Polymers

Question1

Identify cross linked polymer from following.

MHT CET 2025 5th May Evening Shift

Options:

A.

High density polythene

B.

Low density polythene

C.

Melamine

D.

PVC

Answer: C

Solution:

We are asked to identify a **cross-linked polymer**.

Let's analyze options:

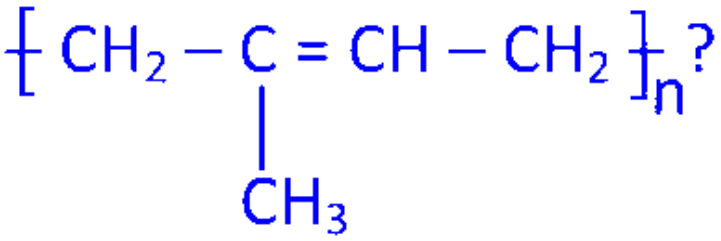
- **Option A: High Density Polyethylene (HDPE)** – It is a *linear polymer*, not cross-linked.
- **Option B: Low Density Polyethylene (LDPE)** – It has *branched structure*, but still not strongly cross-linked.
- **Option C: Melamine** – It forms a *cross-linked polymeric structure* (used in melamine resins, melamine formaldehyde plastics).
- **Option D: PVC (Polyvinyl chloride)** – It is a *linear polymer* with no cross-linking in its usual form.

✅ Correct Answer: **Option C – Melamine**

Melamine formaldehyde resin is a thermosetting plastic with extensive cross-linked network.

Question2

What is the name of monomer used in the formation of a polymer



MHT CET 2025 5th May Evening Shift

Options:

A.

Isoprene

B.

Tetrafluoroethylene

C.

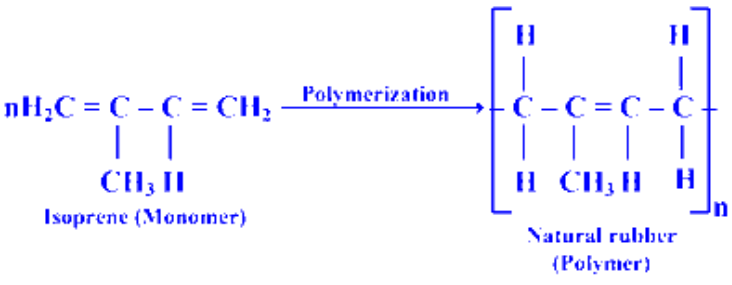
Acrylonitrile

D.

Caprolactum

Answer: A

Solution:



Question3

Identify the monomers used in preparation of dacron.

MHT CET 2025 26th April Evening Shift

Options:

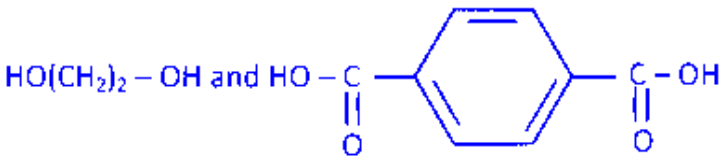
A.

C_6H_5OH and CH_2O

B.

$H_2C = CH - CH = CH_2$ and $H_2C = CH - CN$

C.



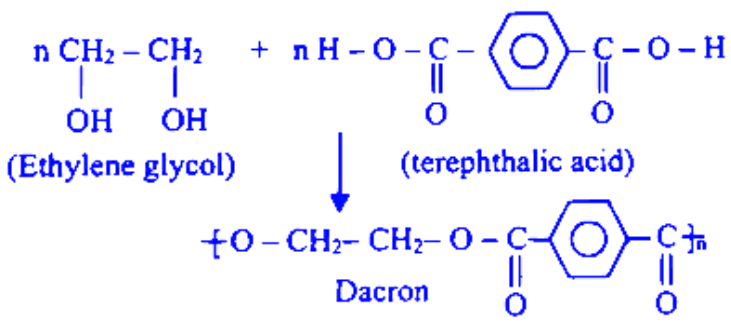
D.

$H_2C = CH - CN$ and C_6H_5OH

Answer: C

Solution:

Dacron is obtained by condensation polymerization of ethylene glycol and terephthalic acid in presence of catalyst at high temperature.



Question4

Which from following polymers is used to obtain surgical sutures?

MHT CET 2025 26th April Evening Shift

Options:

A.

Nylon 6

B.

Nylon 6,6

C.

Terylene

D.

Neoprene

Answer: B

Solution:

- **Nylon 6** → Polyamide, but not usually used for surgical sutures.
- **Nylon 6,6** → A polyamide, *is* used in making surgical sutures (both absorbable and non-absorbable, especially non-absorbable surgical sutures like surgical nylon).
- **Terylene** → Polyester (polyethylene terephthalate), used in making fabrics, Dacron, etc., but not typical for surgical sutures.
- **Neoprene** → Synthetic rubber (polychloroprene), used in conveyor belts, hoses, wetsuits, etc., not for sutures.

✅ **Correct answer: Option B — Nylon 6,6**

Question5

Which from following polymers does NOT contain either -COO - or $-CO-NH-$ linkage in it?

MHT CET 2025 26th April Morning Shift

Options:

A. Perspex

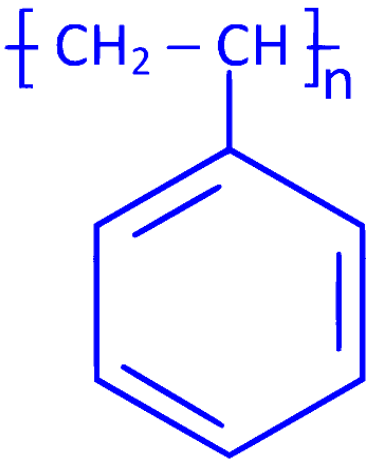
B. Polyacrylamide

C. Glyptal

D. Thermocol

Answer: D

Solution:



Question6

What are the compounds used to obtain nylon salt?

MHT CET 2025 26th April Morning Shift

Options:

A. Adipic acid and ammonia

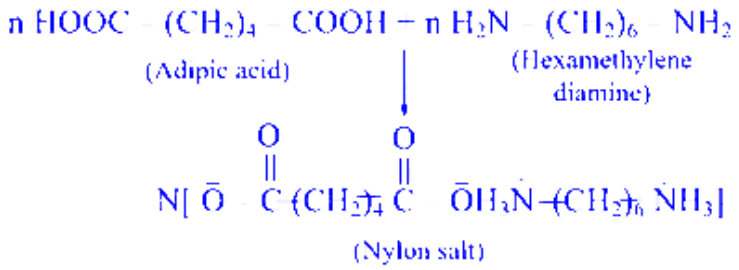
B. Terephthalic acid and hexamethylenediamine

C. Adipic acid and hexamethylenediamine

D. β-hydroxybutyric acid and hexamethylenediamine

Answer: C

Solution:



Question7

Which from following polymers is used as wool substitute?

MHT CET 2025 25th April Evening Shift

Options:

A. Glyptal

B. Polyacrylonitrile

C. Terylene

D. Neoprene

Answer: B

Solution:

The polymer used as a wool substitute is:

Option B: Polyacrylonitrile

👉 Polyacrylonitrile is commonly known in textile form as **"Orlon" or "Acrylic fiber"**, and it closely resembles wool in texture and feel. Hence, it is used as a **synthetic wool substitute**.

✅ Correct Answer: **Polyacrylonitrile**

Question8

Which of the following house hold plastic material is used to prepare drinking straws?

MHT CET 2025 25th April Evening Shift

Options:

A. PVC

B. LDPE

C. PS

D. PP

Answer: D

Solution:

Drinking straws are generally made from **Polypropylene (PP)** because it is food-grade, lightweight, flexible, and safe for contact with beverages.

✅ **Correct Answer: Option D — PP (Polypropylene)**

Question9

Identify the monomers used in preparation of Nylon 2- nylon 6

MHT CET 2025 25th April Evening Shift

Options:

A. Glycine and ε amino caproic acid

B. β - hydroxy butyric acid and β - hydroxy valeric acid

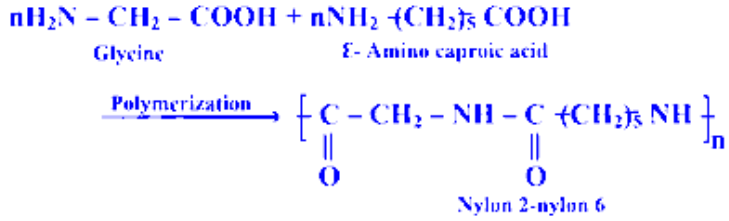
C. Ethylene glycol and phthalic acid

D. Acrylamide and vinyl chloride

Answer: A

Solution:

Monomers: Glycine and ε-amino caproic acid



Question10

Identify polyamide polymer from following.

MHT CET 2025 25th April Morning Shift

Options:

A. SBR

B. Melamine formaldehyde polymer

C. Bakelite

D. Nylon 6,6

Answer: D

Solution:

Nylons are polyamide polymer having $-CO-NH-$ groups as the inter unit linkages.

Question11

Which from following polymers is used to obtain rubber belts?

MHT CET 2025 25th April Morning Shift

Options:

A. Buna-N

B. Perspex

C. PVC

D. Polycarbonate

Answer: A

Solution:

- **Buna-N (Nitrile rubber):** A synthetic rubber, resistant to oils and widely used to make oil-resistant rubber products like belts, hoses, gaskets, etc. ✓
- **Perspex:** This is polymethyl methacrylate (PMMA), a transparent plastic (substitute for glass). Not used for belts.
- **PVC (Polyvinyl chloride):** Used in pipes, wires, flooring, but not suitable for rubber belts.
- **Polycarbonate:** Strong, transparent polymer used in safety equipment, CDs, helmets, etc. Not belts.

✅ **Correct Answer: Option A — Buna-N**

Question12

Which from following is a polyester fibre?

MHT CET 2025 23rd April Evening Shift

Options:

A. PHBV

B. Urea formaldehyde

C. Thermocol

D. Polyacrylonitrile

Answer: A

Solution:

Option A: PHBV (Polyhydroxy butyrate-co-hydroxy valerate)

- Biodegradable polyester (yes, it is a polyester but not a fibre commonly used for textiles; it's mainly biodegradable plastic).

Option B: Urea–formaldehyde

- A thermosetting polymer, used in adhesives and laminates, not a polyester.

Option C: Thermocol (Polystyrene foam)

- Polystyrene, not a polyester, used as packaging material.

Option D: Polyacrylonitrile (PAN)

- This is not a polyester. It is an acrylic fibre (precursor to carbon fibre). Used as synthetic fibre but classified as polyacrylic, not polyester.

👉 The commonly recognized **polyester fibre** is **terylene (PET: polyethylene terephthalate)**, which is not among the four options.

However, among the given choices, **PHBV is actually a polyester (biodegradable)**, even though it's not conventionally used as fibre (unlike PET). The others are not polyesters at all.

✅ **Correct Answer: Option A — PHBV**

Question13

Which from following polymers is biodegradable?

MHT CET 2025 23rd April Evening Shift

Options:

A. Nyon 6

B. Nylon 6,6

C. Nylon 2-nylon 6

D. HDP

Answer: C

Solution:

- **Option A: Nylon-6** → It is a synthetic polymer and is **not biodegradable**.
- **Option B: Nylon-6,6** → Also a synthetic polymer (from adipic acid and hexamethylene diamine), **not biodegradable**.
- **Option C: Nylon-2-nylon-6** → This is a copolymer of glycine (Nylon-2) and amino caproic acid (Nylon-6). Because glycine is a naturally occurring amino acid, this copolymer is designed to be **biodegradable**.
- **Option D: HDP (High Density Polyethylene)** → This is a typical polyolefin, **not biodegradable**.

✅ **Correct Answer: Option C — Nylon-2-Nylon-6**

Question14

Which from following polymers is used to obtain oil seals?

MHT CET 2025 23rd April Morning Shift

Options:

A. Teflon

B. Dacron

C. Nylon 6

D. LDP

Answer: A

Solution:

- **Option A: Teflon (PTFE)**

  Teflon (polytetrafluoroethylene) is chemically resistant, has low friction, and withstands high temperature, so it *is widely used for gaskets, oil seals, and bearings*.

- **Option B: Dacron (polyester, PET)**

  Mostly used in textiles, fabrics, and bottles, not suitable for oil seals.

- **Option C: Nylon 6**

  Used for fibers, ropes, mechanical parts, but not typically for oil seals.

- **Option D: LDP (Low Density Polyethylene, LDPE)**

  Flexible and used for packaging, films, insulation, but not for oil seals.

✅ Correct Answer: **Option A – Teflon**

Question15

What are the monomers used in preparation of PHBV?

MHT CET 2025 23rd April Morning Shift

Options:

A.

$HOOC-(CH_2)_4-COOH$ and $H_2N-(CH_2)_6-NH_2$

B. $HO-(CH_2)_2-OH$ and

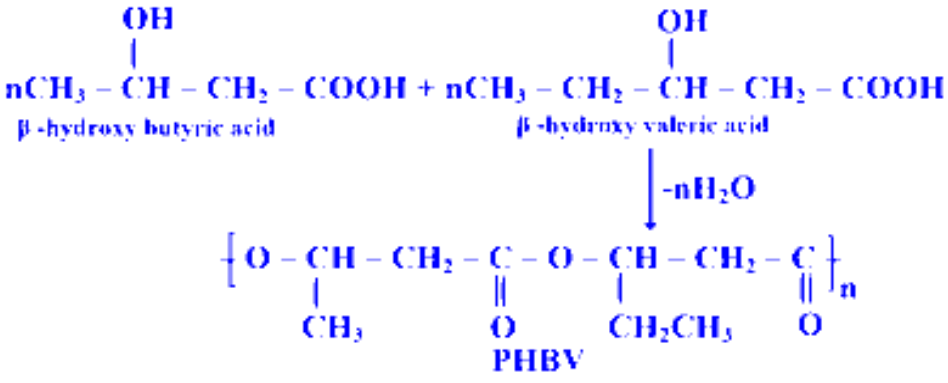
C. $HO-CH(CH_3)-CH_2-COOH$ and $HO-CH(CH_2CH_3)-CH_2-COOH$

D.

