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GENERAL STUDIES			
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INDEX TABLE			INSTRUCTIONS	
Q.No.	Max. Marks	Marks Obtained		
1			1. Please do furnish Name, Email, Roll No. and Mobile in the answer sheet.	
2			2. There are TWENTY questions printed in ENGLISH, all questions are compulsory.	
3			3. The number of marks carried by a question/part is indicated against it.	
4			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.	
5			5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be struck off.	
6			Any specific messages for Educrat IAS Mentors/Evaluators with respect to your copy? Write here.	
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20			Mode of Examination:	Online <input type="checkbox"/> Offline <input type="checkbox"/>
Total Marks:			ECN CODE:	Evaluation Date:
Remarks:				
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="color: blue; font-weight: bold;">Educrat IAS Academy Pvt. Ltd.</div> <div style="text-align: center;"> <p style="font-size: 2em; font-family: cursive;">Checked</p> <p style="color: blue; font-weight: bold;">Director</p> </div> </div>				



Q.1) Stating the issues associated with agricultural extension in India, discuss the role of Krishi Vigyan Kendras (KVKs) in strengthening the national agricultural research extension system. (10 marks)

Krishi Vigyan Kendras (KVKs)

are centres to educate farmers of technological adoption in farming with the aim of 'Lab to Land'

Issues with agricultural extension in India

Communication gap

- lack of infra  
- low st ending  
- peer  
- lack of awareness  
- peer

→ farmers are unable to understand and trust scientists, who are unable to understand grassroots concerns of farmers

Insurance for trials

→ farmers do not have source of additional income, if agricultural extension fails

Traditional reasons  
eg - Farmers are unwilling to change traditional practices

replicable

Other issues like, trial period is less remunerative reducing farmer interest, low replicability of successful experiments, etc

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## Role of KVKs in strengthening agricultural extension

Agricultural extension can be understood as replicating lab results in agriculture to boost productivity, revenues, etc.

Role of KVKs can be discussed as →

- 1) Building congruence between scientists and voluntary farmers
- 2) Rewarding farmers willing to take experimental risk *low?*
- 3) Centre for grievance redressal and clearing of any doubts of farmers
- 4) KVKs allow continuous monitoring of farmer's lands.

The KVK network plays a vital role in the fulfillment of Jai Kisan, Jai ~~Abu~~ Vigyan, Jai Anusandhan

- on farm  
- field  
- new crops  
- application  
of agri  
research  
- training

(5)

Q.2) Despite having definite foundational objectives in respective fields, the ISRO as an organisation proved more successful than the DRDO. Discuss. (10 marks)

ISRO, DRDO have been considered as temples of modern India, by PM Nehru for their role in ~~good~~ the nation's advancement. However, ISRO has met with greater success than DRDO

ISRO  
• international collaboration.  
• structure allows vertical integration.

Reasons why ISRO had more success

Funds  
Most defence funds went for procurement

Talent  
→ ISRO has seen great scientists like Bhabha, Sarabhai, Abdul Kalam

Autonomy  
→ ISRO had greater autonomy, and greater professionalisation - free from bureaucratic meddling.

Incessant wars  
→ Due to continuous wars, DRDO was hard-pressed for short-term results, rather than long-term approach

Also, for ISRO, the focus was more on creating indigenous output, while DRDO had to focus on collaboration and mimicking foreign arms and its repairs.

