
    a. Polythene b. PVC c. Perspex d. Teflon

13. Which of these is not a property of plastics?
    a. bad conductor of heat b. bad conductor of electricity
    c. inflammable d. soluble in water

Answer the following Questions

1. Neha and Anushka went shopping. Neha wore a cotton dress and Anushka wore a synthetic dress. It was a hot summer day. Who wore a more appropriate fabric? Give reason.
2. Why do you think travel suitcases are generally made from synthetics?
3. Dolly made piping hot coffee for her father. She quickly poured it into a plastic cup and to her horror she found that the cup cracked immediately. Why do you think this happened?
4. Mrs Nair lives in Delhi and loves to wear polycot saris in summer and in winter. Give reasons for her preference.
5. Why do people generally buy polyfill pillows and not cotton-filled pillows?
6. Cotton is a natural polymer. What is its chemical name?
7. Terrycot is made by mixing two types of fibres. Write the names of the fibres.
8. Plastic articles are available in all possible shapes and sizes. Can you tell why?
9. 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?
10. 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?
11. 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?
12. 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?
13. Which synthetic fibre is commonly used to make strong ropes?
14. All plastics are made of long chain molecules called _____.
15. Name the plastic whose sheets are used for packing liquids.
16. From which plastic material is thermocol made?
17. Which plastic material is used to make non-stick pans?
18. Name one thermosetting plastic which is a good insulator and is used to make plugs and switches.
19. Why is rayon called a regenerated fibre?
20. Why are plastic bottles commonly used to store chemicals in a chemistry laboratory?
21. These days clothes made out of a mixture of synthetic fibres and natural fibres are more popular than those made purely out of synthetic fibres. Discuss the reasons for this.
22. Give the characteristic properties and important uses of the following:
    a. Polythene b. Polystyrene c. Teflon d. Bakelite

23. Do you think rayon when burnt will stick to the body like other synthetic fibres?
24. Burning cotton smells like burning paper, whereas burning wool smells like burning hair. Why?
25. Which property of plastics makes them so useful but also makes them an environmental hazard?
26. Clay is a 'plastic' material. does this imply that it is a polymer?
27. Ankit was learning how to cook. His father strictly told him not to wear nylon clothes in the kitchen. Why?

ANSWER

Multiple Choice Questions

1. b
2. c
3. d
4. a
5. b
6. d
7. d
8. a
9. a
10. b
11. d
12. c
13. d

Answer the following Questions

1. Neha is wearing Cotton which is more appropriate fabric than synthetic dress in hot summer days, because synthetic fibres absorb heat.
2. Synthetics are manmade fibres which are generally used for making travel suitcases.
   This is because these fabrics are stronger than the natural fibres. Its tensile strength is better making it durable to carry heavy loads and is even water proof.
   Air circulation is not allowed keeping the objects inside the bags warm.
3. Because that cup is made up by thermoset plastic. They do not melt on heating but if they are exposed to enough heat, they will crack or become charred.
4. The polycot saris contain cotton and polyester fabrics blended together. Cotton are well known for their ability to aid in the cooling system through soaking off of sweat from the body of the wearer and its ability to allow air to flow freely. This helps her to keep cool during summer. Contrary to cotton, polyester fabrics, allow very little air through them and do not allow sweat to easily pass through. This helps keep one warm, especially in polyester fabrics that are meant for winter conditions. These

fabrics, depending on the composition of the cotton and the polyester that constitutes them, can serve in both winter and summer.