C_6H_5OH and CH_2O

Answer: C

Solution:



Question16

Identify a monomer used in preparation of neoprene.

MHT CET 2025 22nd April Evening Shift

Options:

A. 2-methyl-1,3-butadiene

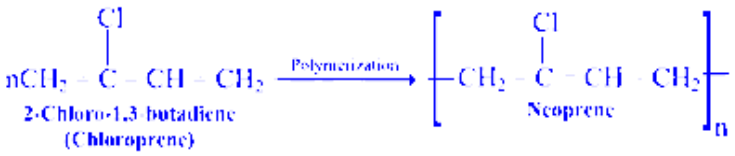
B. 2-chloro-1,3-butadiene

C. Melamine

D. 1,3-butadiene

Answer: B

Solution:



Question17

Which from following polymers contains $-CO-NH-$ linkage?

MHT CET 2025 22nd April Evening Shift

Options:

A. Glyptal

B. Thermocol

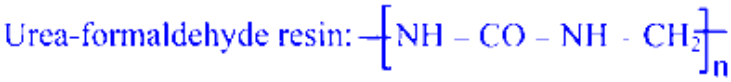
C. Buna-N

D. Urea-formaldehyde resin

Answer: D

Solution:

−CO − NH linkage in urea-formaldehyde resin can shown as,



Question18

Identify the monomer of natural rubber.

MHT CET 2025 22nd April Morning Shift

Options:

A. Isoprene

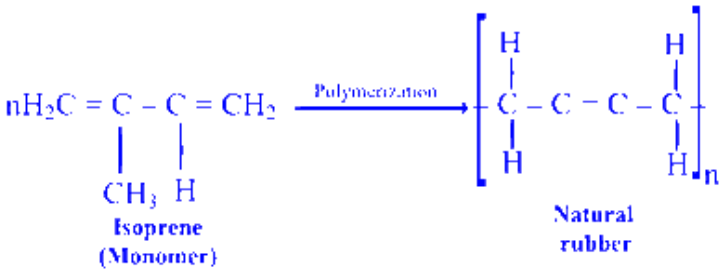
B. Polyacrylonitrile

C. Chloroprene

D. Tetrafluoroethylene

Answer: A

Solution:



Question19

Which from following polymers is used to prepare shoe soles?

MHT CET 2025 22nd April Morning Shift

Options:

A. Polyacrylamide

B. Perspex

C. Buna- N

D. Glyptal

Answer: C

Solution:

Let's analyze the options:

- **Polyacrylamide** → This is mainly used in water treatment, gel electrophoresis, etc., not in shoe soles.
- **Perspex** → This is polymethyl methacrylate (PMMA, acrylic), used in making glass substitutes, lenses, etc. Not for footwear soles.
- **Buna-N** → This is nitrile rubber (copolymer of butadiene and acrylonitrile). It is oil-resistant, tough, and used for making shoe soles, conveyor belts, etc. ✓
- **Glyptal** → This is a polyester resin (from glycerol + phthalic acid) used in paints and lacquers.

👉 Correct Answer: **Option C: Buna-N**

Question20

Identify the use of glyptal.

MHT CET 2025 21st April Evening Shift

Options:

A. To prepare gel used in electrophoresis.

B. To obtain paints.

C. To obtain decorative laminates.

D. To obtain food grade plastic container.

Answer: B

Solution:

Glyptal is a **polyester resin** produced by the condensation of glycerol and phthalic anhydride.

It is widely used in making **paints, lacquers, and varnishes** because of its insulating and adhesive properties.

✅ Correct Answer:

Option B: To obtain paints.

Question21

Identify a copolymer from following.

MHT CET 2025 21st April Evening Shift

Options:

A. Buna-S

B. Polyacrylonitrile

C. Polypropene

D. Nylon 6,6

Answer: A

Solution:

The polymers which have two or more types of repeating units are called copolymers.

Polymer	Monomer(s)
Buna-S	Butadiene + styrene
Polyacrylonitrile	Acrylonitrile
Polypropene	Propene
Nylon 6,6	Hexamethylenediammoniumadipate

Question22

Which from following compounds the thermocol is obtained?

MHT CET 2025 21st April Morning Shift

Options:

A. Bisphenol

B. Vinylchloride

C. Styrene

D. Butadiene

Answer: C

Solution:

Thermocol is a common name for expanded polystyrene foam. It is made by the polymerisation of **styrene**.

- Bisphenol is used to make polycarbonates.
- Vinyl chloride is used to make PVC (polyvinyl chloride).
- **Styrene** is used to make polystyrene (thermocol).
- Butadiene is used to make synthetic rubbers.

Correct answer:

Option C

Styrene

Question23

Which from following is a thermosetting polymer?

MHT CET 2025 21st April Morning Shift

Options:

A. Polyvinyl

B. Polystyrene

C. Ureaformaldehyde

D. Nylon 6,6

Answer: C

Solution:

The correct answer is **Option C: Ureaformaldehyde**.

Explanation:

- **Thermosetting polymers** are polymers that become hard and rigid on heating and cannot be remoulded or softened on reheating.
- Let's look at the options:
- **Polyvinyl (Polyvinyl chloride, PVC):** It is a **thermoplastic** polymer.
- **Polystyrene:** It is also a **thermoplastic** polymer.
- **Ureaformaldehyde:** It is a **thermosetting** polymer, formed by condensation polymerisation of urea and formaldehyde.
- **Nylon 6,6:** It is a **thermoplastic** polymer.

Therefore, the thermosetting polymer among the options is

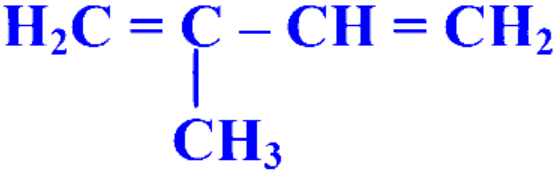
Ureaformaldehyde

Question24

Identify the monomer used in preparation of polyacrylonitrile?

MHT CET 2025 20th April Evening Shift

Options:

A. 

B. $F_2C = CF_2$

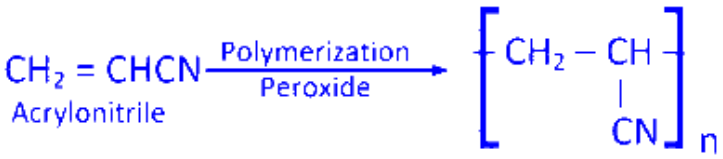
C. $H_2C = CH - CN$

D. $H_2C = CH - CH = CH_2$

Answer: C

Solution:

Polyacrylonitrile can be prepared by addition polymerization of acrylonitrile using peroxide initiator.



Question25

Which from following polymers when blended with cotton develops terycot?

MHT CET 2025 20th April Evening Shift

Options:

A. Dacron

B. Nylon 6

C. Polyacrylonitrile

D. Nylon 6,6

Answer: A

Solution:

When cotton is blended with **Dacron**, the resulting fabric is called **terycot**.

Dacron is the trade name for **polyester** (specifically, polyethylene terephthalate or PET).

So, the correct answer is:

Option A: Dacron

Question26

Identify the monomers use to prepare glyptal.

MHT CET 2025 20th April Morning Shift

Options:

A. β-Hydroxy butyric acid and β-hydroxy valeric acid

B. Ethylene glycol and phenol

C. Ethylene glycol and terephthalic acid

D. Ethylene glycol and phtalic acid

Answer: D

Solution:

The correct answer is:

Option D

Ethylene glycol and phthalic acid are the monomers used to prepare glyptal.

Explanation:

- Glyptal is a polyester resin.
- It is formed by the **condensation polymerisation** of a **diol** (ethylene glycol) and a **dicarboxylic acid** (phthalic acid).

The reaction is:

n (Ethylene glycol) + n (Phthalic acid) $\rightarrow$ Glyptal + $2n\,H_2O$

So, the monomers are **ethylene glycol** and **phthalic acid**.

Question27

Identify thermoplastic polymer from following.

MHT CET 2025 20th April Morning Shift

Options:

A. Polyvinyl

B. Bakelite

C. Terylene

D. Neoprene

Answer: A

Solution:

Option A: Polyvinyl is the thermoplastic polymer.

Explanation:

- **Thermoplastic Polymers**: These polymers can be softened on heating and can be remoulded. Their intermolecular forces are intermediate.
- **Thermosetting Polymers**: These polymers, once set, cannot be remelted or reshaped.

Let's examine each option:

1. **Polyvinyl (Polyvinyl Chloride or PVC)**

- This is a thermoplastic polymer.

1. **Bakelite**

- This is a thermosetting polymer (cannot be softened on heating).

1. **Terylene**

- This is a polyester, also thermosetting.

1. **Neoprene**

- This is an elastomer, not a typical thermoplastic.

Correct answer:

Polyvinyl (Option A)

Question28

Which from following polymers is obtained by condensation polymerisation method?

MHT CET 2025 19th April Evening Shift

Options:

A. Polythene

B. Nylon 6,6

C. Polyacrylonitrile

D. Teflon

Answer: B

Solution:

Option B: **Nylon 6,6** is obtained by condensation polymerisation.

Explanation (as per NCERT):

1. **Condensation polymerisation** is a process where monomers join together with the elimination of small molecules like water, HCl, etc.
2. **Nylon 6,6** is formed by the condensation polymerisation of hexamethylenediamine and adipic acid. In this process, water molecules are eliminated.

   The reaction is:

   n Hexamethylenediamine $+ n$ Adipic acid $\longrightarrow [-NH-(CH_2)_6-NH-CO-(CH_2)_4-CO-]_n + 2n\ H_2O$
3. The other options:

- **Polythene (Option A):** Formed by *addition polymerisation* of ethene.
- **Polyacrylonitrile (Option C):** Also formed by *addition polymerisation* of acrylonitrile.
- **Teflon (Option D):** Formed by *addition polymerisation* of tetrafluoroethylene.

Final Answer:

Option B: Nylon 6,6 is obtained by condensation polymerisation.

Question29

Which from following polymers is classified as fibre?

MHT CET 2025 19th April Evening Shift

Options:

A. Nylon 6,6

B. Urea formaldehyde resin

C. Polystyrene

D. Neoprene

Answer: A

Solution:

The correct answer is:

Option A: Nylon 6,6

Step-by-step explanation:

1. **Fibre Classification:**

- Fibres are polymers that have strong intermolecular forces (such as hydrogen bonds) and can be drawn into long threads or filaments.
- These are used in making fabrics and textiles.

1. **Let's look at each option:**

- **Nylon 6,6**: This is a synthetic polymer known as a polyamide. It is strong, elastic, and can be spun into fibres. **It is classified as a fibre.**
- **Urea formaldehyde resin**: This is a thermosetting resin, used mainly for making adhesives and moulded objects, **not a fibre**.
- **Polystyrene**: This is a thermoplastic polymer, commonly used for making plastic cups and packaging, **not a fibre**.
- **Neoprene**: This is a synthetic rubber (used for making wetsuits, etc.), **not a fibre**.

1. **NCERT Reference:**

   According to NCERT, important types of polymers classified as fibres include polyamides (like Nylon 6,6) and polyesters.

Therefore, the correct answer is:

Option A: Nylon 6,6

Question30

Which from following polymers needs peroxide as initiator for preparation?

MHT CET 2025 19th April Morning Shift

Options:

A. Nylon 6,6

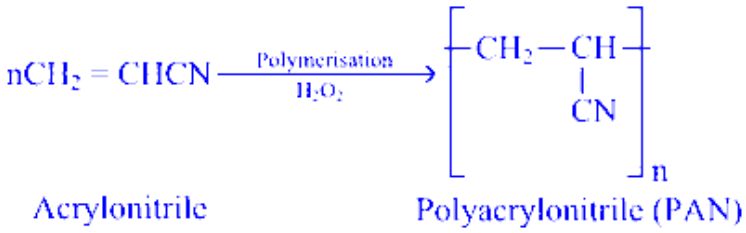
B. Polyacrylonitrile

C. Terylene

D. Bakelite

Answer: B

Solution:



Question31

Which from following polymers is obtained by addition polymerisation method?.

MHT CET 2025 19th April Morning Shift

Options:

A. Nylon 6

B. Terylene

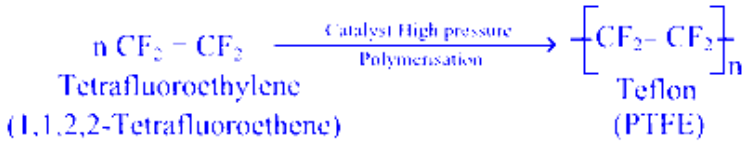
C. Nylon 6,6

D. Teflon

Answer: D

Solution:

The addition polymerisation of tetrafluoroethen? with a free radical or persulphate catalyst at high pressure leads to the formation of Teflon.



Question32

Which from following polymers is classified as fibres?

MHT CET 2024 16th May Evening Shift

Options:

A. Polyesters

B. Vulcanized rubber

C. Polythene

D. Polyvinyls

Answer: A

Solution:

Polyesters are classified as fibers. These polymers are commonly used to make textile fibers due to their durability and ability to be woven into fabrics. Polyesters have ester functional groups in their main chain, and they are known for their strength, wrinkle resistance, and rapid drying properties, making them ideal for clothing and other fabric applications.

Option A: Polyesters - Used as fibers.

Option B: Vulcanized rubber - Not a fiber; it is a type of elastomer used for durable items such as tires and gaskets.

Option C: Polythene - Not a fiber; it is a plastic used in packaging and containers.

Option D: Polyvinyls - Generally not used as fibers; these are used in a variety of forms such as films and pipes.

Therefore, the correct classification for fibers is polyesters.

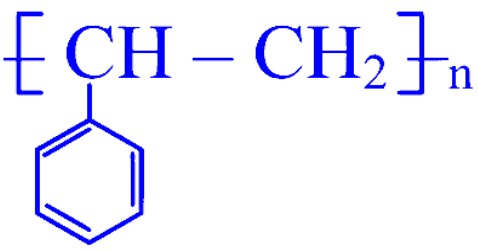
Question33

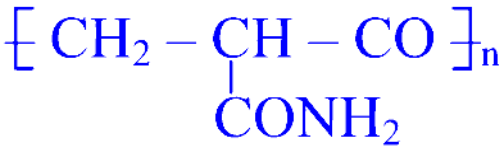
Which from following polymers is a urea-formaldehyde resin?

