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SUBJECT:	ESSAY	Test Code:	1	0	7	8
Name of Candidate	Deepak Kumar Dubey					
Medium Hindi/Eng.	ENG	Registration Number	7	4	6	3	1	
Center	ORN	Date	1	0	0	9	1	8

INDEX TABLE

Q. No.	Page No.	Maximum Marks	Marks Obtained

Total Marks Obtained:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. All questions are compulsory.
   सभी प्रश्न अनिवार्य हैं।
3. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
4. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
5. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
6. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

~~Why India~~

Section A

2.

Why Doesn't India Have Its Own Silicon Valley

Srijan and Rachna are 2 colleagues who work at Intel's sprawling campus in ~~Bangalore~~ Bengaluru. Srijan is a hardware engineer, who designs electronic circuits and chips, and the logic on which the chips function. Rachna is a software engineer, who develops embedded systems software, i.e. the software code that controls the processor chips that Srijan designs.

They often meet in the company cafeteria. A frequently discussed topic is why India doesn't have its own Silicon valley. Their employer is headquartered ~~in~~ in USA's Silicon Valley in California. The intellectual property that they generate is owned by Intel, an American firm. The billions of dollars of profits that

the products designed by Srijan and Rachna generates, primarily benefits American investors and the American Economy.

They further discuss that India has most of the ingredients that make up a silicon valley - research institutes of excellence like IITs and IISC, trained and creative engineers like them, domestic capital base, huge demand for electronic that India has, and so on.. However, there are also some teething troubles that prevent India from having its own Silicon valley.

What these troubles are? How has not having own silicon valley affected India? what needs to be done so that India like USA, or Taiwan, or Japan and South Korea become a leader in electronic industry, building upon its silicon valley? These are the issues we will discuss in this write-up.

Silicon Valley : Key Ingredients

The Electronic System Design and Manufacturing (ESDM) industry, like any other industry needs some essential ingredients. The first and foremost is raw materials - ie silicon wafers. These are produced in silicon foundaries - or fabrication facilities (Fabs). The Fabs not only produce silicon wafers, but also manufacture silicon chips based upon the codes developed by engineers like Srijan and Rachna.

Modern Fabs - like ones owned by Intel or Taiwan Semiconductor Manufacturing Corporation (TSMC) are highly automated and capital intensive. Moreover technology used in production process by these fabs is constantly evolving as chips become smaller and smaller, packed with billions of transistors. Thus huge capital base and superior technological know-how are 2 additional ingredients.

Another key ingredient is superior research prowess. Silicon valley in the

USA was built upon research done in corporate set-ups like Bell Labs and educational institutions like MIT and Stanford. University of California at Berkley further supplies a vast pool of trained engineers and Ph.Ds. to the Silicon valley. Thus superior research prowess and lab-to-industry linkage are 2 more ingredients.

Intellectual Property protection through stringent patent laws, hassle-free export process with low duties and low taxes as well as various tax incentives are additional ingredients. In fact Taiwan, and off late china, has been able to develop superior ESDM capabilities based upon regulation-light and tax incentives-heavy environment.

Like any other industry, demand is one of the most important ingredients for the ESDM industry. An industrializing economy as well as export demand from all across the world helped create demand for electronics developed in the

Silicon Valley.

Last but not the least, a silicon valley requires an integrated ecosystem. The ecosystem consists of many small firms (MSMEs) that provide and develop components and Intellectual Property (IP). The ecosystem ~~was~~ must also provide good living condition and smart urban mobility as well as superior education, healthcare and recreational facility for workers. The ecosystem promotes an exchange of ideas and leads to synergies that lead to fast development of the industry.

These are the ingredients that that the Silicon Valley of the USA provides, and many of these ingredients the silicon valley of India - Bengaluru lacks.

India's Silicon Valley : Teething Troubles

First and foremost, India lacks the advantage of an early start that USA and Taiwan enjoy in the ESDM industry. In the 1970s and 1980s India was characterized by license-quota-permit raj that was heavy on regulations

and bureaucratic hurdles. Foreign capital was abhorred and domestic capital was not available in plenty. Skilled labour was not available and Research was in nascent stages. Thus it is said that India missed the microelectronic bus in 1970s that Taiwan and USA boarded with ease.

