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  - Boosting Self-Reliance and Growth:
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- About the Semi-Conductor Laboratory (SCL):
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  - Are you Ready!
- Read the Below Instructions Carefully:
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## *Summary:*

- Semi-Conductor Lab Revamp: India's first semiconductor lab in Mohali, Punjab, is set for a major overhaul with a Rs 10,000 crore investment to upgrade to 28nm technology.

- Self-Reliance in Chip Manufacturing: The upgrade aims to reduce dependence on imports and boost domestic chip production, innovation, and job creation.
- Challenges Ahead: Transitioning to advanced technology requires significant expertise, infrastructure, and collaboration with leading companies.
- Strategic Impact: A successful revamp can strengthen India's global technological position and contribute to economic growth.

## *What is the news?*

- For decades, India's dream of self-reliance in semiconductor technology has faced hurdles. However, a recent announcement brings a glimmer of hope. The country's first-ever semiconductor fabrication unit, the Semi-Conductor Laboratory (SCL) in Mohali, Punjab, is set for a game-changing revamp with a massive Rs 10,000 crore investment from the Ministry of Electronics and IT.
- This move signifies a crucial step towards strengthening India's semiconductor ecosystem. Established in 1984, the SCL has faced challenges, including a devastating fire in 1987 that stalled

its operations for a decade. Currently, the lab utilizes 180nm technology, which is significantly less advanced compared to the leading-edge 5nm and 7nm nodes.

- The upcoming modernization project aims to bridge this technological gap. The focus lies on transitioning the SCL to the more advanced 28nm node, a significant leap that will enhance its chip-making capabilities. This advancement will allow the lab to produce more sophisticated semiconductors, catering to a wider range of applications.

## *Boosting Self-Reliance and Growth:*

*The revamped SCL holds immense potential for India’s technological ambitions. Here’s how it can contribute to the nation’s growth:*

- **Reduced Dependence:** A more robust domestic chip manufacturing industry can lessen India’s reliance on foreign imports, promoting self-sufficiency in critical technology.
- **Enhanced Innovation:** Advanced chip production capabilities can foster domestic innovation in various sectors like electronics, telecommunications, and defense.
- **Job Creation:** The project is expected to generate numerous employment opportunities in fields like engineering, manufacturing, and research & development.

- **Strategic Advantage:** A strong domestic semiconductor industry strengthens India’s position in the global technological landscape.

## *Challenges and the Road Ahead:*

- Despite the promising outlook, challenges remain. Successfully transitioning to a new technology node requires significant expertise and infrastructure development. Additionally, attracting leading companies for technology collaboration and talent acquisition will be crucial for the project’s long-term success.

# *About the Semi-Conductor Laboratory (SCL):*

### *Founding and Purpose:*

- SCL, a public sector undertaking (PSU) of the Indian government, was founded as the Semiconductor Complex Limited in Mohali, Punjab.
  Its primary goal was to establish a semiconductor manufacturing industry in India.

### *Formation and Production:*

- In 1976, the Indian Cabinet approved the formation of SCL, and production began in 1984.

- Initially, Navi Mumbai was considered, but Prime Minister Indira Gandhi chose Mohali as the location.
- Chief Minister of Punjab, Zail Singh, offered 51 acres of land to SCL for a nominal cost.
- SCL collaborated with American Microsystems and started producing 5-micron complementary metal-oxide semiconductor (CMOS) technology.

### *Fire Incident and Impact:*

- In 1989, a fire destroyed SCL’s facility in Mohali.
- Production resumed in 1997, but the fire setback hindered India’s semiconductor industry growth.
- The cause of the fire remains a mystery.

### *Administrative Changes:*

- SCL came under the Department of Space (DoS) in March 2005.
- It underwent organizational restructuring, focusing on research and development.
- In 2006, it was renamed the Semi-Conductor Laboratory.

- As of 2023, SCL is under the administrative control of the Ministry of Electronics and Information Technology (MeitY).
- 2024: The revamp of SCL with a Rs 10,000 crore investment to upgrade to 28nm technology aims to reduce import dependence and boost domestic chip production, innovation, and job creation. This strategic move could strengthen India’s global technological position and

contribute to economic growth.

## Conclusion:

- The modernization of the SCL marks a significant investment in India’s future. By overcoming challenges and leveraging this opportunity effectively, India can inch closer to achieving its goal of chip self-reliance and securing a strong foothold in the global tech race. The revamped SCL can be a catalyst for innovation, job creation, and economic growth, propelling India towards a self-sufficient and technologically advanced future.
-
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*Are you Ready!*

*Thank you, Time Out !*

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PUNJAB 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 ...

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*Category:* **Punjab PCS**

***The Government of India's decision to modernize the Semi-Conductor Laboratory (SCL) primarily aims to:***

○ Enhance India's capacity for exporting semiconductors to other countries.

○ Reduce India's reliance on foreign imports of critical chip technology.