So, DRDO could not develop the scientific capability like ISRO

### Way forward

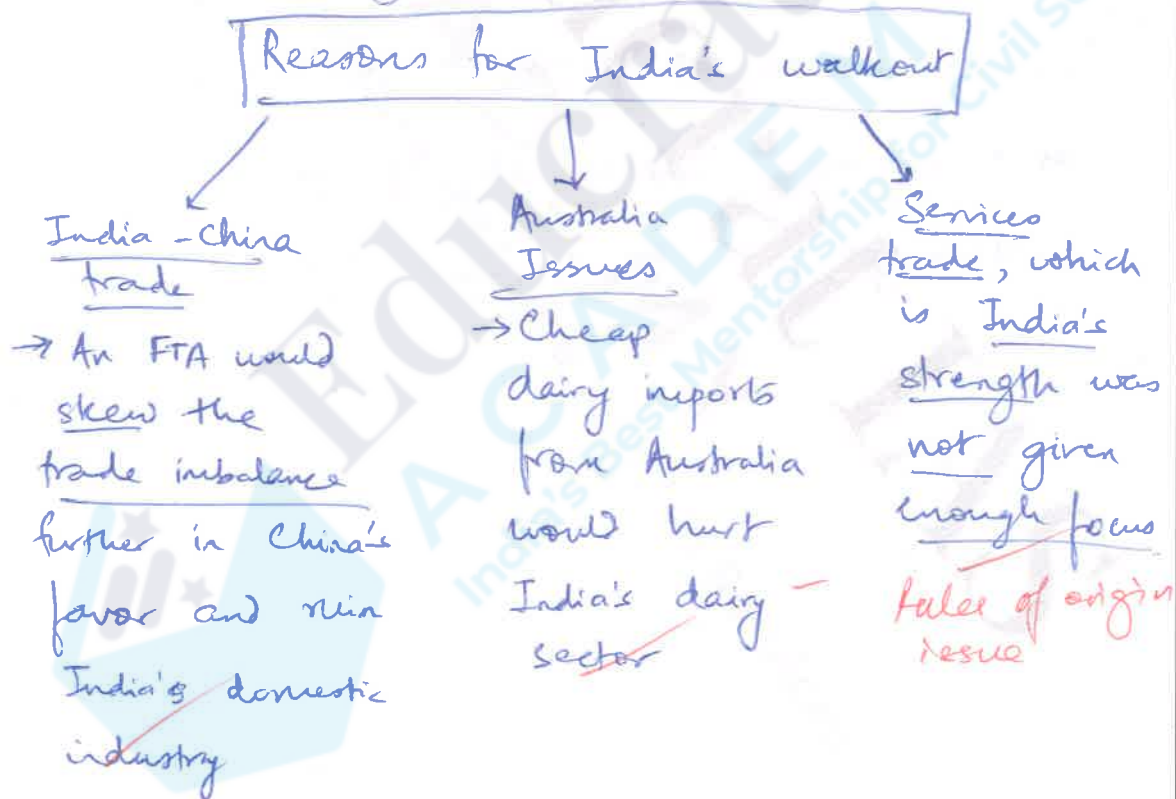
- Greater corporatization of DRDO and more autonomy
- Formation of a separate branch / organization in DRDO with long-term vision
- Allowing collaboration of ISRO and DRDO for deliberation of ideas and transfer of culture

The recent focus on indigenization of defence with \$25 bn production target by 2025 aims to position India as a defence major. And very soon, DRDO will earn similar laurels like ISRO

Q.3) India's refusal to join the Regional Comprehensive Economic Partnership (RCEP) highlights its tendency for calibrated globalization. Comment. (10 marks)