Now capital is available in plenty - both domestic and foreign. India has its own vibrant Dalal Street to rival Wall Street that played a key role in USA's Silicon valley development. However, the cost of capital remains high in India. In USA, a corporation like Intel can raise debt at 4-5% interest for 10 years, while in India, it is minimum 10%, even for big corporation.

Not only cost of capital, but taxes on earnings are also too high in India - about 34% (including surcharges) compared to 15% in the USA.

While post-LPG reforms have led to easing of regulations and permissions - many procedural and

bureaucratic hurdles still remain and it takes a lot of time to obtain all the clearances for starting a business. The cost of electricity is high for firms and 24X7 quality power is not assured. Land acquisition is costly and time-consuming and getting construction permits often needs greasing some palms. These reflect in poor Ease of Doing Business rank (100), although it is improving fast. High export duties and hassles at airports and ports in clearing customs is another issue.

One of the key issues is the research and innovation environment. Indian education system is based upon rote learning to pass examinations and obtain degrees, and does not promote innovation and discovery. The research output as characterized by the number of patents filed and number of journal publications remains low. Moreover, Indian Institutes of research excellence have become quintessential Ivory Towers and work in silos.

The siloed approach and lack of linkage between research institutes and incubators and large corporations hampers the culture of innovation.

The intellectual property regime remains weak and patent processing time very high - upto 4 and 5 years. 4-5 years represents almost a generation in the ESDM industry where technology is evolving fast and products and processes become outdated in no time.

Lack of urban infrastructure and ease of living in the cities further exacerbate the problem. Bangalore - India's silicon valley - is characterised by mega traffic jams, polluted lakes that spill toxic froth and catch fire, and water supply situation that is becoming worse by the day. An innovation ecosystem cannot thrive in such an environment.

Having looked at the troubles that prevent India from having its own silicon valley, we will now discuss possible remedies.

Making a course-correction: key steps

While tax breaks and incentives to big corporations are often despised in developing countries, they are definitely needed for ESDM industry. China and Taiwan are a case in the point. The long run multiplier effects due to jobs created, innovation, import substitution are substantial.

Recognizing this Government of India has rolled out its own tax break – the M-SIPS (Modified Special Incentives Package Scheme), however the corpus of about 1500 crore remains too small. States also must supplement centre's efforts. Maharashtra rolled out a big incentive package for Foxconn – the leading contract electronic manufacturer of the world for its $5 Billion plant.

The patent regime and intellectual property regime needs to be bolstered. IP needs to be fiercely protected and litigations need to be resolved quickly. The Intellectual Property policy-2016 is a good start, but it needs to be implemented

on ground in letter and spirit.

The regulations regarding land acquisition, construction permits and electricity connections, labour and environmental protection needs to be made light, especially for ESDM industry, which is a low-pollution industry.

Research, Innovation and skill development are other areas that need urgent revamp if India were to develop its own silicon valley. Higher education must attract and retain good quality researchers and provide them intellectual freedom, autonomy and incentives to undertake cutting edge research. PM Research Fellowship is definitely a much needed intervention.

The research labs and incubators must undertake ESDM industry-relevant research and commercialisation support should be provided by the Government as well as the industry. Uchchtar

Anishkar Yojana targets precisely that and must be expanded. Moreover, India must skill workforce to prepare them for the ESDM industry at large scale and with speed. PM Kaushal Vikas Yojana needs to focus more on the electronics industry.

Finally, liveability in key metros like Bengaluru - the silicon valley of tomorrow - must be improved with sustained efforts of the Central and State Governments as well as Urban local Government bodies.

All these steps can ensure that India has a good shot at developing its own silicon valley.

The world is changing fast and the digital economy is changing faster. The world of tomorrow will be even more interconnected, characterized by smart devices, autonomous vehicles, Internet-on-things and Artificial Intelligence. This world would be based upon a proliferation of electronics.

If India were to become a world leader in this interconnected world, developing its own silicon valley is crucial.

India has many ingredients in place, and it needs to overcome certain challenges. Those challenges, as we saw, are not unsurmountable. If India can overcome them, it can be a world leader in the information age - where smart and talented Indians like Srijan and Rachna work in India's own silicon valley, generate IPs owned by Indian firms and produce products and services that power the digital economy of the whole world!

