

CBSE Class 8 Chemistry

Chapter 3 Synthetic Fibre Objective Questions

1. Identify the product based on the given features.

I. It is a man-made product.

II. It has a linear arrangement of monomer units.

III. It is used for making goods like toys, combs, containers, etc.

A. Lycra

B. Rayon

C. Thermosets

D. Thermoplastics

Answer: (D) Thermoplastics

Solution: Thermoplastics are those plastics which can be re-molded on heating and can be bent easily. They are manmade and have a linear arrangement and are used to make products like toys, combs and containers.

2. _____ is the first fully synthetic fibre.

A. Acrylic

B. Polyester

C. Nylon

D. Rayon

Answer: (C) Nylon

Solution: Nylon was the first fully synthetic fibre made in 1931, without using any natural raw material. It was prepared from chemicals. Nylon fibres are strong, lustrous, elastic and used for making stockings, car belts, parachutes, ropes, etc.

3. A polymer is a large molecule composed of many repeated units. What is a polyester composed of?

A. Ether

B. Cellulose

C. Amino acids

D. Ester

Answer: (D) Ester

Solution: Polyester (Poly+ester) is a category of polymers, made up of the repeating units of a type of chemicals called ester. Polyester fibres are strong, resistant to stretching and shrinking. They dry quickly, are wrinkle resistant and can be easily washed.

4. Which of the following material is a mixture of two fibres?

- A. Jute
- B. Polywool
- C. Polyester
- D. Nylon

Answer: (B) Polywool

Solution: Polywool is a blend of polyester and wool. The blend is designed to afford the advantages of both the wool and polyester fibres in one fabric, such as wrinkle resistance, increased absorbancy, increased strength etc.

5. Identify the synthetic fibre which resembles wool.

- A. Rayon
- B. Terylene
- C. Nylon
- D. Acrylic

Answer: (D) Acrylic

Solution: Acrylic is a transparent, synthetic fibre which resembles wool. In everyday products, it is particularly used for signs, sales displays, roof windows, lenses and screens. A more impressive use of acrylic is in the big aquariums around the world. The panoramic windows of large aquariums are made of glued acrylic blocks.

6. Which of the following fibres is used for making parachutes?

- A. Plastic
- B. Tereylene
- C. Nylon
- D. Steel

Answer: (C) Nylon

Solution: Nylon threads are strong, elastic and lightweight. A nylon rope is actually stronger than a steel wire. Hence, it is preferred for making parachutes. Harness straps, suspension lines, tents, sleeping bags, sails, rope, tennis strings, fishing poles and lines, etc. are also made from nylon fibers because of its strength.

7. One of the advantages of nylon over rayon is that nylon:

- A. Is wrinkle free.
- B. Has low elasticity.
- C. Is a natural fibre.
- D. Is a good conductor of electricity.

Answer: (A) Is wrinkle free.

Solution: High elasticity and no wrinkling are the major advantages of nylon over rayon. Hence, though both are suitable for textile industry, nylon is more popular in making dresses and uniforms than rayon.

8. Which of the following is not manufactured from high-density polythene?

- A. Containers
- B. Pipes
- C. Candles
- D. Toys

Answer: (A) Containers

Solution: High-density polyethylene or HDPE is a thermoplastic polymer used in the production of plastic bottles, containers, corrosion-resistant pipes, etc. Commercially available candles are made with paraffin wax.

9. Fibres of _____ resemble that of silk and hence, it is popularly known as 'artificial silk'.

- A. acrylic
- B. polyester
- C. rayon
- D. nylon

Answer: (C) rayon

Solution: Rayon was developed as an alternative for silk. It is prepared by the chemical processing of wood pulp or cellulose. It resembles the texture and look of natural silk and can be woven like silk fibres. Hence, it is also called artificial silk.

10. Firefighters' uniform is coated with a plastic that is fire resistant. Identify the plastic from the given options.

- A. Teflon
- B. Melamine
- C. PET
- D. Polyester

Answer: (B) Melamine

Solution: Melamine is a versatile material which resists the spread of fire. It can tolerate heat better than other plastics. It is used in the firefighters' uniforms for the protection of their body from heat hazards. It is also used for making floor tiles, kitchenware, in aeroplanes and buses to prevent the spread of fire.

