

CHEMISTRY · JEE MAIN

Environmental Chemistry

Chapter-wise previous year questions, with answer key

12

PYQS

2020–2023

PAPERS

3

TOPICS

Water Pollution

Soil Pollution

Air Pollution

- 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.

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Q1 JEE Main 2023 · 13 Apr · Shift 1

Given below are two statements :

Statement I : Permutit process is more efficient compared to the synthetic resin method for the softening of water.

Statement II : Synthetic resin method results in the formation of soluble sodium salts.

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

- (A) Statement I is correct but Statement II is incorrect
- (B) Both the Statements I and II are correct
- (C) Both the Statements I and II are incorrect
- (D) Statement I is incorrect but Statement II is correct

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

Q2 JEE Main 2022 · 28 Jul · Shift 1

The metal salts formed during softening of hardwater using Clark's method are :

- (A) Ca(OH)_2 and Mg(OH)_2
- (B) CaCO_3 and Mg(OH)_2
- (C) Ca(OH)_2 and MgCO_3
- (D) CaCO_3 and MgCO_3

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

Q3 JEE Main 2022 · 26 Jun · Shift 2

Boiling of hard water is helpful in removing the temporary hardness by converting calcium hydrogen carbonate and magnesium hydrogen carbonate to :

- (A) CaCO_3 and Mg(OH)_2
- (B) CaCO_3 and MgCO_3
- (C) Ca(OH)_2 and MgCO_3
- (D) Ca(OH)_2 and Mg(OH)_2

[Step-by-step solution ► prepwiser.in/questions/upptyIQyP3](https://www.prepwiser.in/questions/upptyIQyP3)

Q4 JEE Main 2021 · 26 Aug · Shift 1

Which one of the following methods is most suitable for preparing deionized water?

- | | |
|----------------------------|---------------------|
| (A) Synthetic resin method | (B) Clark's method |
| (C) Calgon's method | (D) Permutit method |

[Step-by-step solution ► prepwiser.in/questions/X6wkEoEuRV](https://www.prepwiser.in/questions/X6wkEoEuRV)

Q5 JEE Main 2021 · 22 Jul · Shift 2

The water having more dissolved O_2 is :

- | | |
|--------------------|---------------------------------|
| (A) boiling water | (B) water at 80°C |
| (C) polluted water | (D) water at 4°C |

[Step-by-step solution ► prepwiser.in/questions/9NWb9uw4Ry](https://www.prepwiser.in/questions/9NWb9uw4Ry)

Q6 JEE Main 2021 · 26 Feb · Shift 2

Calgon is used for water treatment. Which of the following statement is NOT true about Calgon?

- (A) It is also known as Graham's salt.
- (B) It is polymeric compound and is water soluble.
- (C) It does not remove Ca^{2+} ion by precipitation.
- (D) Calgon contains the 2nd most abundant element by weight in the Earth's crust.

Step-by-step solution ► [prepwisser.in/questions/qNuBuA1dfP](https://www.prepwisser.in/questions/qNuBuA1dfP)

Q7 JEE Main 2020 · 5 Sep · Shift 2

The one that is NOT suitable for the removal of permanent hardness of water is :

- (A) Ion-exchange method
- (B) Calgon's method
- (C) Treatment with sodium carbonate
- (D) Clark's method

Step-by-step solution ► [prepwisser.in/questions/eFGOb1oZAM](https://www.prepwisser.in/questions/eFGOb1oZAM)

Q8 JEE Main 2020 · 7 Jan · Shift 1

In comparison to the zeolite process for the removal of permanent hardness, the synthetic resins method is :

- (A) less efficient as the resins cannot be regenerated.
- (B) more efficient as it can exchange only cations.
- (C) more efficient as it can exchange both cations as well as anions.
- (D) less efficient as it exchanges only anions.

Step-by-step solution ► [prepwisser.in/questions/D5s-GFAwOX](https://www.prepwisser.in/questions/D5s-GFAwOX)

Soil Pollution · 1 PYQs

Q9 JEE Main 2023 · 6 Apr · Shift 2

The group of chemicals used as pesticide is :

- (A) Dieldrin, Sodium arsinite, Tetrachloroethene
- (B) Aldrin, Sodium chlorate, Sodium arsinite
- (C) DDT, Aldrin
- (D) Sodium chlorate, DDT, PAN

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

Air Pollution · 3 PYQs

Q10 JEE Main 2023 · 31 Jan · Shift 2

The normal rain water is slightly acidic and its pH value is 5.6 because of which one of the following?

- (A) $\text{N}_2\text{O}_5 + \text{H}_2\text{O} \rightarrow 2\text{HNO}_3$
- (B) $2\text{SO}_2 + \text{O}_2 + 2\text{H}_2\text{O} \rightarrow 2\text{H}_2\text{SO}_4$
- (C) $4\text{NO}_2 + \text{O}_2 + 2\text{H}_2\text{O} \rightarrow 4\text{HNO}_3$
- (D) $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$

Step-by-step solution ► [prepwisser.in/questions/cFBdaJQ-jj](https://www.prepwisser.in/questions/cFBdaJQ-jj)

Q11 JEE Main 2023 · 25 Jan · Shift 2

- A. Ammonium salts produce haze in atmosphere.
- B. Ozone gets produced when atmospheric oxygen reacts with chlorine radicals.
- C. Polychlorinated biphenyls act as cleansing solvents.
- D. 'Blue baby' syndrome occurs due to the presence of excess of sulphate ions in water.

Choose the correct answer from the options given below :

- (A) B and C only
- (B) A and D only
- (C) A, B and C only
- (D) A and C only

[Step-by-step solution ► prepwisser.in/questions/JZqna5NsH5](https://www.prepwisser.in/questions/JZqna5NsH5)

Q12 JEE Main 2022 · 29 Jun · Shift 2

Sulphur dioxide is one of the components of polluted air. SO_2 is also a major contributor to acid rain. The correct and complete reaction to represent acid rain caused by SO_2 is :

- (A) $2\text{SO}_2 + \text{O}_2 \rightarrow 2\text{SO}_3$
- (B) $\text{SO}_2 + \text{O}_3 \rightarrow \text{SO}_3 + \text{O}_2$
- (C) $\text{SO}_2 + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{SO}_4$
- (D) $2\text{SO}_2 + \text{O}_2 + 2\text{H}_2\text{O} \rightarrow 2\text{H}_2\text{SO}_4$

[Step-by-step solution ► prepwisser.in/questions/7x_nh84NO_](https://www.prepwisser.in/questions/7x_nh84NO_)

Answer key — Environmental Chemistry

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

1	C	2	B	3	A	4	A	5	D	6	D	7	D	8	C
9	C	10	D	11	D	12	D								

Want the next chapter?

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