

CHEMISTRY · JEE MAIN

Polymers

Chapter-wise previous year questions, with answer key

19

PYQS

2020–2023

PAPERS

6

TOPICS

Addition and Condensation Polymers

Natural and Synthetic Polymers

Classification of Polymers

Condensation Polymers

Biodegradable Polymers

Addition Polymers

- 1 Attempt each question on paper first — they're grouped by topic, newest papers first.
- 2 Check yourself against the answer key at the end.
- 3 Got one wrong? Tap “Step-by-step solution” under it for the full working.

Stuck on a question?

Every question has a free step-by-step solution on PrepWiser — tap “Step-by-step solution” under it.

Practise this chapter online with instant answer checking: prepwise.in/learn · No signup needed to browse

Addition and Condensation Polymers · 7 PYQs

Q1 JEE Main 2023 · 11 Apr · Shift 2

Given below are two statements :

Statement I : Ethene at 333 to 343K and 6-7 atm pressure in the presence of AlEt_3 and TiCl_4 undergoes addition polymerization to give LDP.

Statement II : Caprolactam at 533-543K in H_2O through step growth polymerizes to give Nylon 6.

In the light of the above statements, choose the correct answer from the options given below:

- (A) Both Statement I and Statement II are true
- (B) Statement I is true but Statement II is false
- (C) Statement I is false but Statement II is true
- (D) Both Statement I and Statement II are false

[Step-by-step solution ► prepwiser.in/questions/c1D5Mmjd4h](https://www.prepwiser.in/questions/c1D5Mmjd4h)

Q2 JEE Main 2022 · 28 Jun · Shift 1

Which one of the following is NOT a copolymer?

- | | |
|------------|-----------------------|
| (A) Buna-S | (B) Neoprene |
| (C) PHBV | (D) Butadiene-styrene |

[Step-by-step solution ► prepwiser.in/questions/GftiLJ3qzZ](https://www.prepwiser.in/questions/GftiLJ3qzZ)

Q3 JEE Main 2022 · 27 Jun · Shift 2

Which is true about Buna-N?

- (A) It is a linear polymer of 1, 3-butadiene.
- (B) It is obtained by copolymerization of 1, 3-butadiene and styrene.
- (C) It is obtained by copolymerization of 1, 3-butadiene and acrylonitrile.
- (D) The suffix N in Buna-N stands for its natural occurrence.

[Step-by-step solution ► prepwiser.in/questions/5SkxpZ1tsm](https://www.prepwiser.in/questions/5SkxpZ1tsm)

Q4 JEE Main 2022 · 24 Jun · Shift 2

Which of the following is not an example of a condensation polymer?

- | | |
|---------------|--------------|
| (A) Nylon 6,6 | (B) Dacron |
| (C) Buna-N | (D) Silicone |

[Step-by-step solution ► prepwiser.in/questions/ofsiVsl1IZ](https://www.prepwiser.in/questions/ofsiVsl1IZ)

Q5 JEE Main 2021 · 31 Aug · Shift 2

Which among the following is not a polyester?

- | | |
|-------------|-------------|
| (A) Novolac | (B) PHBV |
| (C) Dacron | (D) Glyptal |

[Step-by-step solution ► prepwiser.in/questions/iCcX5q3yUh](https://www.prepwiser.in/questions/iCcX5q3yUh)

Q6 JEE Main 2021 · 20 Jul · Shift 2

Bakelite is a cross-linked polymer of formaldehyde and :

- (A) PHBV (B) Buna-S
(C) Novolac (D) Dacron

[Step-by-step solution ► prepwisar.in/questions/TTf7MuYIu0](https://www.prepwisar.in/questions/TTf7MuYIu0)

Q7 JEE Main 2020 · 5 Sep · Shift 2

Which one of the following polymers is not obtained by condensation polymerisation?

- (A) Bakelite (B) Nylon 6
(C) Buna-N (D) Nylon 6, 6

[Step-by-step solution ► prepwisar.in/questions/Op1Rdu8Bdq](https://www.prepwisar.in/questions/Op1Rdu8Bdq)

Natural and Synthetic Polymers · 4 PYQs

Q8 JEE Main 2022 · 29 Jul · Shift 2

Which of the following is NOT a natural polymer?

- (A) Protein (B) Starch
(C) Rubber (D) Rayon

[Step-by-step solution ► prepwisar.in/questions/s1amVNIZ0X](https://www.prepwisar.in/questions/s1amVNIZ0X)

Q9 JEE Main 2022 · 26 Jul · Shift 2

Vulcanization of rubber is carried out by heating a mixture of

- (A) isoprene and styrene (B) neoprene and sulphur
(C) isoprene and sulphur (D) neoprene and styrene

[Step-by-step solution ► prepwisar.in/questions/EiyrwgTzFw](https://www.prepwisar.in/questions/EiyrwgTzFw)

Q10 JEE Main 2022 · 28 Jun · Shift 2

Given below are two statements, one is Assertion (A) and other is Reason (R).

Assertion (A) : Natural rubber is a linear polymer of isoprene called cis-polyisoprene with elastic properties.

Reason (R) : The cis-polyisoprene molecules consist of various chains held together by strong polar interactions with coiled structure.

In the light of the above statements, choose the correct one from the options given below :

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
(B) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(C) (A) is true but (R) is false.
(D) (A) is false but (R) is true.