MHT CET 2024 16th May Evening Shift

Options:

A. $\left[NH - CO - NH - CH_2 \right]_n$

B. 

C. 

D. 

Answer: A

Solution:

Question34

Which of the following polymers need $HO-CH_2-CH_2-OH$ as one of the monomers for its preparation?

MHT CET 2024 16th May Morning Shift

Options:

A. Nylon 6,6

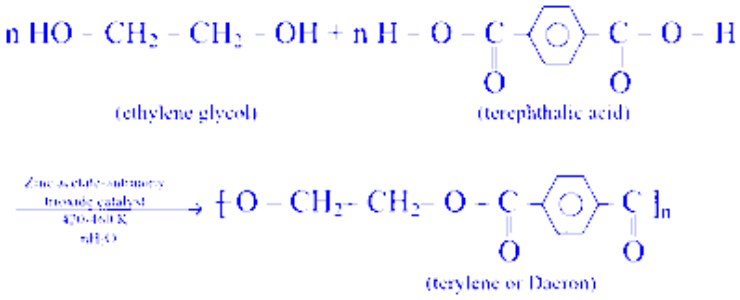
B. Dacron

C. Polyacrylamide

D. Buna- N

Answer: B

Solution:



Question35

Which from following polymers is used as substitute for wool?

MHT CET 2024 16th May Morning Shift

Options:

A. Teflon

B. LDP

C. Dacron

D. Polyacrylonitrile

Answer: D

Solution:

Polyacrylonitrile is used as a substitute for wool. It is a synthetic polymer, also known under the trade name "Orlon" or "Acrilan." It exhibits warmth and soft texture properties resembling those of wool, making it a suitable alternative.

Question36

Which from following is semisynthetic polymer?

MHT CET 2024 15th May Evening Shift

Options:

A. Dacron

B. Nylon 6

C. Wool

D. Cellulose nitrate

Answer: D

Solution:

Answer: Option D (Cellulose nitrate)

Explanation:

Polymers are classified into three main categories:

Natural Polymers: These occur naturally and include substances like wool, silk, and natural rubber.

Synthetic Polymers: These are entirely man-made through chemical processes and include materials like nylon, polyester (Dacron), polystyrene, etc.

Semisynthetic Polymers: These are derived by chemically modifying natural polymers. The modification introduces new properties while retaining some structure from the natural source.

Dacron (Polyethylene terephthalate) is a fully synthetic polyester.

Nylon 6 is a completely synthetic polyamide.

Wool is a natural protein-based fiber obtained from animals (sheep).

Cellulose nitrate is obtained by treating natural cellulose (from plants) with nitric acid. This process converts the naturally occurring cellulose into a modified polymer, making it a semisynthetic polymer. Therefore, cellulose nitrate is the correct answer.

Question37

Identify the polymer used to obtain disposable cups and plates.

MHT CET 2024 15th May Evening Shift

Options:

A. LDPE

B. Polypropylene

C. HDPE

D. Polystyrene

Answer: D

Solution:

Disposable cups and plates are often made from **polystyrene**.

Polystyrene is a versatile, lightweight plastic polymer that is commonly used in food service products due to its ease of molding and cost-effectiveness. It's particularly favored for disposable items because it can be easily shaped and offers good insulation properties, making it suitable for both hot and cold beverages.

Polystyrene comes in two main forms:

Solid form: Used for products like clear plastic cups and utensils.

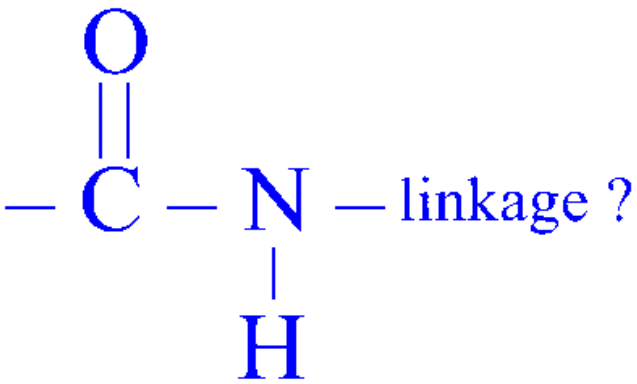
Foamed form (expanded polystyrene, EPS): Used for items such as foam cups, plates, and food containers, offering better thermal insulation and cushioning.

Thus, the correct choice is:

Option D: Polystyrene

Question38

Which of following polymer does not contain



MHT CET 2024 15th May Evening Shift

Options:

A. PAN

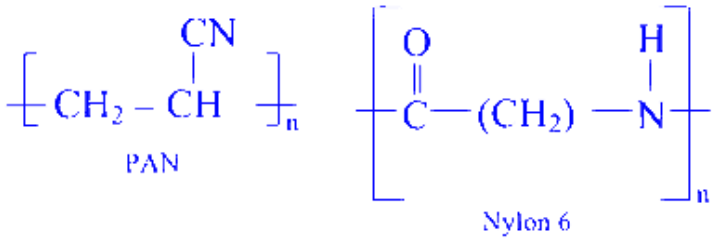
B. Nylon 6

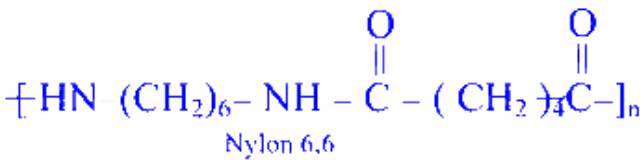
C. Nylon 6,6

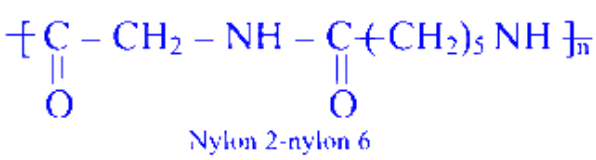
D. Nylon 2,6

Answer: A

Solution:







Question39

Identify the monomer used to obtain a polymer that resembles the wool.

MHT CET 2024 15th May Morning Shift

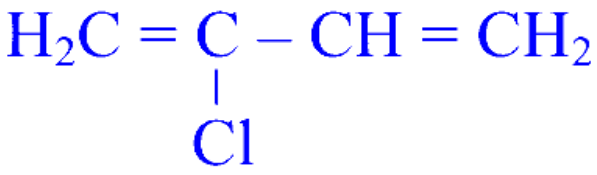
Options:

A. $CH_2 = CHCN$

B. $F_2C = CF_2$

C. $H_2C = CHCl$

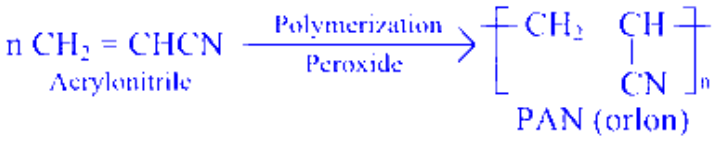
D.



Answer: A

Solution:

Orlon or polyacrylonitrile (PAN) resembles wool and is used as a wool substitute.



Question40

Which from following polymers (trade name) is used to obtain paints?

MHT CET 2024 15th May Morning Shift

Options:

A. Glyptal

B. Polycarbonate

C. Perspexe

D. PVC

Answer: A

Solution:

Glyptal is an alkyd resin (a polyester resin modified by the addition of fatty acids) commonly used in the production of **paints**, lacquers, and related coatings. Hence, among the options given, **Glyptal** is the polymer (trade name) used to obtain paints.

Answer: (A) Glyptal

Question41

Which among following polymers is used to manufacture water pipes?

MHT CET 2024 11th May Evening Shift

Options:

A. Polycarbonate

B. PVC

C. Buna-N

D. Polyacrylamide

Answer: B

Solution:

Option B: PVC

Polyvinyl Chloride (PVC) is a widely used plastic for manufacturing water pipes. PVC pipes are durable, resistant to corrosion, lightweight, and economical, making them ideal for plumbing and water distribution systems.

PVC polymers are made from the polymerization of vinyl chloride monomer (VCM). This process creates a polymer chain, making PVC one of the most versatile plastics. Its chemical resistance and ability to withstand a range of temperatures and pressures contribute to its suitability for water pipelines.

In contrast:

Polycarbonate: Often used for its toughness and clarity in applications like eyewear lenses and DVDs, not typically for water pipes.

Buna-N: A synthetic rubber, also known as nitrile rubber, often used for gaskets and seals but not for water pipes.

Polyacrylamide: Usually used in applications like water treatment and soil conditioning, not typically for making pipes.

Therefore, for water pipe manufacturing, **PVC** remains the preferred choice due to its excellent properties and performance in plumbing applications.

Question42

Which from following polymers contain - CO - NH - linkage in it?

MHT CET 2024 11th May Evening Shift

Options:

A. Urea formaldehyde resin

B. Glyptal

C. Polycarbonate

D. Thermacol

Answer: A

Solution:

Urea-formaldehyde resin:

Question43

Which from following polymer contains este linkage?

MHT CET 2024 11th May Morning Shift

Options:

A. Nylon 6

B. Polyacrylonitrile

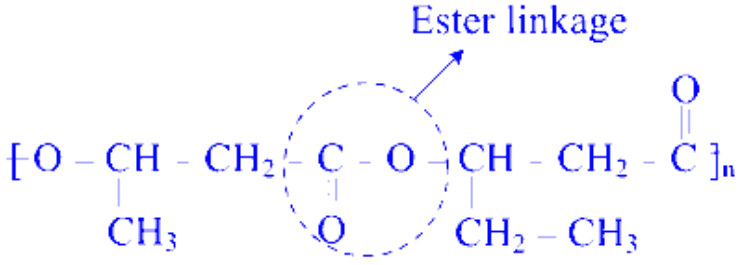
C. Teflon

D. PHBV

Answer: D

Solution:

PHBV contains ester linkage.



Question44

Which from following polymers needs dihydric alcohol and aromatic dicarboxylic acid for its synthesis?

MHT CET 2024 11th May Morning Shift

Options:

A. Nylon 6

B. Dacron

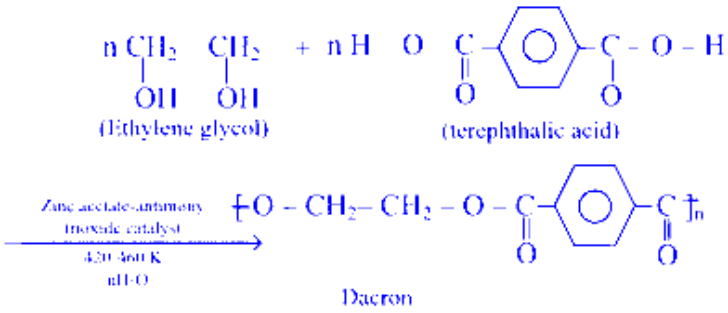
C. Bakelite

D. Polyacrylamide

Answer: B

Solution:

Dacron is obtained by condensation polymerization of ethylene glycol and terephthalic acid in presence of catalyst at high temperature.



Question45

Which from following statements is NOT correct about thermoplastic polymers?

MHT CET 2024 10th May Evening Shift

Options:

A. These are softened on heating.

B. Intermolecular forces involved in these are moderately strong intermediate between elastomers and fibres.

C. These possess extensive cross linking by covalent bonds.

D. These are easily moulded.

Answer: C

Solution:

Option C is NOT correct about thermoplastic polymers.

Thermoplastic polymers are characterized by their ability to soften upon heating and harden upon cooling. This process is reversible and allows them to be easily moulded, making them highly versatile in manufacturing. They do not possess extensive cross-linking by covalent bonds; rather, they have linear or slightly branched structures that allow the polymer chains to slide past each other when heated. Therefore, they are not permanently set into a particular shape, unlike thermosetting polymers which do have extensive cross-linking, providing a rigid and inflexible structure.

Question46

Identify a polymer obtained from β-hydroxybutyric acid and β-hydroxyvaleric acid.

MHT CET 2024 10th May Morning Shift

Options:

A. PHBV

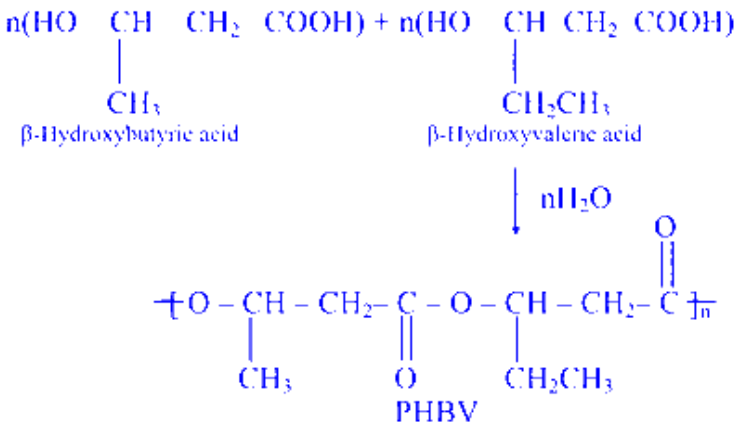
B. Nylon 2-nylon 6

C. Buna-N

D. Thermocol

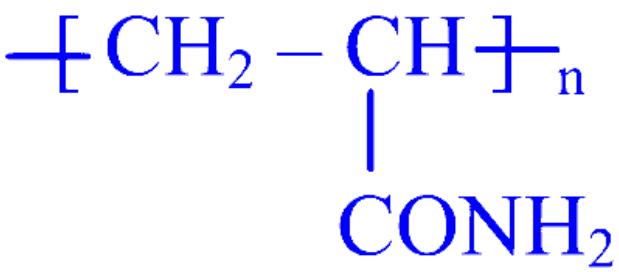
Answer: A

Solution:



Question47

Which from following monomers is used to obtain polymer represented as



MHT CET 2024 10th May Morning Shift

Options:

A. Acrylamide

B. Urea and Formaldehyde

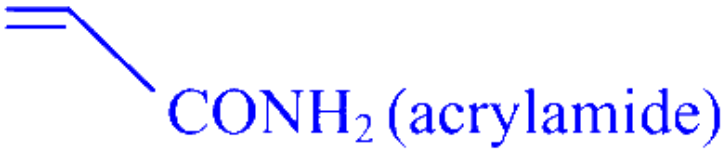
C. Bisphenol

D. Methylmethacrylate

Answer: A

Solution:

Polyacrylamide is obtained from monomer



Question48

Which from following polymers is believed to leach human carcinogen in to food when used as household plastic?