5. People generally buy polyfill pillows because it remain fluffy and do not flatten with the passage of time and continuous use. However, the cotton filled pillows though very comfortable flattens with regular use. The cotton pillows take a lot of time for drying when washed as the moisture retains for long period of time.
6. Cellulose
7. Terylene and cotton
8. Plastic is easily moldable so the articles can be made in any shape and size.
9. Due to its non-biodegradable nature it causes environmental pollution.
10. Nylon ropes are strong, elastic and lighter as compared to cotton and jute ropes.
11. Acrylic blankets are cheap, light in weight, more durable and are available in variety of colours and designs. They can be easily washed at home.
12. Thermoplastics get deformed easily on heating and can be bent easily on heating. On the other hand thermosetting plastics when molded once cannot be softened on heating.
13. Nylon is a synthetic fibre which is very strong, even stronger than steel wire. Therefore, it is commonly used to make strong ropes.
14. Polymers
15. Polythene sheets are used for packing liquids.
16. Thermocol is made from polystyrene plastic.
17. Teflon is used to make non-stick pans. This is because teflon is a very slippery material. In addition to being slippery, the material also has a number of other features. It has high temperature resistance, little reaction to most chemicals and reduced stress-cracking and corrosion.
18. Bakelite, a thermosetting plastic, is used to make plugs and switches. Thermosetting plastics are bad conductors of heat and electricity. They do not allow electricity to pass through, which is why they are used to make plugs and switches.
19. Rayon is called a regenerated fibre because its preparation involves the chemical breakdown of cellulose using an alkaline solution. This is followed by the regeneration of solidified synthetic fibres by passing them through spinnerets.
20. Plastic bottles are commonly used to store chemicals in a chemical laboratory because plastics are non-reactive. They are inert to air and water. They are non-corrosive, therefore we can store chemicals in them safely.
21. Clothes purely made of synthetic fibres are not comfortable in hot and humid weather as they are water resistant and do not absorb sweat from the body. They catch fire easily and stick to the body and cause severe burns and injuries. Therefore, they are not suitable in kitchen and laboratories. On the other hand, clothes spun out of fibres made by a mixture of synthetic and natural fibres do not cause such problems. Moreover, mixing synthetic fibres with natural fibres enhances their properties, such as strength, elasticity and ease of washing and ironing.

22. (a) The properties and uses of **polythene** are as follows:

    Properties:

    1) It is water resistant.

    2) It is strong but flexible and can be rolled into sheets and moulded into different shapes.

    Uses:

    Polythene sheets are used for the packaging of liquids such as milk. Polythene pipes are used to transport liquids such as oil and water. Polythene containers are used to store liquids.

    (b) The properties and uses of **polystyrene** are as follows:

    Properties:

    1) It can be easily moulded.

    2) It has poor chemical resistance.

    Uses:

    It is used for the packaging of delicate materials like electronic items. It is used to make thermocol. It is also used to insulate the hollow walls of the refrigerator.

    (c) The properties and uses of **teflon** are as follows:

    Properties:

    1) It is slippery and is not affected by heat.

    2) It does not react chemically with other substances.

    Uses:

    It is used as a non-stick coating on pans and other cooking utensils. It is used for making gaskets, pump packings, valves, seals etc.

    (d) The properties and uses of **bakelite** are as follows:

    Properties:

    1) It is a good electrical insulator.

    2) It is harder than other plastics.

    Uses:

    It is used to make electrical goods, combs, fountain pens, buttons, plugs and switches.

23. Synthetic fibres catch fire very easily. They melt on heating and stick to the body of the person wearing them. However, rayon is regenerated from cellulose and it doesn't melt on burning, rather it flares up like paper and smells like it.

24. Cotton smells like burning paper because both cotton and paper are extracted from plants and constitute mainly cellulose, whereas burning wool smells like burning hair because both wool and hair are extracted from animals and both have sulphur in them.

25. Plastics are non-reactive. They last much longer than any other material. They cannot be decomposed by bacteria and so are non-biodegradable in nature. These properties make plastics useful but also make them as environmental hazard.
26. Clay is a 'plastic' material because we can mould it into different shapes, which is a property of plastic. But clay is not a polymer because polymers are made up of monomer units while clay is not made up of monomer units. Clay is a mixture of compounds.
27. Nylon is a synthetic fibre. Synthetic fibres catch fire easily. They are inflammable. They melt on heating and stick to the body of the person wearing them which causes severe burn injuries. Therefore, these type of clothes are not suitable in a kitchen.