

(Please do not write anything except the question number in this space)

कृपया इस स्थान में प्रश्न संख्या के अतिरिक्त कुछ न लिखें।

UPSC

Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.
Content of the Question is more important than length.
(Specimen Answer Booklet - For Practice Purpose Only)

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Q. Technologically updated version of lead acid batteries will find even more use in the age of renewable and clean energy. Elaborate.

↳ Lead Acid Batteries (LAB)

It is one of the oldest type of rechargeable battery. It is used in lamps, Automobiles, defence, Communications etc.

↳ LAB as Energy storage

↳ In the renewable energy sector - solar and wind - used for energy storage.

↳ Lead Acid Battery as Pollution Control

↳ To bring down urban transport pollution as well as improve air quality levels.

↳ used for Electric Vehicles

↳ e-mobility → clean energy

↳ e-mobility is being subsidised, for charging EVs such as e-rickshaw, e-scooters and e-buses used in such applications.

↳ India and lead

↳ India has sufficient lead deposits primary as well as secondary/recycled.

↳ India produces 0.8-1 mn tonnes of lead out of used batteries.

↳ Primary lead production is around 0.25 mn tonnes.

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कृपया इस स्थान में प्रश्न संख्या के अनिश्चित कुछ न लिखें।

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↳ India's expertise in manufacturing lead batteries using locally available materials and inputs.

↳ Also exports lead Batteries to many parts of the world.

↳ 75-80% goes for manufacture of Batteries.

↳ Recycle and Reuse → clean energy

↳ lead batteries can be recycled a number of times without any loss in properties.

↳ 99% of lead is most recycled cause the sustainable development.

↳ Battery waste management Rules 2022 bringing a holistic approach and a circular economy ⇒ circulation

↳ Way forward

↳ Electric Vehicles will be key to decarbonise using transport

↳ Using carbon footprint as a parameter for product responsibility could trigger research and development of batteries upstream with lower footprint and materials sourced from within the country.

↳ Lead battery is best example of Atmanirbhar