[Step-by-step solution ► prepwisar.in/questions/-1iaOdiAgd](https://www.prepwisar.in/questions/-1iaOdiAgd)

Q11 JEE Main 2021 · 17 Mar · Shift 2

The functional groups that are responsible for the ion-exchange property of cation and anion exchange resins, respectively, are :

- (A) $-\text{SO}_3\text{H}$ and $-\text{NH}_2$
- (B) $-\text{NH}_2$ and COOH
- (C) $-\text{NH}_2$ and $-\text{SO}_3\text{H}$
- (D) $-\text{SO}_3\text{H}$ and $-\text{COOH}$

[Step-by-step solution ► prepwiser.in/questions/20i7otcROY](https://www.prepwiser.in/questions/20i7otcROY)

Classification of Polymers · 2 PYQs

Q12 JEE Main 2022 · 29 Jun · Shift 1

The polymer, which can be stretched and remains its original status on releasing the force is

- (A) Bakelite.
- (B) Nylon 6, 6.
- (C) Buna-N.
- (D) Terylene.

[Step-by-step solution ► prepwiser.in/questions/2LkQxY4Us-](https://www.prepwiser.in/questions/2LkQxY4Us-)

Q13 JEE Main 2022 · 26 Jun · Shift 1

Which of the following sets are correct regarding polymer?

- (A) Copolymer : Buna-S
- (B) Condensation polymer : Nylon-6,6
- (C) Fibres : Nylon-6,6
- (D) Thermosetting polymer : Terylene
- (E) Homopolymer : Buna-N

Choose the correct answer from given options below :

- (A) (A), (B) and (C) are correct
- (B) (B), (C) and (D) are correct
- (C) (A), (C) and (E) are correct
- (D) (A), (B) and (D) are correct

[Step-by-step solution ► prepwiser.in/questions/THOOrfieJB](https://www.prepwiser.in/questions/THOOrfieJB)

Condensation Polymers · 3 PYQs

Q14 JEE Main 2021 · 26 Aug · Shift 1

The polymer formed on heating Novolac with formaldehyde is :

- (A) Bakelite
- (B) Polyester
- (C) Melamine
- (D) Nylon 6, 6

[Step-by-step solution ► prepwiser.in/questions/lruaplWdZJ](https://www.prepwiser.in/questions/lruaplWdZJ)

Q15 JEE Main 2021 · 16 Mar · Shift 2

Which of the following polymer is used in the manufacture of wood laminates?

- (A) Melamine formaldehyde resin
- (B) Urea formaldehyde resin
- (C) cis-poly isoprene
- (D) Phenol and formaldehyde resin

[Step-by-step solution ► prepwiser.in/questions/v2WLbQdpbu](https://www.prepwiser.in/questions/v2WLbQdpbu)

Q16 JEE Main 2020 · 8 Jan · Shift 2

Preparation of Bakelite proceeds via reactions.

- (A) Electrophilic substitution and dehydration
- (B) Condensation and elimination
- (C) Nucleophilic addition and dehydration
- (D) Electrophilic addition and dehydration

[Step-by-step solution ► prepwiser.in/questions/zgHmFTojj8](https://www.prepwiser.in/questions/zgHmFTojj8)

Biodegradable Polymers · 1 PYQs

Q17 JEE Main 2021 · 25 Jul · Shift 2

A biodegradable polyamide can be made from :

- (A) Glycine and isoprene
- (B) Hexamethylene diamine and adipic acid
- (C) Glycine and aminocaproic acid
- (D) Styrene and caproic acid

[Step-by-step solution ► prepwiser.in/questions/b6_9Mp9CFW](https://www.prepwiser.in/questions/b6_9Mp9CFW)

Addition Polymers · 2 PYQs

Q18 JEE Main 2023 · 11 Apr · Shift 1

The polymer X - consists of linear molecules and is closely packed. It is prepared in the presence of triethylaluminium and titanium tetrachloride under low pressure. The polymer X is-

- (A) High density polythene
- (B) Polytetrafluoroethane
- (C) Low density polythene
- (D) Polyacrylonitrile

[Step-by-step solution ► prepwiser.in/questions/2GgRaBhbsZ](https://www.prepwiser.in/questions/2GgRaBhbsZ)

Q19 JEE Main 2020 · 6 Sep · Shift 1

Consider the Assertion and Reason given below.

Assertion (A) : Ethene polymerized in the presence of Ziegler Natta Catalyst at high temperature and pressure is used to make buckets and dustbins.

Reason (R) : High density polymers are closely packed and are chemically inert.

Choose the correct answer from the following:

- (A) Both (A) and (R) are correct and (R) is the correct explanation of (A).
- (B) Both (A) and (R) are correct but (R) is not the correct explanation of (A).
- (C) (A) is correct but (R) is wrong.
- (D) (A) and (R) both are wrong.

[Step-by-step solution ► prepwiser.in/questions/g8DZqeziMT](https://www.prepwiser.in/questions/g8DZqeziMT)

Answer key — Polymers

Numbers match the question numbers above. For full working, open the solution link under each question.

1	C	2	B	3	C	4	C	5	A	6	C	7	C	8	D
9	C	10	C	11	A	12	C	13	A	14	A	15	B	16	A
17	C	18	A	19	A										

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