MHT CET 2024 9th May Evening Shift

Options:

A. LDPE

B. PP

C. PS

D. PET

Answer: C

Solution:

Option C: PS (Polystyrene)

Polystyrene (PS) is believed to leach a human carcinogen known as styrene into food when used as household plastic. Styrene is a chemical that can migrate from the containers into food, particularly when these containers are heated or used with fatty or acidic foods. The concern over styrene arises from studies that suggest it can have carcinogenic effects, as classified by environmental health organizations.

Polystyrene is commonly found in disposable coffee cups, food containers, and plastic utensils. To minimize exposure, it is advisable to avoid heating foods in polystyrene containers and to consider alternative materials for food storage and consumption, such as glass or stainless steel.

Question49

Which from following polymers is grouped under elastomers?

MHT CET 2024 9th May Evening Shift

Options:

A. Buna-S

B. Nylon 6,6

C. Terylene

D. Polythene

Answer: A

Solution:

Elastomers are polymers that possess elastomeric properties, meaning they can be stretched extensively and return to their original shape once the stress is released. Among the options provided, Option A, **Buna-S**, is grouped under elastomers.

Buna-S, also known as Styrene-Butadiene Rubber (SBR), is a synthetic rubber commonly used in the production of automobile tires, conveyor belts, rubber mats, and other flexible products where durable elasticity is required. It is created through the copolymerization of styrene and butadiene, giving it enhanced abrasion resistance and good aging properties compared to natural rubber.

In contrast, the other options do not fall under elastomers:

Nylon 6,6 (Option B) is a polyamide, which is a type of synthetic polymer known for its strength and thermal resistance. It is commonly used in textiles, engineering plastics, and automotive components.

Terylene (Option C), also known as polyester, is primarily used in the textile industry to make fabrics. It is not considered an elastomer because it does not exhibit the stretchy, elastic characteristics typical of elastomers.

Polythene (Option D), or polyethylene, is a widely used plastic found in products like plastic bags, bottles, and toys. While it has some flexibility, it lacks the significant elasticity and resilience found in elastomers.

In summary, only Buna-S from the given list qualifies as an elastomer.

Question50

Identify the polymer used to obtain LCD screen from following.

MHT CET 2024 9th May Evening Shift

Options:

A. Polyacrylamide

B. Buna-N

C. Polycarbonate

D. Perspex

Answer: C

Solution:

Polyacrylamide: Primarily used in water treatment, gel electrophoresis in laboratories, and in some cosmetic formulations. It is not commonly associated with LCD (Liquid Crystal Display) technology.

Buna-N (Nitrile Rubber): A synthetic rubber commonly used in seals, hoses, and gaskets due to its oil and chemical resistance. It has no direct application in the manufacture of LCD screens.

Polycarbonate: A transparent and durable thermoplastic commonly used in optical components due to its excellent clarity and impact resistance. Polycarbonates are known for their use in eyeglass lenses, CDs, DVDs, and are also commonly used as a substrate material in LCD screens.

Perspex (Polymethyl Methacrylate, PMMA): A transparent thermoplastic often used as a lightweight, shatter-resistant alternative to glass. While it is used in display cases and sometimes as a cover material, it's not the primary polymer used for the internal structure of LCD screens.

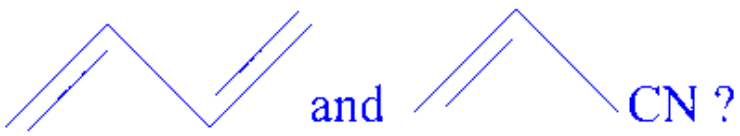
Most Relevant Polymer for LCD Screens:

Among the given options, **polycarbonate** is well-known for its optical clarity, durability, and use in various optical applications, including LCD screens. It is often the preferred choice for creating the protective and structural layers of LCD displays.

Final Answer: The polymer used to obtain LCD screens from the given options is **Polycarbonate (Option C)**.

Question51

Which polymer is obtained from monomers using



MHT CET 2024 9th May Morning Shift

Options:

A. Polycarbonate

B. Polyacrylamide

C. Buna-N

D. Acrylic glass

Answer: C

Solution:

Buna-N is a copolymer formed from monomers using butadiene and acrylonitrile.

Question52

Identify biodegradable polymer from following.

MHT CET 2024 9th May Morning Shift

Options:

A. Teflon

B. PHBV

C. LDP

D. Polyacrylonitrile

Answer: B

Solution:

Option B: PHBV

PHBV, short for Poly(3-hydroxybutyrate-co-3-hydroxyvalerate), is a biodegradable polymer. It is derived from microbial fermentation processes and belongs to the class of polyhydroxyalkanoates (PHAs). PHBV degrades into carbon dioxide and water under the action of microorganisms, making it an environmentally friendly alternative to traditional plastics.

Explanation

Teflon (Option A) is a non-biodegradable polymer known for its non-stick properties and chemical resistance. It is structurally a polymer of tetrafluoroethylene and is used in applications like non-stick cookware coatings.

LDP (Option C), or Low-Density Polyethylene, is a type of polyethylene made from the polymerization of ethylene. It is non-biodegradable and commonly used in packaging films, containers, and various household products.

Polyacrylonitrile (Option D) is a non-biodegradable polymer used primarily in the production of acrylic fibers, resins, and carbon fiber precursors. It is characterized by its high strength and thermal resistance.

PHBV, as a biodegradable polymer, is utilized in medical applications, packaging, and agricultural materials, providing an eco-friendly alternative to more persistent plastic materials.

Question53

Identify thermoplastic polymer from following.

MHT CET 2024 4th May Evening Shift

Options:

A. Urea formaldehyde resin

B. Bakelite

C. Polythene

D. Buna-N

Answer: C

Solution:

Polythene (Option C) is a thermoplastic polymer. Thermoplastics are materials that become pliable or moldable above a specific temperature and solidify upon cooling. They can be remelted and remolded multiple times without losing their chemical properties. Polythene, commonly known as polyethylene, is widely used in applications like packaging films, containers, and insulation for cables due to its flexibility, strength, and recyclability.

Urea formaldehyde resin (Option A) and Bakelite (Option B) are examples of thermosetting polymers, which harden permanently after being heated and cannot be remolded. Buna-N (Option D) is a synthetic rubber, not a thermoplastic.

Question54

Which from following is a copolymer?

MHT CET 2024 4th May Evening Shift

Options:

A. Nylon 6

B. Nylon 6,6

C. Polythene

D. Buna -S

Answer: D

Solution:

Buna-S is a copolymer. A copolymer is a polymer derived from more than one species of monomer.

Buna-S is made by polymerizing butadiene and styrene, hence it is a copolymer. It is widely used in the production of synthetic rubbers.

Nylon 6 is a polyamide made from a single monomer, caprolactam, so it is a homopolymer.

Nylon 6,6 is also a polyamide, formed from two types of monomers: hexamethylene diamine and adipic acid, making it a copolymer. However, in conventional general tests, Buna-S is typically used as the representative choice for copolymers.

Polythene (polyethylene) is derived from the polymerization of ethylene monomers, making it a homopolymer.

Thus, the correct answer is **Option D: Buna-S**.

Question55

Which from following statements about neoprene is false?

MHT CET 2024 4th May Morning Shift

Options:

A. It is a copolymer and polymerization occurs in presence of MgO .

B. It is a synthetic rubber.

C. It is used to prepare hose pipes for transport of gasoline.

D. The monomer involved in its preparation is unsaturated.

Answer: A

Solution:

The false statement about neoprene is:

Option A: It is a copolymer and polymerization occurs in presence of MgO.

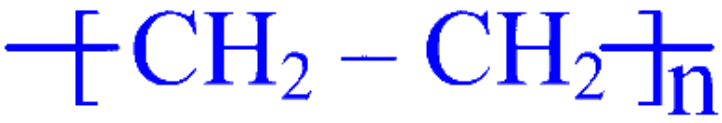
Neoprene is actually a homopolymer made from the monomer chloroprene, and although magnesium oxide (MgO) can be used as a stabilizer during the vulcanization process, it is not involved directly in the polymerization process. Neoprene is synthesized through the polymerization of chloroprene (2-chlorobuta-1,3-diene) using emulsion polymerization methods.

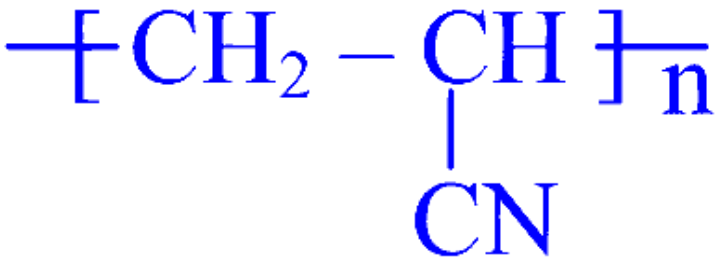
Question56

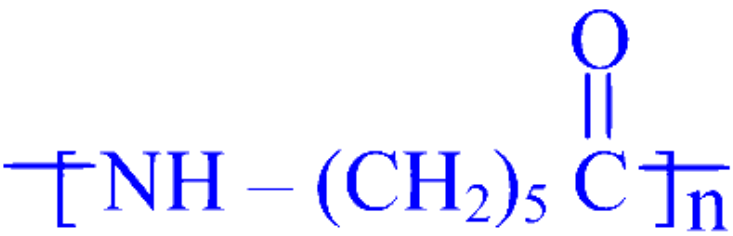
Which from following polymers is not obtained by addition polymerisation method?

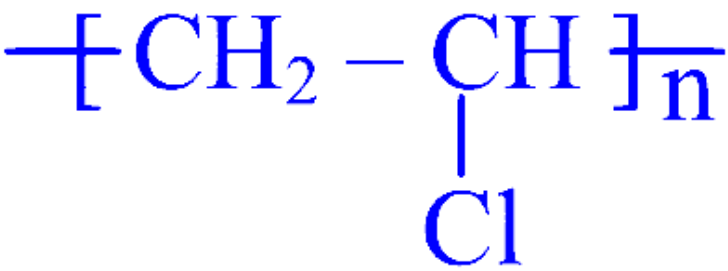
MHT CET 2024 4th May Morning Shift

Options:

A. 

B. 

C. 

D. 

Answer: C

Solution:

Nylon-6 is obtained by condensation polymerization with a loss of a water molecule.

Question57

Which from following is NOT true about natural rubber?

MHT CET 2024 3rd May Evening Shift

Options:

A. It is formed by addition polymerization.

B. It is a linear polymer.

C. It has cis configuration of $C = C$.

D. It contains butadine and styrene as monomer units.

Answer: D

Solution:

Natural rubber is primarily composed of **cis-1,4-polyisoprene**, which is formed by addition polymerization of the monomer **isoprene** $\left(2\text{-methyl-1,3-butadiene}\right)$. It has a **linear** structure and **cis** configuration about its double bonds.

Among the statements given:

(A) "It is formed by addition polymerization." — **True** for natural rubber.

(B) "It is a linear polymer." — **True** for natural rubber.

(C) "It has cis configuration of $C = C$." — **True** for natural rubber.

(D) "It contains butadiene and styrene as monomer units." — **Not true** for natural rubber; that describes **SBR (styrene-butadiene rubber)**, a synthetic rubber.

Hence, the statement that is **NOT true** about natural rubber is :

(D) It contains butadiene and styrene as monomer units.

Question58

Identify homopolymer from following.

MHT CET 2024 3rd May Morning Shift

Options:

A. Polycarbonate

B. Buna-N

C. Glyptal

D. Thermocol

Answer: D

Solution:

Option D: Thermocol

Thermocol, also known as expanded polystyrene (EPS), is a homopolymer. A homopolymer is a polymer that is composed of only one type of monomer unit repeated throughout its structure. In the case of thermocol, the repeating unit is the styrene monomer. When polymerized, styrene forms a long chain known as polystyrene, which is used in a variety of applications, including packaging materials like thermocol.

Here's a brief description of each option to clarify why the others are not homopolymers:

Polycarbonate (Option A): Polycarbonate is a copolymer commonly made from bisphenol A and phosgene, thus it's not a homopolymer.

Buna-N (Option B): Buna-N, also known as nitrile rubber, is a copolymer made from butadiene and acrylonitrile.

Glyptal (Option C): Glyptal is a copolymer derived from reaction between glycerol and phthalic anhydride, classifying it as a copolymer.

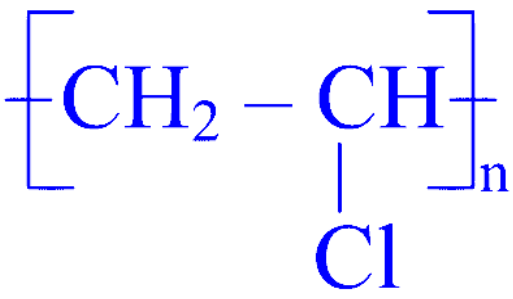
Therefore, thermocol stands out as the homopolymer among the options, being composed of repeating styrene units.

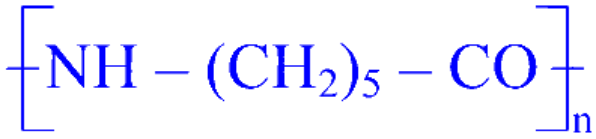
Question59

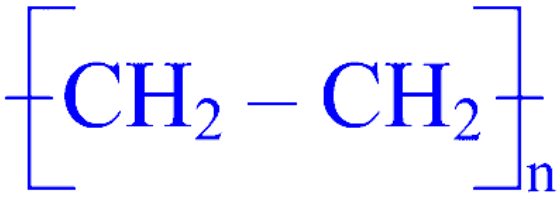
Which from following polymers is obtained by ring opening polymerization method?