○ Develop a domestic market for used and refurbished electronic components.

○ Promote the use of cloud-based computing solutions over physical chips.

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*Category:* **Punjab PCS**

### *A significant challenge associated with the successful implementation of the SCL revamp project is:*

○ The limited availability of raw materials required for chip manufacturing.

○ The lack of public awareness about the importance of semiconductors.

○ The high cost of mobile data plans in India.

○ The absence of a skilled workforce in the field of semiconductor engineering.

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*Category:* **Punjab PCS**

### *Which of the following statements best describes the potential impact of the revamped SCL on India's economy?*

○ It is likely to lead to a significant decrease in the prices of smartphones in the Indian market.

○ It can contribute to the creation of new job opportunities in various sectors.

○ It might result in a temporary shortage of electronic devices due to production disruptions.

○ It will primarily benefit large multinational corporations operating in India.

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*Category:* **General Studies**

## *In the context of India's semiconductor ambitions, which of the following strategies would be MOST beneficial in the long run?*

○ Encouraging the use of open-source software solutions instead of chip-based applications.

○ Focusing solely on modernizing existing government-owned chip fabrication facilities.

○ Encouraging foreign investment and collaboration with leading global semiconductor companies.

○ Imposing high tariffs on imported electronic devices to promote domestic production.

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*Category:* **General Studies**

## *The modernization of the Semi-Conductor Laboratory (SCL) can be seen as an initiative aligned with which of the following government programs?*

○ Swachh Bharat Abhiyan (Clean India Mission)

○ Make in India

○ Beti Bachao Beti Padhao (Save the Girl Child, Educate the Girl Child)

○ Pradhan Mantri Jan Dhan Yojana (Prime Minister's People's Wealth Scheme)

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 PPSC
Mains Question
Write Answers in Comment Section

## *Question 1:*

***The Indian government has announced a significant investment to modernize the Semi-***

***Conductor Laboratory (SCL) in Mohali. Discuss the potential benefits of this project for India's semiconductor industry and the challenges that need to be addressed for its successful implementation.(250 words)***

## *Model Answer:*

Benefits:

- Reduced Dependence on Imports: A modernized SCL with advanced chip manufacturing capabilities can decrease India's dependence on foreign chip imports, especially for critical applications.
- Boost to Domestic Production: The project can stimulate domestic production of semiconductors, catering to the growing demand for electronics in various sectors.
- Enhanced Innovation: Advanced chip production capabilities can foster innovation in areas like artificial intelligence, internet of things (IoT), and indigenous electronics design.
- Job Creation: The project is expected to generate jobs in engineering, manufacturing, research & development, and related fields.
- Strategic Advantage: A robust domestic semiconductor industry strengthens India's position in the global technology landscape and reduces vulnerability to supply chain disruptions.

Challenges:

- Technological Expertise: Successfully transitioning to a new technology node requires

significant scientific and engineering expertise. Collaboration with established players and talent acquisition will be crucial.
- Infrastructure Development: Modernizing the SCL necessitates building advanced infrastructure for chip fabrication, cleanroom facilities, and testing equipment.
- Financial Sustainability: A long-term funding strategy is needed to support the project’s ongoing operations and future technological upgrades.
- Market Competition: The global semiconductor industry is highly competitive. Establishing market share for domestically produced chips requires competitive pricing and strategic marketing.

## Question 2:

***Besides the modernization of the SCL, discuss other strategies that India can adopt to achieve self-reliance in semiconductor technology.(250 words)***

## Model Answer:

Strategies for Self-Reliance:

- Promoting Research & Development: Investing in research institutions and universities to develop indigenous chip design and fabrication technologies.

- Attracting Foreign Investment: Offering incentives and creating a favorable business environment to attract leading global semiconductor companies to set up manufacturing facilities in India.
- Skill Development: Focusing on skill development programs to create a pool of qualified engineers, technicians, and researchers for the semiconductor industry.
- Building a Strong Ecosystem: Developing a robust ecosystem that includes raw material suppliers, equipment manufacturers, and design houses to support the entire chip-making value chain.
- By implementing a multi-pronged approach, India can create a more comprehensive semiconductor ecosystem and accelerate its journey towards self-reliance in critical chip technology.

***Remember: These are just sample answers. It's important to further research and refine your responses based on your own understanding and perspective. Read entire Punjab PCS Current Affairs.***

## *Relevance to the Punjab PCS Prelims and Mains syllabus under the following topics:*

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## *Prelims:*

- **GS Paper I:GS Paper I: Science & Technology (General Awareness):**There might be a general awareness question or two related to Science & Technology advancements in the prelims. Understanding the importance of semiconductors in electronics and their role in various devices could be beneficial for answering such questions.
- **Current Affairs with relevance to Punjab :**The prelims might have a section on current affairs with a specific focus on Punjab. If the revamp of the SCL (located in Mohali, Punjab) receives significant regional media coverage, there's a slight chance of a question related to it. However, this is less likely compared to questions on broader national developments.

