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- 
- 
- Home
- UPSC
 - Current Affairs IAS
 -   
 - Quiz IAS
 -   
 - UPSC News Editorial (/Eng)
 - Answer Writing ( /Eng)
 - UPSC Essay (/Eng)
 - UPSC GS (/Eng)
 - UPSC GS 1 ( /Eng)
 - UPSC GS-2 ( /Eng)
 - UPSC GS-3 ( /Eng)
 - UPSC GS-4 ( /Eng)
 - Kurukshetra ( /Eng)
 - Yojana ( /Eng)
 - IAS Strategy for Prelims
 - General Studies
 - CSAT
 - IAS Strategy for Mains
 - IAS GS 1
 - IAS GS 2
 - IAS GS 3
 - IAS GS 4
 - IAS Test Series
- Himachal HPAS
 - Himachal Daily Current Affairs
 -   
 - Daily Himachal GK Quiz

- Himachal HPAS
- Himachal News Editorial (Hindi/Eng)
- Answer Writing (Hindi /Eng)
- Himachal Essay (Hindi/Eng)
- Giriraj
 - Magazine
 - Giriraj Quiz
- Himachal
 - Himachal
 - Himachal Himachal
- HP Government Schemes
- Himachal Himachal Himachal Himachal
- Syllabus Prelims Himachal HPAS
 - GENERAL STUDIES
 - CSAT
 - English
 - Hindi
- Syllabus Mains Himachal HPAS
 - English,Hindi,Essay & One Optional
 - HPAS GS 3
 - HPAS GS 2
 - HPAS GS 1
- Himachal HPAS Test Series
- All You need to Know about Himachal HPAS
- HARYANA HCS
 - Haryana Current Affairs
 - Himachal Himachal Himachal
 - HCS Quiz
 - Himachal Himachal Himachal
 - Haryana News Editorial (Hindi/Eng)
 - Answer Writing (Hindi /Eng)
 - Haryana Essay (Hindi/Eng)
 - HR Government Schemes
 - Himachal Himachal Himachal Himachal
 - Syllabus Mains Haryana HCS
 - Syllabus Prelims Haryana HCS
 - HCS Prelims Test Series

- [Punjab PCS](#)
- [Punjab PCS Current Affairs](#)
- [Daily Quiz Punjab PCS](#)
- [Punjab News Editorial \(Eng\)](#)
- [Answer Writing \(Eng\)](#)
- [Punjab Essay \(Eng\)](#)
- [All you need to know about Punjab PCS Exam 2021](#)
- [Syllabus Prelims Punjab PCS](#)
 - [General Studies](#)
 - [Prelims GS 1](#)
- [Syllabus Mains Punjab PCS](#)
 - [PCS GS 1](#)
 - [PCS GS 2](#)
 - [PCS GS 3](#)
 - [PCS GS 4](#)
 - [Online PUNJAB PCS TEST SERIES 2020](#)
- [CSAT](#)
 - [CSAT English](#)
 - [Punjab PCS CSAT](#)
- [Concept Mindmaps](#)
 - [Polity \(Hindi / Eng\)](#)
 - [Geography \(Hindi / Eng\)](#)
 - [Environment \(Hindi / Eng\)](#)
 - [History \(Hindi / Eng\)](#)
 - [Economics \(Hindi / Eng\)](#)
 - [Science and Technology \(Hindi / Eng\)](#)
 - [CSAT Concepts \(Hindi / Eng\)](#)
 - [Maps \(Hindi / Eng\)](#)
 - [Art and Culture \(Hindi / Eng\)](#)
 - [International Affairs \(Hindi / Eng\)](#)
 - [Punjab PCS Concepts](#)
 - [Himachal HPAS Concepts \(Hindi / Eng\)](#)
 - [Haryana HCS Concepts \(Hindi / Eng\)](#)
 - [Rajasthan RAS Concepts \(Hindi / Eng\)](#)
- [Concept Quiz](#)
 - [Polity Quiz \(Hindi/Eng\)](#)