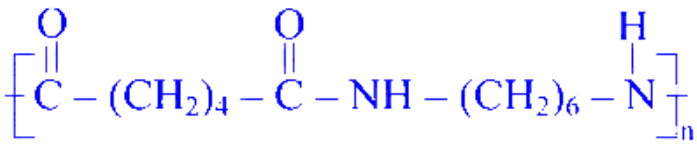
MHT CET 2024 3rd May Morning Shift

Options:

A. 

B. 

C. 

D. 

Answer: B

Solution:

Ring opening polymerisation involves addition of monomers (cyclic compounds) to growing chain molecules without elimination of small molecules like H_2O, CH_3OH, etc. E.g. e-caprolactum.

Question60

Which form following is a use of polyester fibres?

MHT CET 2024 2nd May Evening Shift

Options:

A. Making bristles of brushes.

B. To obtain orlon.

C. To obtain electric insulators.

D. To obtain terywool.

Answer: D

Solution:

Polyester fibers are commonly used in the following applications:

Option A

Making bristles of brushes: Incorrect. Polyester fibers are generally not used for making bristles of brushes; instead, materials like nylon are more frequently used for this purpose.

Option B

To obtain orlon: Incorrect. Orlon is a brand name for a type of acrylic fiber, not polyester.

Option C

To obtain electric insulators: Incorrect. Polyester fibers are not typically used to make electric insulators; other materials like rubber or specific polymers are more suitable for insulation purposes.

Option D

To obtain terywool: Correct. Polyester fibers are often blended with wool to produce fabrics known as Terywool, which is a blend that combines the qualities of both polyester and wool. This makes the fabric more durable, wrinkle-resistant, and suitable for various clothing applications.

Thus, the correct use of polyester fibers from the given options is **Option D: To obtain terywool**.

Question61

Identify thermosetting polymer from following.

MHT CET 2024 2nd May Evening Shift

Options:

A. Urea formaldehyde resin

B. Polystyrene

C. Polyesters

D. Polyamides

Answer: A

Solution:

Urea formaldehyde resin is a thermosetting polymer.

Thermosetting polymers, also known as thermosets, are polymers that irreversibly cure into a solid state when exposed to heat or chemical agents. The curing process forms a network of crosslinks between the polymer chains, giving thermosets their distinctive properties. This crosslinking makes them rigid, heat resistant, and durable, but also means they cannot be remolded or melted after curing.

Explanation of Options:

Option A: Urea formaldehyde resin - This is a common thermosetting polymer used in adhesives, finishes, and molded objects. During the curing process, the material forms a rigid three-dimensional network.

Option B: Polystyrene - This is a thermoplastic polymer, meaning it can be repeatedly melted and reshaped. It is not a thermoset.

Option C: Polyesters - Depending on the type, polyesters can be thermosetting (like in fiber-reinforced composites) or thermoplastic. However, without specific context, they usually refer to thermoplastic types for general purposes.

Option D: Polyamides - These are usually thermoplastics, such as nylon. Like polyesters, they can be thermosetting in specific composite forms, but generally, they are considered thermoplastics.

Thermosetting polymers are favored for applications requiring materials that maintain structural integrity and resist deformation under heat.

Question62

Which among the following polymers is obtained by ring opening polymerization process?

MHT CET 2024 2nd May Morning Shift

Options:

A. Polyacrylonitrile

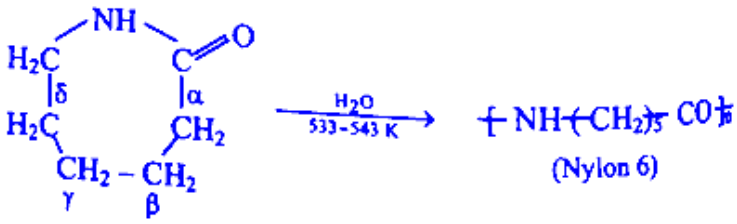
B. Nylon 6,6

C. Nylon 6

D. Terylene

Answer: C

Solution:



∈-Caprolactam (n molecules)

Question63

Identify the monomers used for preparation of Buna-S.

MHT CET 2024 2nd May Morning Shift

Options:

A. Phenol and formaldehyde

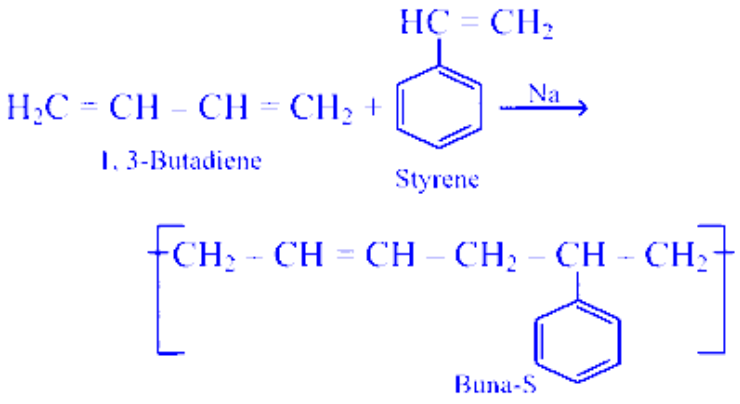
B. 1,3-butadiene and styrene

C. Ethylene glycol and styrene

D. β-hydroxy butyric acid and phenol

Answer: B

Solution:



Question64

Which from following polymers is classified fibres depending on inter molecular forces?

MHT CET 2023 14th May Evening Shift

Options:

A. Vulcanized rubber

B. Buna-S

C. Terylene

D. Polystyrene

Answer: C

Solution:

The classification of polymers into fibres is typically based on their ability to form long chains that exhibit strong intermolecular forces like hydrogen bonding, van der Waals forces, and dipole-dipole interactions. These forces must be strong enough to hold the chains together tightly, allowing the material to be drawn into fibers that are both strong and flexible.

- **Vulcanized rubber (Option A)**: Vulcanized rubber is not classified as a fibre. It is a thermoset elastomer, made by adding sulfur to raw rubber which creates cross-linked polymer chains. The resulting material is elastic and resilient, ideal for products like tires and other elastic materials, but not for fibers.
- **Buna-S (Option B)**: Also known as styrene-butadiene rubber, is a copolymer made up of styrene and butadiene. It has good abrasion resistance and is used for items like shoe soles and car tires. However, it does not form fibers and is not classified as a fibrous polymer.
- **Terylene (Option C)**: Terylene, also known as polyester or polyethylene terephthalate (PET), is a polymer that has strong intermolecular forces due to its aromatic rings and ester linkages. These forces allow the molecules to align closely with each other, thereby forming fibers. Hence, Terylene is classified as a fibre and is used in textiles, recording tapes, and other products requiring material in fiber form.
- **Polystyrene (Option D)**: Polystyrene is a thermoplastic polymer with a structure unsuitable for fiber formation. It is commonly used in products like foam packaging, disposable cups, and insulating material. It is not characterized by the same degree of intermolecular forces seen in fibrous materials.

Therefore, the correct answer to the question is **Option C, Terylene**, which is classified as a fiber due to its strong intermolecular forces allowing it to be drawn into fibers.

Question65

Identify the use of HDP from following.

MHT CET 2023 14th May Evening Shift

Options:

A. Insulation of electric cables

B. Manufacture of toys

C. Submarine cable insulation

D. Producing extruded films

Answer: B

Solution:

The correct answer is **B) Manufacture of toys**. Here's why:

- **HDP (High-Density Polyethylene):** HDP is a rigid, strong, and versatile plastic with a wide range of applications.

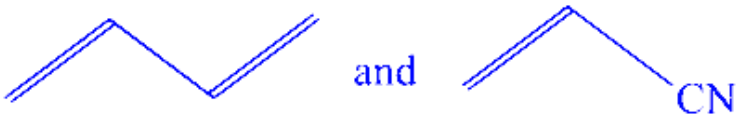
Let's analyze each option:

- **A) Insulation of electric cables:** LDPE (Low-Density Polyethylene) is more commonly used for electrical insulation due to its flexibility and electrical properties.
- **B) Manufacture of toys:** HDP is perfect for toys because of its durability, chemical resistance, and ability to be molded into various shapes.
- **C) Submarine cable insulation:** Submarine cables require specialized materials with extreme durability and water resistance. HDP is not typically used for this purpose.
- **D) Producing extruded films:** While HDP can be used for film extrusion, it is not the most common choice compared to other types of polyethylene.

Key Point: HDP's properties make it ideal for manufacturing toys that need to withstand rough handling and maintain their shape.

Question66

Identify the polymer obtained from



MHT CET 2023 14th May Morning Shift

Options:

A. Polyacrylamide

B. Buna N

C. Glyptal

D. Perspex

Answer: B

Solution:

The monomers shown are **1,3-butadiene** and **acrylonitrile (CH_2=CH–CN)** . Their copolymer is **nitrile rubber** , commonly called **Buna-N** .

✅ **Answer: B) Buna N**

Question67

Which from following polymers is used to obtain plastic dinner ware?

MHT CET 2023 14th May Morning Shift

Options:

A. Backelite

B. Teflon

C. Melamine-formaldehyde

D. Polyacrylonitrile

Answer: C

Solution:

Out of the options provided for polymers used to obtain plastic dinnerware, the correct answer is:

Option C: Melamine-formaldehyde

Melamine-formaldehyde resin is a type of plastic known for its durability and heat resistance, making it particularly suitable for use in the manufacturing of dinnerware such as plates, bowls, and utensils. This kind of plastic does not

easily get scratched and is also resistant to stains, which adds to its suitability for dinnerware that undergoes frequent use and washing.

Here's a brief overview of the options to understand why the others are not used for plastic dinnerware:

- **Option A: Bakelite -** Bakelite is a phenol-formaldehyde resin, which is known for being one of the first synthetic plastics. It is heat resistant and has been used for a variety of applications including electrical insulators and radio and telephone casings. However, it is not typically used for dinnerware.
- **Option B: Teflon -** Teflon is the brand name for a polymer known as polytetrafluoroethylene (PTFE). It is best known for its non-stick properties, which is why it is often used to coat cookware. Teflon itself isn't used to make dinnerware items like plates and cups.
- **Option D: Polyacrylonitrile -** Polyacrylonitrile is a synthetic, semicrystalline organic polymer resin, used primarily to make fibers. It is not commonly used in the production of dinnerware.

As such, melamine-formaldehyde resin is the correct choice for a polymer used in the manufacture of plastic dinnerware.

Question68

Which of the following statements is NOT true about polymorphism?

MHT CET 2023 13th May Evening Shift

Options:

A. The existence of substance in more than one crystalline form.

B. Polymorphism occuring in element is called allotropy.

C. Polymorphic forms of a substance are formed under different conditions.

D. The crystal shape of polymorphic substances is identical to each other.

Answer: D

Solution:

The concept of polymorphism in chemistry refers to the ability of a substance to exist in more than one form or crystal structure. Allotropy is a specific type of polymorphism that occurs in elements rather than compounds. Polymorphic forms emerge under varying conditions such as temperature and pressure, and each form is distinct in its intermolecular arrangement. However, polymorphic substances do not have an identical crystal shape, which is what distinguishes the different forms. Therefore, the statement that 'The crystal shape of polymorphic substances is identical to each other' is not true about polymorphism.

Question69

Which among the following is an example of branched chain polymer?

MHT CET 2023 13th May Evening Shift

Options:

A. High density polythene

B. Low density polythene

C. Bakelite

D. Melamine

Answer: B

Solution:

Among the given options, low density polythene (LDP) is an example of branched chain polymer. It is obtained by the polymerisation of ethene under high pressure of 1000 to 2000 atm at a temperature of 350 to 570 K in presence of traces dioxygen or peroxide catalyst.

Question70

Identify the monomers used to prepare novolac.

MHT CET 2023 13th May Evening Shift

Options:

A. Isoprene

B. 1,3-butadiene

C. Phenol and formaldehyde

D. Melamine

Answer: C

Solution:

Monomers of novolac are phenol andformaldehyde. Novolac is obtained by condensation reaction of monomers in the presence of an acid or base as a catalyst.

Question71

Which from following statements is NOT true about natural rubber?

MHT CET 2023 13th May Morning Shift

Options:

A. It is a linear polymer.

B. In this polymer chain has coiled structure.

C. In this polymer chains are held together by weak van der Waals forces.

D. It is obtained from chloroprene.

Answer: D

Solution:

Natural rubber is a high molecular mass linear polymer of isoprene. It consists of various chains held together by weak van der Waals forces and has coiled structure.

Question72

Identify the monomer used to prepare Teflon.

MHT CET 2023 13th May Morning Shift

Options:

A. C_2H_4

B. C_2H_3N

C. $CONH_2$ and CH_2O

D. C_2F_4

Answer: D

Solution:

The monomer used in the preparation of teflon is tetrafluoroethylene, $(CF_2 = CF_2)$.

Question73

Which among the following statements is NOT true for LDP?

MHT CET 2023 12th May Evening Shift

Options:

A. It needs O_2 or peroxide as initiator synthesis process.

B. It is a branched chain polymer.

C. It needs low pressure about 6-7 atm in synthesis process.

D. It has low melting point than HDP.

Answer: C

Solution:

LDP is prepared by polymerization of ethylene under high pressure $(1000 - 2000\ \text{atm})$ and temperature $(350 - 570\ \text{K})$ in presence of traces of O_2 or peroxide as initiator.

Question74

Which from following polymers is grouped in the category of elastomers?

MHT CET 2023 12th May Evening Shift

Options:

A. Neoprene

B. Terylene

C. Polystyrene

D. Bakelite

Answer: A

Solution:

Elastomers are a type of polymer that exhibit rubber-like elasticity, meaning they can be stretched to significant extents and yet return to their original shape upon release of the stress. Among the options provided, Neoprene is categorized as an elastomer.

Option A: Neoprene - Neoprene, also known as polychloroprene, is indeed an elastomer. It is synthetically produced and displays good chemical stability and maintains flexibility over a wide temperature range. Because of these properties, it is used in a variety of applications, such as in wetsuits, hoses, and as a material for sealants and adhesives.

Option B: Terylene - Terylene, which is better known as Polyester or specifically polyethylene terephthalate (PET), is not an elastomer but rather a thermoplastic polyester. It is used for making fibers for clothing, containers for liquids and foods, and in thermoforming applications.