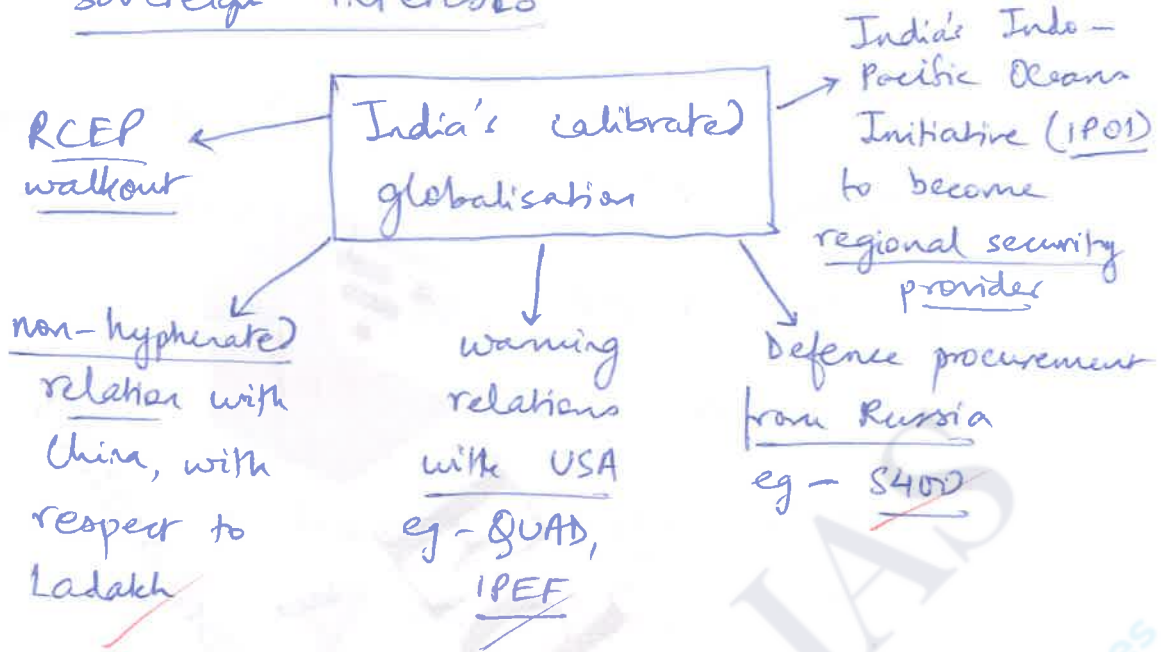
After a long period of discussions and debates, India finally walked out of the RCEP, which <sup>what is</sup> started functioning with India. RCEP??

India's refusal stumped many who considered India on the path for greater globalization and integration.



This highlights India's calibrated globalization — globalization, but based on

## Sovereign interests



Thus India's approach reflects, India has no permanent friends or ~~enemies~~ enemies, but only permanent interests in globalization.

2



Q.4) In India, the food processing sector is emerging as a high-growth and high-profit sector due to its immense potential for value addition. Discuss. (10 marks)

The food processing sector has an important role in India's economy for value processing of crops, food items. This generates greater export value and income for farmers.



Way forward →

- a) Greater ~~credit~~ credit flow
- b) Easy approvals for industrial establishments
- c) Regulatory body for remunerative benefits of farmers
- d) Law for corporate farming is needed.