Section B

2. Export Led Growth in India: Vision And Reality

Uttam is a weaver producing finest silk sarees. He lives in Chanderi, Madhya Pradesh and ~~works in~~ owns a small handloom where generations of his forefathers have worked, producing Chanderi silk sarees admired the world over for its fine quality. His clientele consits of Indian diaspora the world ~~over~~, but the main demand from the USA. His vision is ~~the~~ to expand his workshop, employ at least 2 dozen workers, and export to ~~other~~ countries other than USA. He also wants to diversify his product offerings to women's scarves and tops, but ~~off~~ he faces multiple export challenges that hamper the fulfilment of his vision.

His shipment gets detained at the port for many days, the paperwork

that he has to do consumes a lot of time, the shipment often gets damaged, and due to all these factors, he is losing orders.

He further finds it difficult to market his products, the expert support is missing, and he faces a lot of difficulty in obtaining timely credit.

Uttam's story is among one of the many such stories about why India is not able to fulfil its vision of export-led growth. In the context of slow export growth and widening current account deficit, this issue merits deeper discussion.

In this essay, we will discuss the promises of export led growth, and its potentialities for India. We will discuss the vision that India has and compare it with the reality. We will finally delve into the steps India can take to realize its vision.

Export-led growth: Promises and Potential

Trade has become the life-blood of the global economy. The global trade in goods amounts to $35 Billion, about 40% of global nominal GDP. Trade in services adds another $10 Billion. Global trade is based upon the reality that resource endowments of different countries differ substantially. Saudi Arabia is rich in its oil and gas endowment, while India generates an agricultural surplus of about $35 Billion, & building upon its abundant land and water resources - something which Saudi Arabia lacks. So, India and Saudi Arabia can both benefit if they trade - the former exporting surplus food and the latter exporting surplus oil.

Ricardo calls it the Theory of Comparative Advantage - each nation producing what it can produce best and trading it for those that it can't. This has led to proliferation in

global imports and exports. It has also led to the development of global value chains, where different components of the same good are manufactured in different countries.

Clearly, India has a lot of exportable surplus other than agricultural produce. It is richly endowed in many minerals that are key ingredients of capital goods industry - eg iron ore feeding steel plants (SAIL) and then capital goods plants (BHEL). Steel as well as machinery can be exported to earn foreign exchange.

Moreover, India is endowed with one of the most precious of all resources - its burgeoning labourforce. Its knowledge workers have already made a mark in the global IT industry and our IT exports alone amount to $120 Billion.

If India can harness this demographic dividend by arming its workforce with industry-relevant

skills, it can emerge both as a 'factory of the world' as well as 'knowledge Hub of the World'. Thus employment potential of exports sector - both goods and services - is immense.

Providing gainful employment to the workforce is the most important tool to fight poverty. It was on the basis of export-led-growth that China was able to pull millions out of abject poverty. There is no reason why India cannot do the same.

Exports also contribute to GDP growth by increasing aggregate supply in the economy. They also make economy more stable by bridging the current account deficit - something India desperately needs. Export help earn foreign exchange and support a strong currency. Further, MSMEs account for 40% of India's growth and export led growth would immensely benefit MSMEs that are mainly based in rural

areas. Export led growth can therefore be an important tool to fight rural distress.

Increasing incomes and prosperity will further lead to better educational and health outcomes for the countries and put India on a path to sustainable development.

Export-led growth: The vision

India's exports have increased from less than $10 Billion in 1990-91 to almost $500 Billion in 2017-18, $303 Billion in goods and $192 Billion in services. However, this is far below the potential.

The foreign trade policy 2015-20 aims to achieve $900 Billion of exports by 2020. This seems difficult to achieve now, unless exports can grow at almost 35% annually. Further, the 2015 policy, as well as previous trade policies have envisaged diversifying India's trade basket as well as

trade destinations, but India's exports remain concentrated towards developed ~~economy~~ economies, especially Europe and USA. Top 15 destination countries account for about $\frac{2}{3}$rd of exports and exports to Africa and Latin America are not as substantial.

Export led growth further envisions building domestic capabilities in manufacturing through Make IN India scheme, so as to increase share of manufacturing in GDP to 25% by 2022. The Capital Goods Policy - 2015 further aims for not only import-substitution in India's machinary needs, but also exports of heavy machinery to other nations. Similar is the vision of Steel Policy - 2016 that aims to substantially increase India's steel exports.