Option C: Polystyrene - Polystyrene is a thermoplastic polymer, not an elastomer. It is hard and brittle and is commonly used in products like disposable cutlery, plastic models, CD and DVD cases, and in packaging.

Option D: Bakelite - Bakelite is a thermosetting phenol-formaldehyde resin, not an elastomer. It is one of the first synthetic plastics and is known for its electrical nonconductivity and heat-resistant properties, which make it suitable for use in electrical insulators and early plastic ware.

Therefore, the correct answer is Option A: Neoprene.

Question75

Which from following polymers is used to obtain tyre cords?

MHT CET 2023 12th May Morning Shift

Options:

A. Nylon 6

B. Polyacrylonitrile

C. Bakelite

D. Terylene

Answer: A

Solution:

Nylon 6 is the polymer commonly used in the production of tire cords. Tire cords are a crucial component of tire manufacturing, providing the necessary strength and durability. Nylon 6, known for its high tensile strength, abrasion resistance, and durability, is well-suited for this application.

Therefore, the correct answer is :

Option A : Nylon 6

Question76

Identify thermosetting polymer from following

MHT CET 2023 12th May Morning Shift

Options:

A. Urea formaldehyde resin

B. Polythene

C. Polystyrene

D. Polyvinyls

Answer: A

Solution:

Thermosetting polymers are a type of polymer that become irreversibly hardened upon being cured. Among the options provided, the thermosetting polymer is :

Option A : Urea formaldehyde resin

Urea formaldehyde resin is a well-known example of a thermosetting polymer. Once it is set through a curing process, it cannot be melted and reshaped, which is a characteristic property of thermosetting polymers.

Polythene, Polystyrene, and Polyvinyls (Polyvinyl Chloride or PVC), on the other hand, are examples of thermoplastic polymers, which can be melted and reshaped upon heating.

Question77

Which from following properties is NOT exhibited by LDP?

MHT CET 2023 11th May Evening Shift

Options:

A. It is crystalline.

B. It is moisture resistant.

C. LDP films are extremely flexible.

D. It is poor conductor of electricity.

Answer: A

Solution:

HDP (High density polyethylene) is crystalline.

Question78

Which from following polymers is obtained from isoprene?

MHT CET 2023 11th May Evening Shift

Options:

A. Teflon

B. Natural rubber

C. Viscose rayon

D. Cuprammonium rayon

Answer: B

Solution:

Natural rubber is a high molecular mass linear polymer of isoprene (2-methylbuta-1,3-diene).

Question79

Name the accelerator used to introduce network of crosslink in elastomer.

MHT CET 2023 11th May Morning Shift

Options:

A. Zinc butyl xanthate

B. Zinc ethyl xanthate

C. Zinc butyl stearate

D. Zinc propyl xanthate

Answer: A

Solution:

The accelerator used to introduce a network of crosslinks in an elastomer (during vulcanization) is:

✅ **A) Zinc butyl xanthate**

Question80

Which among the following pairs of polymers contains both members as copolymers?

MHT CET 2023 11th May Morning Shift

Options:

A. Neoprene and Isoprene

B. Orlon and Teflon

C. Bakelite and Orlon

D. SBR and PHBV

Answer: D

Solution:

PHBV - It is a copolymer of two bifunctional β-hydroxy carboxylic acids, namely, β-hydroxybutyric acid (3-hydroxybutanoic acid) and β-hydroxyvaleric acid (3-hydroxypentanoic acid).

SBR - It is a copolymer of styrene with butadiene.

Question81

Identify a copolymer from following.

MHT CET 2023 10th May Evening Shift

Options:

A. Natural rubber

B. Polypropene

C. PVC

D. Terylene

Answer: D

Solution:

Terylene is a copolymer while natural rubber, polypropene and PVC are homopolymers.

Question82

Which among the following statements is NOT true about high density polythene?

MHT CET 2023 10th May Evening Shift

Options:

A. It is obtained from ethene.

B. It needs high pressure (1000-2000 atm) for synthesis.

C. Polymerization occurs in presence of Zieglar-Natta catalyst.

D. Melting point is higher than LDP.

Answer: B

Solution:

HDP is obtained by polymerization of ethene in presence of Zieglar-Natta catalyst at a temperature of 333 K to 343 K and a pressure of $6-7$ atm. Its melting point (in the range of $144-150^{\circ} \mathrm{C}$) is higher than that of LDP (melting point $110^{\circ} \mathrm{C}$).

Question83

Which from following monomers is used to prepare thermocol?

MHT CET 2023 10th May Morning Shift

Options:

A. Bisphenol and acrylamide

B. Acrylamide

C. Butadiene

D. Styrene

Answer: D

Solution:

The correct monomer used to prepare thermocol, which is a type of expanded polystyrene (EPS) foam, is Option D, Styrene.

Thermocol is essentially polystyrene foam, which is a polymer. Polymers are long chains of repeating units called monomers. In the case of thermocol, the monomer is styrene. Through a process called polymerization, styrene molecules react to form long chains, resulting in the polymer polystyrene.

So, to summarize:

- Option A: Bisphenol and acrylamide - Bisphenol A (combined with other chemicals) is used to make polycarbonates and epoxy resins, not polystyrene.
- Option B: Acrylamide - Acrylamide is used to produce polyacrylamides, which are used as water-soluble thickeners and flocculants. It is not used to make thermocol.
- Option C: Butadiene - Butadiene is a monomer used in the production of synthetic rubbers like polybutadiene, not polystyrene.
- Option D: Styrene - Styrene is the correct monomer for the production of thermocol (polystyrene).

Therefore, the correct answer is Option D: Styrene.

Question84

Identify biodegradable polymer from following.

MHT CET 2023 10th May Morning Shift

Options:

A. Nylon 2-nylon 6

B. Terylene

C. Nylon 6

D. Nylon 6,6

Answer: A

Solution:

Biodegradable polymers are materials that can be broken down into their constituent parts, typically monomers, by the action of biological organisms, typically microbes. Among the options given, one stands out as a biodegradable polymer:

Option A: **Nylon 2-nylon 6**

Nylon 2-nylon 6, also known as poly(glycolide-co-caprolactam), is a copolymer consisting of two different monomers: glycolide (2) and caprolactam (6). Polymers created from monomers with a tendency to break down more easily in the presence of microorganisms can be biodegradable. Nylon 2-nylon 6 is designed to be biodegradable and is used in a variety of applications, including biomedical applications such as sutures and tissue engineering, where biodegradability is a beneficial property.

For reference, let's look at the non-biodegradable options:

Option B: **Terylene** is another name for poly(ethylene terephthalate) or PET, which is a synthetic polymer used widely in textiles and plastic bottle manufacturing. PET is known for its strength, durability, and resistance to biodegradation.

Option C: **Nylon 6** is a synthetic polymer made from caprolactam, and while it does undergo some degradation over time, it is generally not considered biodegradable in the context of being broken down by microorganisms in the environment.

Option D: **Nylon 6,6** is composed of hexamethylene diamine and adipic acid and is a strong and durable synthetic polymer that is used in various applications from fabrics to car parts. Like Nylon 6, Nylon 6,6 is not readily biodegradable.

Therefore, the biodegradable polymer in this list is **Option A: Nylon 2-nylon 6**.

Question85

Identify linear polymer from the following.

MHT CET 2023 9th May Evening Shift

Options:

A. High density polythene

B. Low density polythene

C. Bakelite

D. Melamine

Answer: A

Solution:

Option A, High-density polyethylene (HDPE), is the linear polymer among the options listed.

HDPE is known for its linear structure, which contributes to its high-density characteristics. This linearity is due to the lack of branching in its polymer chains, leading to a more closely packed structure and higher strength compared to low-density polyethylene (LDPE).

The other options are not linear polymers :

- Low-density polyethylene (LDPE) (Option B) has a branched structure, which results in its lower density and less rigid nature.
- Bakelite (Option C) is a thermosetting phenol-formaldehyde resin, known for its network structure.
- Melamine (Option D) is another type of thermosetting plastic that forms a cross-linked, three-dimensional network rather than a linear structure.

Question86

Which from following polymers is grouped in the category of elastomers?

MHT CET 2023 9th May Evening Shift

Options:

A. Nylon 6,6

B. Buna-S

C. Terylene

D. Polythene

Answer: B

Solution:

Option B, Buna-S, is grouped in the category of elastomers.

Elastomers are polymers that exhibit elastic properties, meaning they can stretch significantly and return to their original shape. Buna-S, also known as Styrene-Butadiene Rubber (SBR), is a synthetic rubber that demonstrates these elastic properties, making it an elastomer.

The other options are not elastomers :

- Nylon 6,6 (Option A) is a type of polyamide, known for its strength and thermal resistance.
- Terylene (Option C) is a polyester, valued for its durability and resistance to various chemicals and environmental conditions.
- Polythene (Option D), also known as polyethylene, is a common plastic used in a wide range of products, noted for its toughness and flexibility, but it is not an elastomer.

Question87

Which from following polymers is obtained from $C_2 F_4$?

MHT CET 2023 9th May Morning Shift

Options:

A. PVC

B. Polyisobutylene

C. Polyacrylonitrile

D. Teflon

Answer: D

Solution:

The monomer used in preparation of teflon is tetrafluoroethylene, $(CF_2 = CF_2)$.

Question88

Identify homopolymer from following.

MHT CET 2023 9th May Morning Shift

Options:

A. Polyacrylonitrile

B. Glyptal

C. Polycarbonate

D. Buna-S

Answer: A

Solution:

The homopolymer from the options given is :

Option A : Polyacrylonitrile

This polymer is a homopolymer because it is made up of only one type of monomer, acrylonitrile.

Question89

Which among the following pair of monomers does not generate polyamide polymer?

MHT CET 2022 11th August Evening Shift

Options:

A. Urea and Formaldehyde

B. Glycine and ε amino caproic acid

C. Adipic acid and hexamethylene diamine

D. 3-Hydroxybutanoic acid and 3-Hydroxy pentanoic acid

Answer: D

Solution:

None of the monomers has $-NH_2$ group.

Question90

Identify the use of polystyrene for household purposes.

MHT CET 2022 11th August Evening Shift

Options:

A. To prepare shopping bags

B. To prepare microwavable food trays

C. To manufacture disposable cups and plates

D. To prepare bottles for storage of mouth wash

Answer: C

Solution:

Polystyrene is a versatile plastic that can be used for various purposes, including household items. Let's evaluate each option provided:

Option A: To prepare shopping bags – Polystyrene is not typically used for shopping bags. Shopping bags are commonly made from materials like polyethylene, which is more flexible and durable for this purpose. Therefore, Option A is not generally correct.

Option B: To prepare microwavable food trays – Polystyrene can be used to make food trays, but it is important to note that typical polystyrene, such as the one used in foam cups and takeout containers, is not microwave-safe. However, there are certain types of polystyrene that have been made to be microwavable, so this use is possible but not as common. Thus, Option B may be used in some cases with special types of polystyrene.

Option C: To manufacture disposable cups and plates – Polystyrene is widely used to produce disposable cups and plates. This material offers insulation properties useful for both hot and cold drinks and is lightweight, making it suitable for such disposable items. Therefore, Option C is correct.

Option D: To prepare bottles for storage of mouth wash – Polystyrene is generally not used for making bottles for mouthwash or other liquids that can be ingested. Such bottles are usually made from materials like polyethylene terephthalate (PET) or high-density polyethylene (HDPE) which are better suited to storing liquids safely. Consequently, Option D is not correct for typical household-purpose polystyrene.

The correct answer for the most common use of polystyrene for household purposes from the options provided is Option C: To manufacture disposable cups and plates.

Question91

Which from following polymers is used to obtain bristles for brushes?

MHT CET 2022 11th August Evening Shift

Options:

A. Nylon 2 - nylon 6

B. Nylon 6, 6

C. Nylon 6

D. Polyacrylamide

Answer: B

Solution:

The material used to obtain bristles for brushes is nylon, which is a type of synthetic polymer known for its strength, elasticity, and resistance to abrasion and chemicals. Let's examine the options you provided to determine the correct answer.

Option A: **Nylon 2 - nylon 6** doesn't typically refer to a commercial polymer used for bristles.

Option B: **Nylon 6,6** is a type of nylon made from hexamethylenediamine and adipic acid, which provides strong and durable fibers that are often used in bristles for brushes.

Option C: **Nylon 6** is another type of nylon, made from caprolactam, and it also has good properties to be used for bristles in brushes.

Option D: **Polyacrylamide** is not typically used for making bristles for brushes. It is more commonly used in water treatment processes, soil conditioner or as a flocculant.

Among the options given, both **Nylon 6,6** and **Nylon 6** are plausible materials for making brush bristles. However, traditionally, **Nylon 6,6** (Option B) is the most common polymer used for high-quality brush bristles due to its high tensile strength and stiffness. Therefore, Option B is likely the best answer.

Question92

Which of following is an example of cross-linked polymers?

MHT CET 2021 24th September Evening Shift

Options:

A. PVC

B. Acetate rayon

C. High density polyethylene

D. Melamine

Answer: D

Solution:

The correct answer is **Option D: Melamine**. Here's why:

Cross-linked polymers are formed when individual polymer chains are connected to each other by chemical bonds. These bonds, often referred to as cross-links, create a network structure that significantly affects the polymer's properties.

Let's break down each option:

Option A: PVC (Polyvinyl chloride) is a linear polymer. Its chains are long and flexible, but they don't have significant cross-linking. This is why PVC can be softened and molded.

Option B: Acetate rayon is a modified cellulose fiber. It's a natural polymer, and while it may have some cross-linking due to the presence of cellulose, it's not a typical example of a cross-linked polymer.

Option C: High-density polyethylene (HDPE) is a linear polymer with minimal branching. While some branching can act as a form of weak cross-linking, HDPE's structure is predominantly linear.

Option D: Melamine is a thermosetting polymer. It's known for its highly cross-linked structure. This network of cross-links gives melamine its rigidity, heat resistance, and durability. Melamine is commonly used in materials like dinnerware and laminates.