11. Identify the type of plastic that can best be used to make electrical switches.

- A. PVC
- B. Polythene
- C. PET
- D. Bakelite

Answer: (D) Bakelite

Solution: Bakelite is a thermosetting plastic, which means it retains its shape even at high temperatures. Whereas, the others mentioned are thermoplastics that can be moulded on heating. Also, bakelite is a poor conductor of electricity, hence, it protects us from getting electric shocks. This is the reason, bakelite is used for making electrical switches, handles of various utensils, etc.

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12. Modern non-stick cookware and the flat end of an electric iron has a coating of a polymer. Identify the name of the polymer.

- A. PVC
- B. Rayon
- C. Teflon

D. Polyester

Answer: (C) Teflon

Solution: A non-stick surface can reduce the ability of other materials to stick on it. These surfaces are coated with a synthetic polymer called teflon. Non-stick cookware and the flat end of an electric iron are coated with teflon.

13. Which one of the following is a thermosetting plastic?

A. PET

B. Acrylic

C. Melamine

D. Polylactide

Answer: (C) Melamine

Solution: Thermosetting plastics are those plastics which once moulded, cannot be softened by heating. Two examples are:

1) Bakelite: Used for making electrical switches, handles of various utensils.

2) Melamine: Used for making floor tiles, kitchenware and fabrics which can resist heat.

14. Terylene is a popular form of

A. Polyester

B. Monomer

C. Plastic

D. Nylon

Answer: (A) Polyester

Solution: Terylene is a popular form of polyester

15. Select the correct option from the given statements.

A. Polymers cannot form fibres

B. Polymers can be both natural and synthetic

C. Polymer is a natural substance

D. Polymer is a synthetic substance

Answer: (B) Polymers can be both natural and synthetic

Solution: Polymers can be synthetic as well as natural. Natural polymers: cellulose and cotton Synthetic polymers: Nylon

16. Which of the following groups contain only synthetic fibres?

- A. Nylon, Terylene, Wool
- B. Cotton, Polycot, Rayon
- C. PVC, Polythene, Bakelite
- D. Acrylic, Silk, Wool

Answer: (C) PVC, Polythene, Bakelite

Solution: PVC, Polythene, Bakelite, all three are synthetic fibers. Wool, cotton and silk are natural fibres.

17. Petrochemicals are

- A. mixtures of petrol and chemical fertilizer.
- B. materials obtained from petroleum refining.
- C. mixtures of coal and petrol.
- D. mixtures of wood and chemicals.

Answer: (B) materials obtained from petroleum refining.

Solution: Petrochemicals are materials obtained from refining of petroleum. These petrochemicals are used as raw material for manufacturing synthetic fibres.

18. Assertion: Acrylic fibres are used in making socks and shawls.

Reason: Acrylic fibres are a replacement or woollen fibres.

- A. Both assertion and reason are true and the reason is the correct explanation of assertion.
- B. Both assertion and reason are true but the reason is not correct for the assertion.
- C. The assertion is true but the reason is false.
- D. The assertion is false but the reason is true.

Answer: (A) Both assertion and reason are true and the reason is the correct explanation of assertion.

Solution: Acrylic has properties similar to that of wool and hence, is also called Orlon. It is crease-resistant, lightweight, soft, and keeps the person wearing it warm. Hence, it is used primarily as a replacement for wool.

19. Pickles are stored in plastic bottles mainly because they are:

- A. non-biodegradable
- B. good insulators
- C. durable
- D. non-reactive

Answer: (B) good insulators

Solution: Pickles have acid (vinegar) in them. Plastics do not react with the chemicals present in the pickle and do not corrode easily. Hence, it is safe to keep pickles in plastic or glass containers to avoid reaction between the acid and the container.

20. Polyethylene terephthalate belongs to which class of synthetic polymer?

- A. None of these
- B. Polyolefin
- C. Nylon
- D. Polyester

Answer: (D) Polyester

Solution: Polyethylene terephthalate commonly abbreviated **PET** or **PETE** is a member of the polyester family of polymers. Polyester is a category of polymers, in which ester is the repeating unit.