In services, Tourism, IT, Banking and outsourced services hold immense

export potential. The 'Champion services Sector' scheme has identified 12 sectors that would be promoted using 5000 crore ₹ package.

Coming back to agriculture, allied activities, especially dairying and fishing hold immense potential. The BLUE REVOLUTION programme can improve india's fish export and benefits lakhs of fishermen. Food procesing is another sunrise sector that is hold great promises for export-led growth.

Export-led Growth: The Reality

The reality of the export sector, however, is characterized by many presing problems that hamper the realization of the vision of export led growth, as the case of Uttam shows.

Poor infrastructure is one of the key reasons hampering exports.

Poor power availability and quality, lack of good roads and ports and congested road and rail network increase the cost of goods and make them uncompetitive. The logistic cost in India is 14% of the GDP vs. 8% for China and Western European countries.

Not only cost of doing business, but also the ease of doing business is also poor. Many export-intensive manufacturing firms get entangled in dealing with the plethora of permits, clearances and permissions required to start and run the business. This eats into productive time and managerial focus.

Similarly, the custom clearance delays at ports and airports, lack of cheap and assured credit, lack of good marketing linkages with the final consumers further erodes the demand as well as competitiveness of

Indian Goods.

~~At the same time,~~ The global economy is still recovering from the after-effects of the 2008 global financial crisis, leading to subdued demand. Protectionism and nativism in many countries, most notably the USA can further erode demand and affect exports. Similarly, Indian IT sector is facing headwinds due to restrictive and protectionist visa policies in many western nations.

Automation and fourth industrial revolution further exacerbates challenges for export led growth. Automation has made production cheaper in many western countries where labour is being replaced by machines. Fourth Industrial Revolution, characterised by technologies like Artificial Intelligence, Robotics, Internet of Things presents unique challenges for Indian IT industry, that

has suddenly caught offguard when world is transitioning to newer technologies. These developments can further hamper exports from India.

Export-led Growth: The Way Forward

Fixing the slow export growth must start from fixing infrastructural issues. Better infrastructure will reduce the cost of doing business and even attract export-oriented foreign firms through FDI.

Easing labour regulation, reducing the burden of red-tape and clearances and improving the ease of doing business will further boost exports, lead to opening of new enterprises and create jobs.

The labour force must be skilled ~~so as~~ to cater the demand of export-oriented sectors. Champion services sectors like tourism, banking, accounting and process outsourcing need focused

attention.

Free Trade Agreements as well as multilateral agreements like RCEP must be negotiated keeping India's export promotion in mind. India should further pressurize other countries to provide better mobility of skilled Indian professionals that currently face a lot of visa and immigration hurdles. We must also search for newer destinations for our products.

To conclude, India's exports have grown immensely in the post-liberalization period, but the potential remains unfulfilled. Exporters like Uttam, as well as bigger and more organized firms face hurdles alike. India's export-led growth vision will remain a cherished dream unless concerted actions are taken to remove the hurdles. If Central and State Governments can work together to

remove the bottlenecks, exports have the potential to become an engine of economic growth in years and decades to come.

Why no Silicon Valley

→ High Investment, but
  → Regulations & permissions
  → Cost of Capital
  → Supportive Infra
  → Tax incentives initially → high taxes (14.8%) & duties
- Power cost
→ Education System
  → Innovation vs. rote
  → Lab to firm; incubators → PhDs
→ IP regime
  - + litigations
→ Ecosystem
  - Good living conditions
  - transport
  - Supplies
  - Innovations through cooperation
→ Early start and Inertia
→ Developed industry.

Why doesn't India have its own Silicon Valley

Srijan and Rachna → 2 colleagues
- Work in Intel, Bangalore
- One ~~designs chips using~~ the logic codes on which chips work; one works in embedded systems.

Srijan → chip design → logic

Rachna → embedded software → logic that controls the chip

What they write → ends up in our computers as processors → packed with billions of transistors; ~~They often discuss~~

IP → owned by Intel, headquartered in Silicon Valley
Market leader

They often wonder why
- India does not have its own Silicon valley
- How this handicap impacts India
- What needs to be done (Way Fwd)
- Conclusion.

Export-led growth in India- Vision & Reality

-The story of Uttam

Issues

Shipments; → ~~domestic courier company~~

→ Chanderi to Mumbai; Mumbai Port, USA