In summary, melamine is the best example of a cross-linked polymer because its structure is characterized by extensive chemical bonds between its polymer chains, giving it a rigid, network-like structure.

Question93

Which of the following polymers is used to obtain shopping bags?

MHT CET 2021 24th September Morning Shift

Options:

A. HDPE

B. LDPE

C. Polypropylene

D. PVC

Answer: B

Solution:

✅ **LDPE (Low Density Polyethylene)** is used to make **shopping bags** .

Correct option: B) LDPE

Question94

Which from following polymers is used to manufacture tyres?

MHT CET 2021 24th September Morning Shift

Options:

A. Neoprene

B. SBR

C. Bakelite

D. Polyacrylonitrile

Answer: B

Solution:

The polymer used to manufacture tyres is SBR (Styrene-Butadiene Rubber).

Let's delve into the details of each option:

Option A: Neoprene

Neoprene is a synthetic rubber produced by polymerizing chloroprene. It exhibits good chemical stability and maintains flexibility over a wide temperature range. However, it is not commonly used for tyre manufacture. Instead, it is often used for products like wetsuits, gaskets, hoses, and coatings.

Option B: SBR (Styrene-Butadiene Rubber)

SBR is a synthetic copolymer consisting of styrene and butadiene. It is widely used in the manufacture of car tyres due to its excellent abrasion resistance and aging stability. The proportion of styrene and butadiene can be adjusted to enhance specific properties such as resilience and wear resistance. Tyres made from SBR offer good performance combined with cost-effectiveness, which is why it is the preferred choice in the tyre industry.

Option C: Bakelite

Bakelite is a type of thermosetting plastic, also known as phenol-formaldehyde resin. It is known for its electrical non-conductivity and heat-resistant properties. Bakelite is not elastic or resilient, making it unsuitable for tyre production. Instead, it is commonly used in electrically insulating applications, kitchenware, and various other industrial uses.

Option D: Polyacrylonitrile

Polyacrylonitrile (PAN) is a synthetic, semi-crystalline organic polymer resin. It is used as a precursor for making carbon fiber and in textile applications. PAN does not have the elasticity or the necessary physical properties required for tyres.

Thus, the correct answer is Option B: SBR.

Question95

Which among following is an example of cyclic amide?

MHT CET 2021 24th September Morning Shift

Options:

A. PAN

B. Terylene

C. ε-caprolactam

D. Teflon

Answer: C

Solution:

An amide is a compound that contains a carbonyl group (C=O) linked to a nitrogen atom (N). A cyclic amide, also known as a lactam, is an amide in which the carbonyl group and nitrogen atom form part of a ring structure.

Let's examine the given options:

Option A: PAN (Polyacrylonitrile) - This is a polymer made from acrylonitrile and does not contain a cyclic amide structure.

Option B: Terylene (Polyethylene terephthalate) - This is a polyester and does not contain an amide structure. It's made from ethylene glycol and terephthalic acid.

Option C: ε-caprolactam - This is a lactam or cyclic amide. Its structure includes a ring with six members, one of which is a nitrogen atom connected to a carbonyl group.

Option D: Teflon (Polytetrafluoroethylene) - This is a polymer composed of tetrafluoroethylene units and does not contain any amide groups.

Based on the above information, the correct answer is:

Option C: ε-caprolactam

Question96

Identify monomers used for manufacturing of Terylene?

MHT CET 2021 23rd September Evening Shift

Options:

A. Propylene glycol and Terephthalic acid

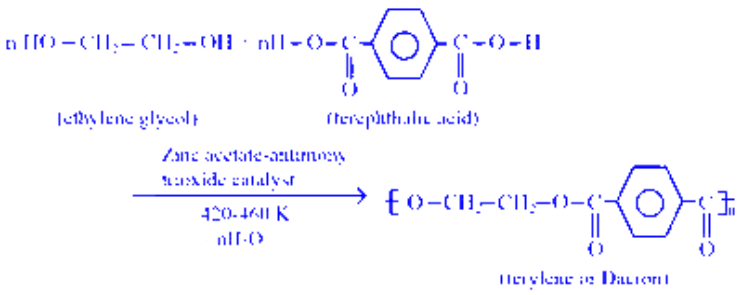
B. Ethylene glycol and Terephthalic acid

C. Propylene glycol and Phthalic acid

D. Ethylene glycol and Phthalic acid

Answer: B

Solution:



Question97

Which of following compounds does not undergo vinyl polymerization?

MHT CET 2021 23rd September Evening Shift

Options:

A. ε-Caprolactam

B. Vinyl cyanide

C. Tetrafluoroethylene

D. Ethylene

Answer: A

Solution:

✅ **ε-Caprolactam (Option A)** does **not** undergo **vinyl (addition) polymerization** .

Why: Vinyl polymerization needs a **C=C double bond** (like in ethylene, tetrafluoroethylene, vinyl cyanide). **ε-Caprolactam** polymerizes by **ring-opening polymerization** to give **nylon-6** , not by vinyl polymerization.

Question98

Identify catalyst used in manufacturing of HDP.

MHT CET 2021 23th September Morning Shift

Options:

A. Zieglar - Natta

B. Peroxides

C. Lindlar's

D. Magnesium oxide

Answer: A

Solution:

The catalyst used in the manufacturing of High-Density Polyethylene (HDP) is the Ziegler-Natta catalyst.

Therefore, the correct option is:

Option A: Ziegler - Natta

The Ziegler-Natta catalyst is named after the German chemist Karl Ziegler and the Italian chemist Giulio Natta who developed the catalyst in the 1950s. This catalyst is used for the polymerization of ethylene (and other α-olefins) to produce high-density polyethylene (HDPE) by controlling the polymer structure, which results in higher density and rigidity of the polymer.

Peroxides (Option B) are typically used as initiators in free-radical polymerizations, Lindlar's catalyst (Option C) is used for hydrogenation in organic chemistry, and Magnesium oxide (Option D) is not relevant to the polymerization process for HDPE.

Question99

Which among following compounds is used as monomer in preparation of Teflon?

MHT CET 2021 23th September Morning Shift

Options:

A. Tetrabromoethylene

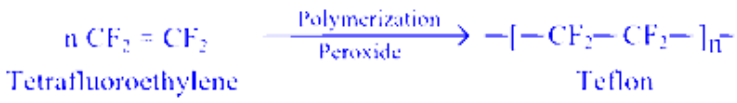
B. Tetrafluoroethylene

C. Tetrachloroethylene

D. Tetraiodoethylene

Answer: B

Solution:



Question100

Buna-S is obtained from

MHT CET 2021 22th September Evening Shift

Options:

A. Styrene and 2-chloro-1,3-butadiene

B. Adipic acid and hexamethylene diamine

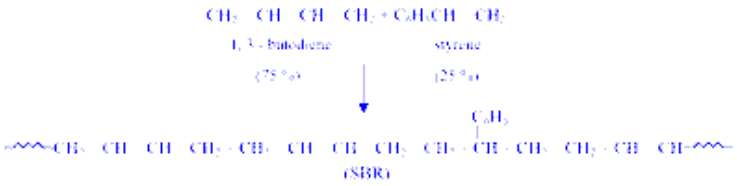
C. Styrene and butadiene

D. Glycine and ε-amino caproic acid

Answer: C

Solution:

Buna-S is an elastomer which is a copolymer of styrene with butadiene. Its trade name is SBR (styrene-butadiene rubber).



Question101

Which of the following is an example of copolymer?

MHT CET 2021 22th September Evening Shift

Options:

A. Polyvinyl chloride

B. Nylon-6

C. Buna-S

D. Polyethylene

Answer: C

Solution:

Buna - S is a copolymer while others are homopolymers.

Question102

Identify the polymer used in making floor tiles.

MHT CET 2021 22th September Evening Shift

Options:

A. PETE

B. PVC

C. HDPE

D. LDPE

Answer: B

Solution:

The polymer commonly used in making floor tiles is Polyvinyl Chloride, abbreviated as PVC. Therefore, the correct answer is **Option B: PVC**.

PVC is a versatile plastic that can be rigid or flexible, and it's used widely in construction for piping, vinyl siding, and indeed for flooring, including floor tiles, due to its durability, ease of installation, and low cost. It's also resistant to moisture, chemicals, and wear, making it an excellent choice for both residential and commercial flooring applications. In contrast, the other options given are used in different applications:

- **PETE or PET** (Polyethylene Terephthalate) - often used in the production of beverage bottles, fibers for clothing, and in food containers.
- **HDPE** (High-Density Polyethylene) - commonly used in the manufacturing of plastic bottles, corrosion-resistant piping, and plastic lumber.
- **LDPE** (Low-Density Polyethylene) - primarily used for plastic bags, containers, dispensing bottles, and tubing.

Thus, for the specific application of making floor tiles, PVC stands out as the most suitable polymer among the options provided.

Question103

Which among following statements is NOT true for neoprene?

MHT CET 2021 22th September Morning Shift

Options:

A. It is resistant to petroleum

B. It is obtained from styrene

C. It is a synthetic rubber

D. It is a condensation polymer

Answer: B

Solution:

It is obtained from chloroprene.

Question104

Which of the following polymers is obtained from ε-caprolactum?

MHT CET 2021 22th September Morning Shift

Options:

A. Polyacrylonitrile

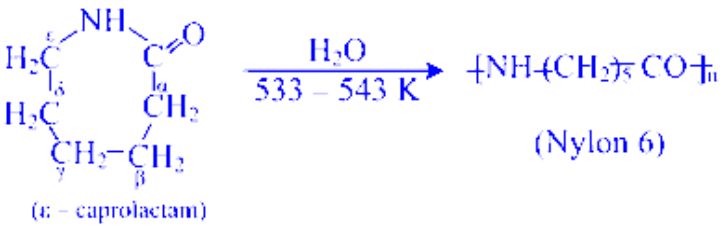
B. Neoprene

C. Terylene

D. Nylon-6

Answer: D

Solution:



Question105

Which of following elements forms crosslinks in vulcanization of SBR rubber?

MHT CET 2021 21th September Evening Shift

Options:

A. P

B. O

C. S

D. N

Answer: C

Solution:

In **vulcanization of SBR (styrene–butadiene rubber)** , the **crosslinks are formed by sulfur bridges (–S–S–)** .

✅ **Correct answer: C) S (Sulfur)**

Question106

Which free radical initiator is used for polymerization of tetrafluoro ethylene?

MHT CET 2021 21th September Evening Shift

Options:

A. Zinc acetate

B. Titanium tetrachloride

C. Ammonium persulphate

D. Acetyl peroxide

Answer: C

Solution:

Tetrafluoroethylene is polymerized by using free radical initiators such as hydrogen peroxide or ammonium persulphate at high pressure.

Question107

Identify homopolymer from following.

MHT CET 2021 21th September Morning Shift

Options:

A. Teflon

B. Nylon 2-nylon 6

C. PHBV

D. Bakelite

Answer: A

Solution:

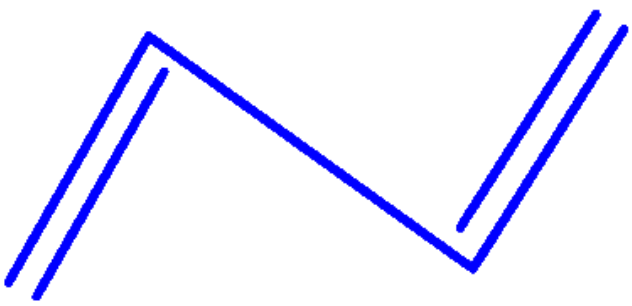
Teflon is homopolymer while others are copolymers.

Question108

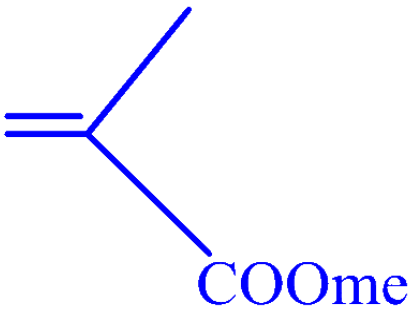
Which among following monomers is used to prepare PVC?

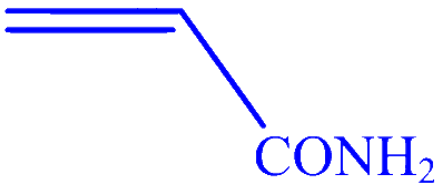
MHT CET 2021 21th September Morning Shift

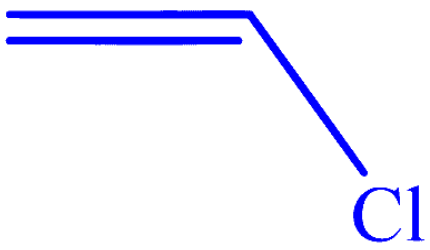
Options:

A. 

B.

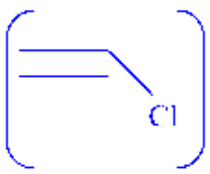


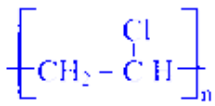
C. 

D. 

Answer: D

Solution:

Monomer ⟶ Vinyl chloride 

PVC (Polyvinyl chloride) structure ⟶ 

Question109

Which of the following polymers is used in the preparation of cinema films?

MHT CET 2021 20th September Evening Shift

Options:

A. Semisynthetic polymers

B. Synthetic polymers

C. Plant polymers

D. Animal polymers

Answer: A

Solution:

✅ **A) Semisynthetic polymers**

Why: Traditional **cinema films** were made from **cellulose derivatives** like **cellulose nitrate** and later **cellulose acetate** ("safety film"), which are **semisynthetic polymers** .

Question110

Which of the following monomer is used for preparation of Nylon-6?

MHT CET 2021 20th September Evening Shift

Options:

A. Isobutylene

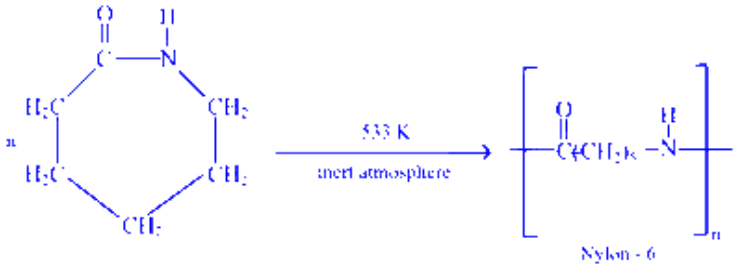
B. Hexamethylene diammonium adipate

C. Caprolactum

D. Acrylonitrile

Answer: C

Solution:



Question111

Identify the use of Buna-N from following.