- Geography Quiz (हिंदी/Eng)
- Environment Quiz (हिंदी/Eng)
- History Quiz (हिंदी/Eng)
- Economics Quiz (हिंदी/Eng)
- Science and Technology Quiz (हिंदी/Eng)
- CSAT Concepts Quiz (हिंदी/Eng)
- Maps Quiz (हिंदी/Eng)
- Art and Culture Quiz (हिंदी/Eng)
- Punjab PCS Concepts Quiz
- Himachal HPAS Concepts Quiz (हिंदी/Eng)
- Haryana HCS Concepts Quiz (हिंदी/Eng)
- Rajasthan RAS Concepts Quiz (हिंदी/Eng)
- Mains
 - UPSC Answer Writing (हिंदी/Eng)
 - HPPSC Answer Writing (हिंदी/Eng)
 - Haryana HCS Answer Writing (हिंदी/Eng)
 - Punjab PCS Answer Writing
- Exam Blogs
 - UPSC Exam Blogs
 - Himachal Exam Blogs
 - Punjab exam Blogs
 - Haryana Exam Blogs
 - Rajasthan Exam Blogs
 - E-Magazine
 - E-Magazine for HPAS
 - हिमाचल प्रदेश का हिंदी-हिंदी
 - E-Magazine for Punjab PCS
- UPCOMING EXAMS
 - National Exams
 - Himachal Pradesh Exams
 - Punjab Exams
 - Test Series Planner
- About US
- Sign Up
- Login
- facebook 

- instagram 
- youtube 

MENU

Click on Drop Down for Current Affairs

Topics Covered



- What is the news?
- Who developed this?
- What is the name of India's first septic tank cleaning robot?
- Septic Tank Cleaning Challenge:
- How Does Homesep Atom Work?
- Homesep Atom benefits:
- Early Success, Future Potential:
- Conclusion:
- QuizTime:
- Are you Ready!
- Read the Below Instructions Carefully:
 - Please Rate!
- Mains Questions:
 - Question 1:
 - Model Answer:
 - Question 2:
 - Model Answer:
 - Relevance to the UPSC Prelims and Mains syllabus under the following topics:

What is the news?

- The Swachh Bharat Abhiyan (Clean India Mission) has been a cornerstone initiative in India's fight for improved sanitation.
- Now, this mission receives a significant boost with the development of **India's first septic tank cleaning robot**, the Homesep Atom.

Who developed this?

- It has been developed by the startup incubated in the Department of Science and Technology (DST)-Technology Business Incubator (TBI) of IIT Madras.

What is the name of India's first septic tank cleaning robot?

- Homesep Atom

Septic Tank Cleaning Challenge:

- Manual septic tank cleaning is still common in India, despite its risks. Cleanup personnel risk asphyxia and illnesses in these cramped quarters due to hazardous gasses. The Homesep Atom solves this longtime problem.

How Does Homesep Atom Work?

This robot cleans septic tanks end-to-end. It uses multiple technologies for complete sanitation:

- Extensive Blade Cleaning: The robot scrapes tank waste using blades.
- The Homesep Atom can successfully remove solid waste from the tank.
- Suction and Storage: The robot suctions garbage and stores it for disposal.
- This integrated device speeds cleaning and eliminates manual access into dangerous locations.

Homesep Atom benefits:

The robot has many advantages over traditional methods:

- The Homesep Atom replaces manual cleaning, protecting sanitation personnel from harmful fumes and illnesses.
- Effective and Hygienic Cleaning: The robot's extensive cleaning methods improve sanitation.
- Long-term savings: The robot's efficiency may reduce sanitation departments' running costs.

Early Success, Future Potential:

- Chennai, Madurai, and Coimbatore are among 16 Indian cities with Homesep Atoms. Success in initial deployments speaks well for wider acceptance.

Development and refining may result in:

- Making the robot cheaper would allow it to be used by more socioeconomic groups.
- Customization for Different Tank Designs: Handling different septic tank designs can improve the robot's usability.

Conclusion:

- The Homesep Atom advances the Swachh Bharat Abhiyan. This revolutionary robot enhances cleanliness and sanitation worker safety. As the technology improves and becomes more available, it could transform sewage tank cleaning in India, making it cleaner and healthier.



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QuizTime:


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1

Are you Ready!

Thank you, Time Out !

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General Studies

CURRENT AFFAIRS QUIZ

Read the Below Instructions Carefully:

- Click on - Start Quiz
- Attempt all questions (You can attempt or leave)

- After Attempting Last Question.
 - Enter Name & Email
 - Click on - Check Result
 - Scroll down - Check out Solutions too.
- Thank you.

Loading ...



1 / 5

Category: General Studies

Which of the following statements BEST describes a potential limitation of using robots like the Homesep Atom for septic tank cleaning in India?

- The robots are effective but require excessive maintenance.
- They may not be suitable for cleaning all septic tank designs.
- The technology eliminates the need for sanitation workers altogether.
- These robots pose a safety risk by introducing new hazards.

Prev

Finish

Next

2 / 5

Category: General Studies

The Homesep Atom robot is designed for septic tank cleaning and utilizes which of the following functionalities?