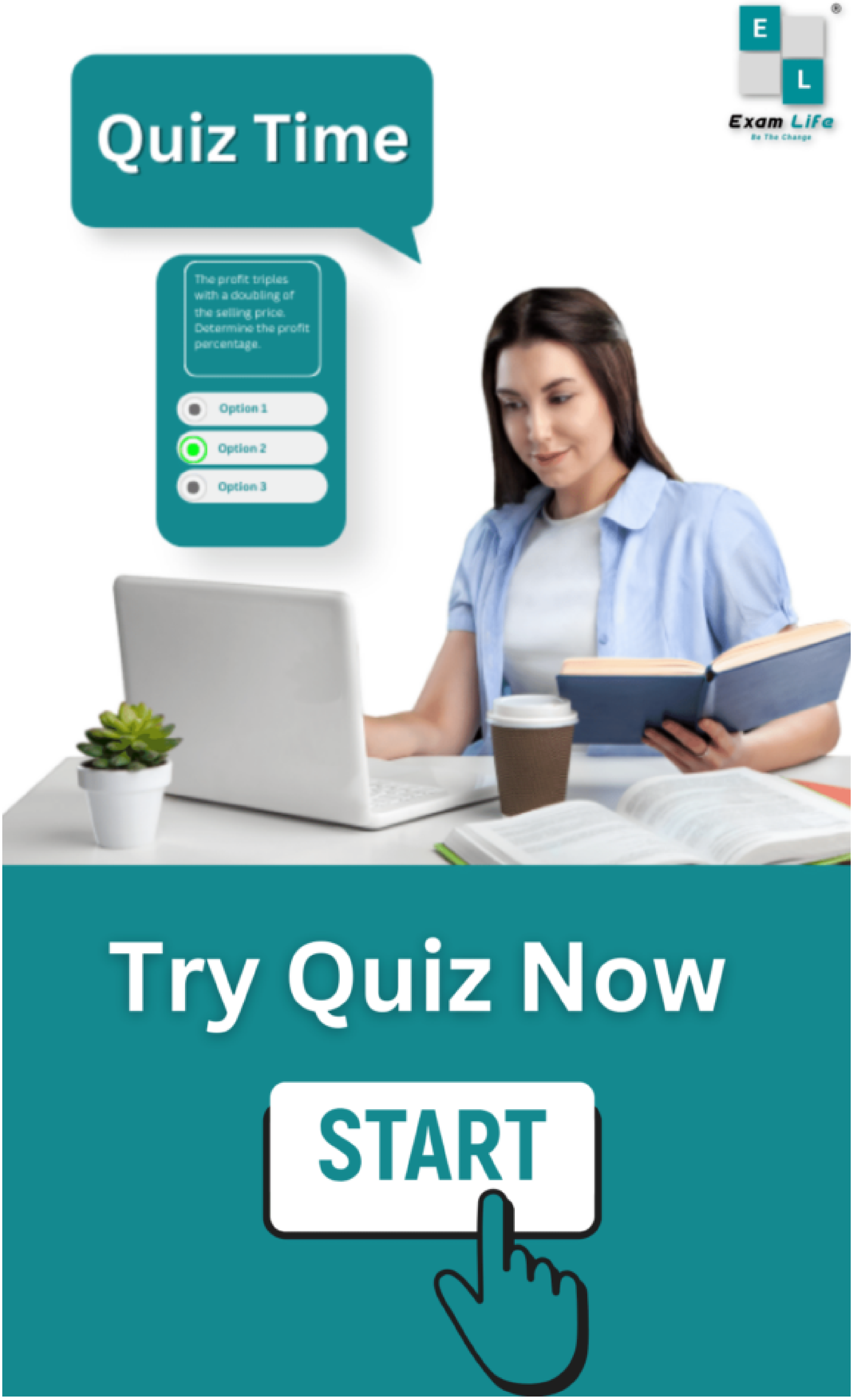
## *Mains:*

- **General Studies Paper III (Indian Economy):**Infrastructure Development: You could analyze the SCL revamp project as part of India's infrastructure development initiatives in the technology sector. Discuss its potential impact on the domestic electronics industry and economic growth.

Science & Technology: Briefly touch upon the importance of semiconductors in various sectors and the government’s push for self-reliance in this critical technology.

- **General Studies Paper IV (Science & Technology and Disaster Management):**Science & Technology in Everyday Life: You could discuss the role of semiconductors in powering various electronic devices and appliances we use daily. Briefly mention the SCL revamp as a step towards domestic chip production.

  Government Policies & Initiatives: Analyze the SCL project as part of the government’s policies to promote indigenous technology development and reduce dependence on foreign imports.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The profit triples with a doubling of the selling price. Determine the profit percentage.

○ Option 1

● Option 2

○ Option 3

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