MHT CET 2021 20th September Morning Shift

Options:

A. To obtain decorative laminates

B. To prepare lenses

C. To prepare adhesives

D. To prepare paints

Answer: C

Solution:

Buna-N, also known as nitrile rubber, is a synthetic rubber copolymer consisting of butadiene and acrylonitrile.

From the given options, Buna-N is used :

Option C : To prepare adhesives.

Thus, the correct answer is :

Option C : To prepare adhesives.

Question112

Which of the following polymers is used in electrophoresis in the form of gel?

MHT CET 2021 20th September Morning Shift

Options:

A. Glyptal

B. Buna-N

C. Polyacrylamide

D. PVC

Answer: C

Solution:

Electrophoresis is a technique used in laboratories to separate macromolecules (like DNA, RNA, and proteins) based on size. One of the most common types of gels used in this technique is :

Option C : Polyacrylamide.

Therefore, the correct answer is :

Option C : Polyacrylamide.

Question113

Which of the following pairs of monomers is used for the preparation of dextron?

MHT CET 2020 19th October Evening Shift

Options:

A. 3-hydroxy butanoic acid and 3-hydroxy pentanoic acid

B. Glycine and ω-amino caproic acid

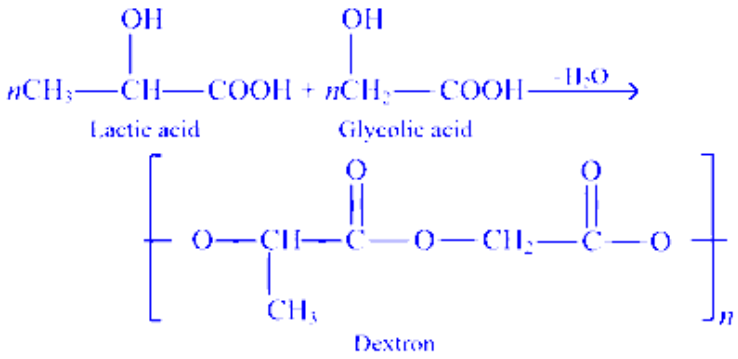
C. Lactic acid and glycolic acid

D. Isobutylene and Isoprene

Answer: C

Solution:

The monomer used for the preparation of dextron is lactic acid and glycolic acid. It is a copolymer and has ester linkage.



Question114

Which among the following polymers is used for making handles of cooker?

MHT CET 2020 19th October Evening Shift

Options:

A. Bekelite

B. Novolac

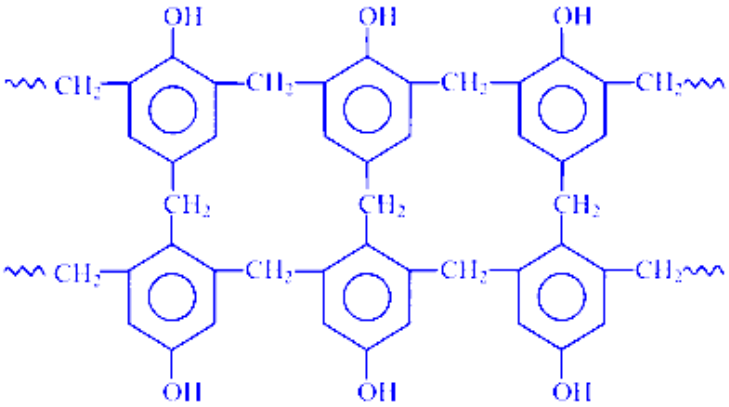
C. Melamine

D. Acrilan

Answer: A

Solution:

Bekelite is used for making handles of cooker. On heating with formaldehyde, novolac undergoes cross-linking to form an infusible solid mass, which is called bakelite.



Bakelite

It is a thermosetting plastic. It is a bad conductor of heat. It does not allow heat to pass through it easily. So, it is used to make the handles of the utensils, so that it does not heated and it becomes easy to handle the cookware while cooking.

Question115

Which polymer from following is used as synthetic leather?

MHT CET 2020 16th October Evening Shift

Options:

A. PVC

B. Bakelite

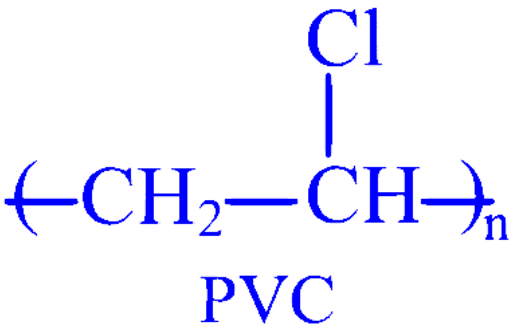
C. Polythene

D. Polystyrene

Answer: A

Solution:

Polyvinyl chloride (PVC) is used as synthetic leather. That is manufactured by replacing the hydrogen group with a chloride group in the vinyl groups. The result of this replacement is then blended with some other chemicals to create a durable plastic fabric that is also easy to maintain. They are linear or slightly branched long chain molecules, which can be repeatedly softened (on heating) and hardened (on coiling).



PVC

Question116

Which of the following properties is of the thermosetting polymers?

MHT CET 2020 16th October Evening Shift

Options:

A. These can be remoulded

B. On heating these become soft

C. These are cross-linked polymers

D. These can be recycled

Answer: C

Solution:

Thermosetting polymers are cross-linked or heavily branched molecules, which upon heating undergo extensive cross-linking in moulds and become infusible. Once they get set, they can not be reshaped and reused.

Question117

Which among the following polymers is obtained from styrene and 1-3-butadiene?

MHT CET 2020 16th October Morning Shift

Options:

A. SBR

B. PHBV

C. Buna- N

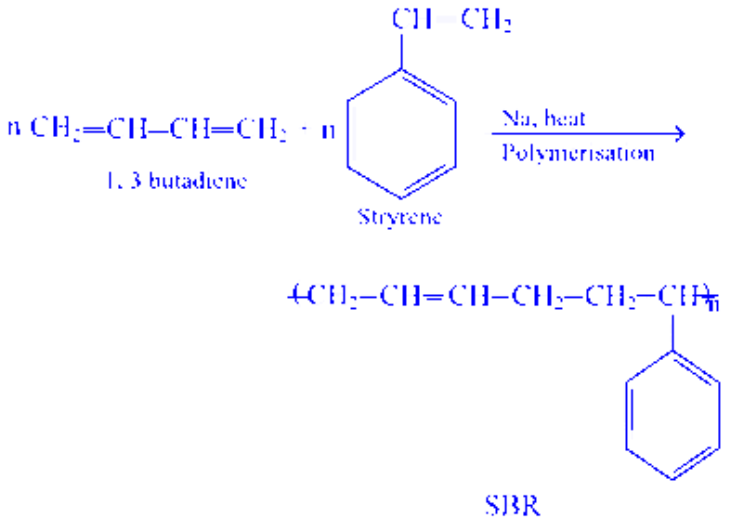
D. Butyl rubber

Answer: A

Solution:

Butadiene-styrene copolymer (SBR) obtained from stryrene and 1-3-butadiene.

Reaction involved is as follows



Question118

Which among the following is a biodegradable polymer?

MHT CET 2020 16th October Morning Shift

Options:

A. Polythene

B. Teflon

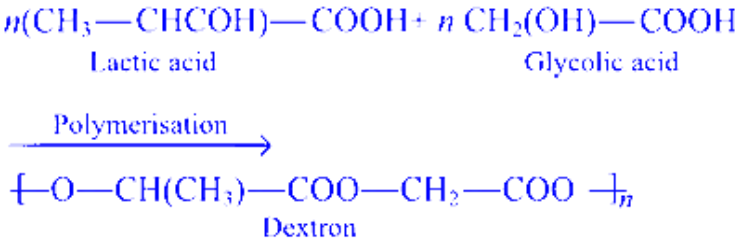
C. PVC

D. Dextron

Answer: D

Solution:

Dextron is a biodegradable polymer. It is the condensation polymer of monomers, lactic acid and glycolic acid.



Question119

A polymer which becomes soft on heating and hard on cooling, belongs to class of

MHT CET 2019 3rd May Morning Shift

Options:

A. fibers

B. thermosetting polymer

C. elastomer

D. thermoplastic polymer

Answer: D

Solution:

'A polymer which becomes soft on heating and hard on cooling belongs to class of thermoplastics. When these polymers are heated, the polymer becomes soft enough to be moulded into various shapes, e.g. polyethene, polystyrene etc.

Question120

Which among the following polymer does not show cross linking in it ?

MHT CET 2019 3rd May Morning Shift

Options:

A. Nylon-6

B. Bakelite

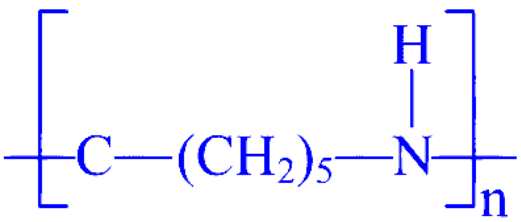
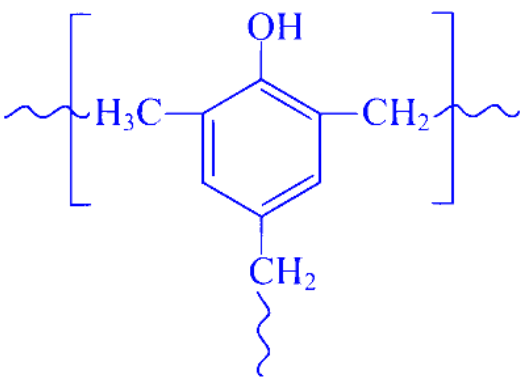
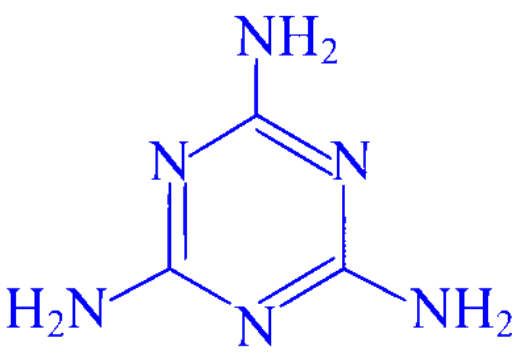
C. Melamine

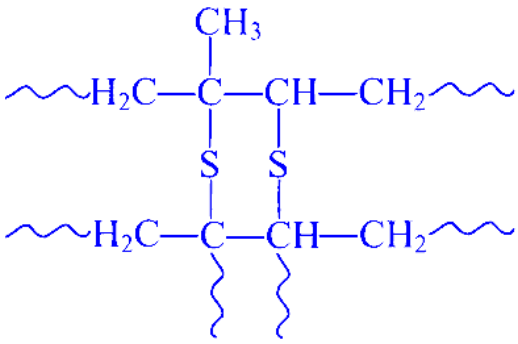
D. Vulcanised Rubber

Answer: A

Solution:

Nylon-6 polymer does not show cross linking in it. It is a linear polymer. It is obtained by heating caprolactum with water at a high temperature. Structural formula and name of given polymers is shown below:

Name of polymer	Structural formula
Nylon-6	
Bakelite	
Melamine	

Name of polymer	Structural formula
Vulcanised rubber	

Question121

Which of the following is a natural polymer?

MHT CET 2019 2nd May Evening Shift

Options:

A. Nylon

B. Teflon

C. Linen

D. Orlon

Answer: C

Solution:

Natural ploymers are those polymers which are found in plants and animals. Among the given polymers liner is a natural polymer which is made from cellulose (polymer of glucose molecules).

Question122

The monomers used in the preparation of dextron are

MHT CET 2019 2nd May Evening Shift

Options:

A. glycine and ω - amino caproic acid

B. 3 - hydroxy butanoic acid and 3-hydroxy pentanoic acid

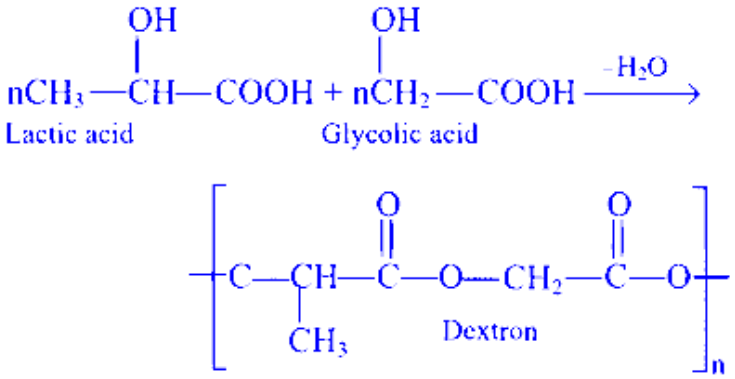
C. glycine and lactic acid

D. lactic acid and glycolic acid

Answer: D

Solution:

The monomers used in the preparation of dextron are lactic acid and glycolic acid. The reaction for the formation of dextron can be written as :



Question123

Which of the following polymer is used in paints?

MHT CET 2019 2nd May Morning Shift

Options:

A. Gutta percha

B. Melamine

C. Buna-S

D. Novolac

Answer: D

Solution:

The different uses of the given polymers are as follows:

(a) Gutta percha is used in various surgical devices and is also used during root canal therapy.

(b) Melamine is used in manufacturing of unbreakable crockery.

(c) Buna-S is used in making of bubble gums.

(d) Novolac is used in paints.

Thus, option (d) is correct.

Question124

Which among the following is not a semi-synthetic polymer?

MHT CET 2019 2nd May Morning Shift

Options:

A. Terylene

B. Viscose-rayon

C. Cupra-ammonium silk

D. Acetate rayon

Answer: A

Solution:

Viscose-Rayon, cupra-ammonium silk, acetate rayon are the examples of semi-synthetic polymers or fibres while terelyne is an example of synthetic polymers.