- Chemical disinfection of the tank
- Ultraviolet radiation for waste sterilization
- A combination of scraping, desilting, and suction
- Transportation of collected waste to disposal sites

Prev

Finish

Next

3 / 5

Category: General Studies

Why does manual cleaning of septic tanks pose a significant health hazard for sanitation workers?

- The physical exertion required for the task is strenuous.
- They are exposed to high levels of noise pollution.
- They risk contact with contaminated water and toxic fumes.
- The confined spaces can lead to claustrophobia.

Prev

Finish

Next

4 / 5

Category: General Studies

The Swachh Bharat Abhiyan primarily focuses on which of the following aspects of sanitation in India?

- Solid waste Management
- Fecal Sludge Management
- Industrial waste treatment
- All of the above

Prev

Finish

Next

5 / 5

Category: General Studies

What can be a crucial factor for wider adoption of the HomeSep Atom for septic tank cleaning in India?

- Mandating its use by all sanitation service providers.

- Developing extensive marketing campaigns to promote the robot.
- Making the technology more affordable and accessible.
- Focusing solely on its benefits for sanitation worker safety.

Prev

Finish

Check Rank, Result Now and enter correct email as you will get Solutions in the email as well for future use!

Check the Result

Your score is

0%

Restart quiz

Please Rate!

Send feedback

Mains Questions:

**Below Mains
Question**

Write in Comment Section



Question 1:

(a) Explain the challenges associated with manual cleaning of septic tanks and the significance of the Swachh Bharat Abhiyan in addressing sanitation issues in India.

(b) Discuss how the Homesep Atom robot addresses the challenges of manual septic tank cleaning.

(250 words)

Model Answer:

(a) Challenges of manual septic tank cleaning:

- **Health hazards:** Workers are exposed to toxic gases and pathogens, risking suffocation, infections, and other health problems.
- **Dignity and safety concerns:** The work is considered demeaning and poses significant safety risks.
- **Inefficiency:** Manual cleaning may not be thorough, leading to incomplete sanitation and potential health risks.

(b) Addressing challenges with the Homesep Atom:

- **Eliminates manual entry:** The robot cleans the tank

remotely, protecting workers from hazardous environments.

- Comprehensive cleaning: Combines scraping, desilting, and suction for thorough sanitation.
- Potential cost-effectiveness: May reduce overall cleaning costs in the long run.

Question 2:

(a) Discuss the potential benefits and limitations of using robots for sanitation tasks like septic tank cleaning.

(b) Suggest strategies for wider adoption and effective utilization of the Homesep Atom in India.

(250 words)

Model Answer:

(a) Benefits:

- Improved worker safety: Eliminates the risk of exposure to hazardous environments.
- Enhanced sanitation: Offers efficient and thorough cleaning methods.
- Reduced operational costs: May be cost-effective in the long run.

Limitations:

- Initial investment costs: Acquiring and maintaining robots can be expensive.
- Technical expertise: Operating and maintaining robots may require specialized training.
- Unaddressed social issues: May not address the social stigma associated with sanitation work.

(b) Strategies for wider adoption and effective utilization:

- Government support: Subsidies and incentives for purchasing and utilizing robots.
- Public awareness: Educating the public about the robot's benefits and promoting dignity for sanitation workers.
- Skill development: Providing training programs for operating and maintaining the robots.
- Standardization and regulations: Developing standardized manufacturing and maintenance procedures.

Remember: These are just sample answers. It's important to further research and refine your responses based on your own understanding and perspective.

Relevance to the UPSC Prelims and Mains syllabus under the following topics:



UPSC Prelims:

- **General Science (Paper-I):**

Applications of Science and Technology in everyday life. (This section could potentially relate to the application of technology in sanitation)

UPSC Mains:

- **General Studies II (GS-II):**

Governance, administration and challenges. (This could be linked to examining the challenges of manual scavenging and government initiatives like Swachh Bharat Abhiyan)

- **General Studies III (GS-III):**

Science and Technology – developments and their applications and impact on society. (This section could be relevant for discussing the application of robotics in sanitation and its potential societal benefits)

*Click here to read in
Hindi.*

CLICK HERE



Quiz Time

The profit triples with a doubling of the selling price. Determine the profit percentage.

- Option 1
- Option 2
- Option 3



Try Quiz Now

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UPSC

- National Current Affairs
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- उत्तर प्रदेश प्रश्नपत्र
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- Punjab Current Affairs
- PPSC Quiz
- Punjab Mindmaps
- Punjab Editorial
- Punjab E-Magazine
- PPSC Free Mock Test
- PPSC Prelims Test Series

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- Haryana Current Affairs
- HCS Quiz
- HCS Editorials
- HCS Mindmaps
- HCS E-Magazine
- HCS Free Mock Test
- HCS Prelims Test Series

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