mention  
some issues  
too

6.5

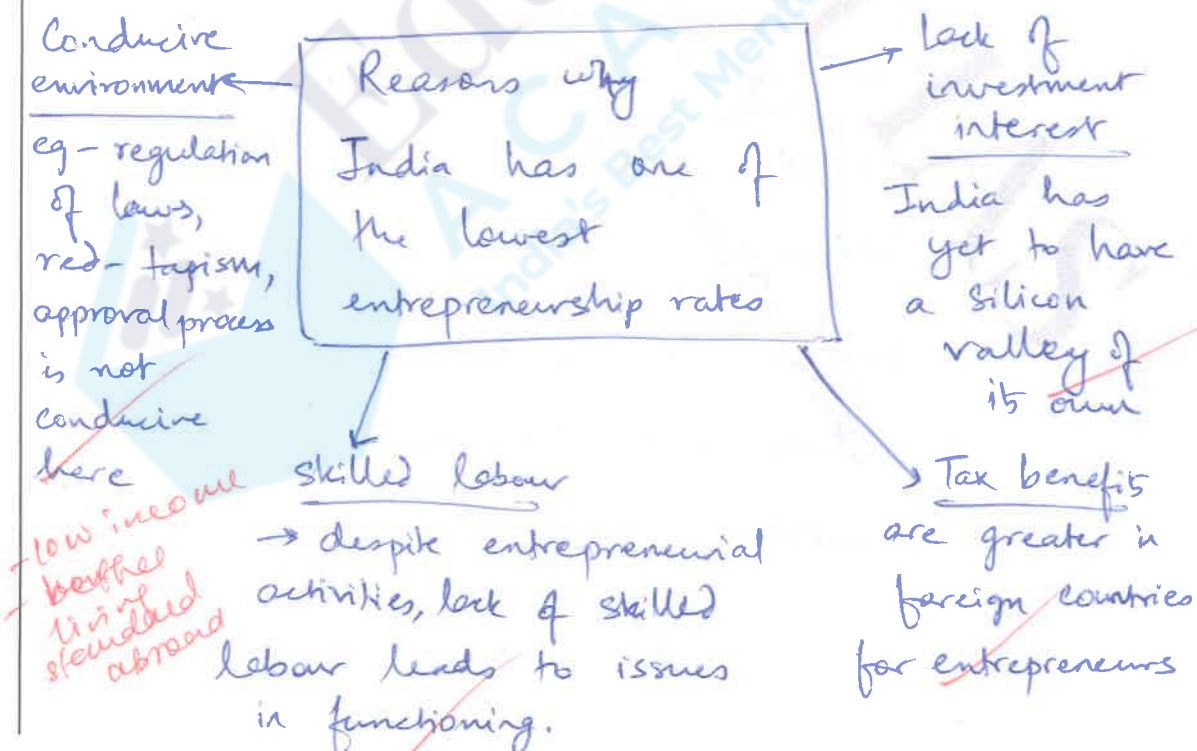


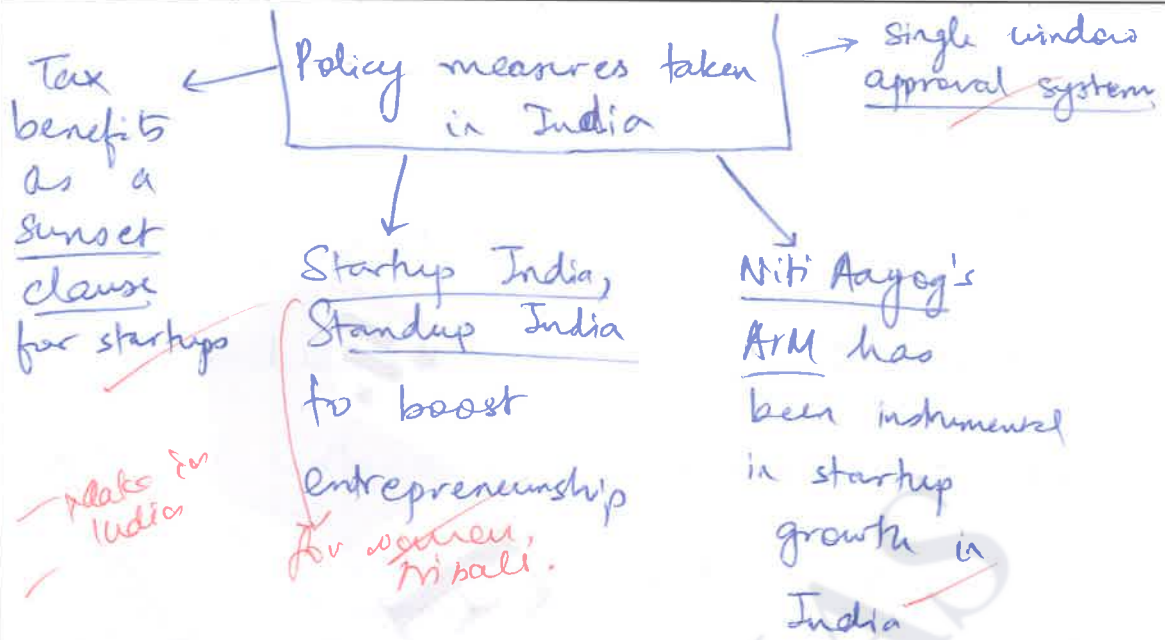
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Q.5) While Persons of Indian Origin (PIO) are spearheading entrepreneurship across the world, India still has one of the lowest entrepreneurship rates. Discuss. Also, state the policy measures that have been taken to increase the pace of entrepreneurship in India. (10 marks)

Persons of Indian Origin (PIO) are individuals who have Indian origins, but have moved to another country and left Indian citizenship. PIOs are behind many entrepreneurial and scientific developments in the world.

Eg - Sundar Pichai is the CEO of Google, Satya Nadella is the CEO of Microsoft.





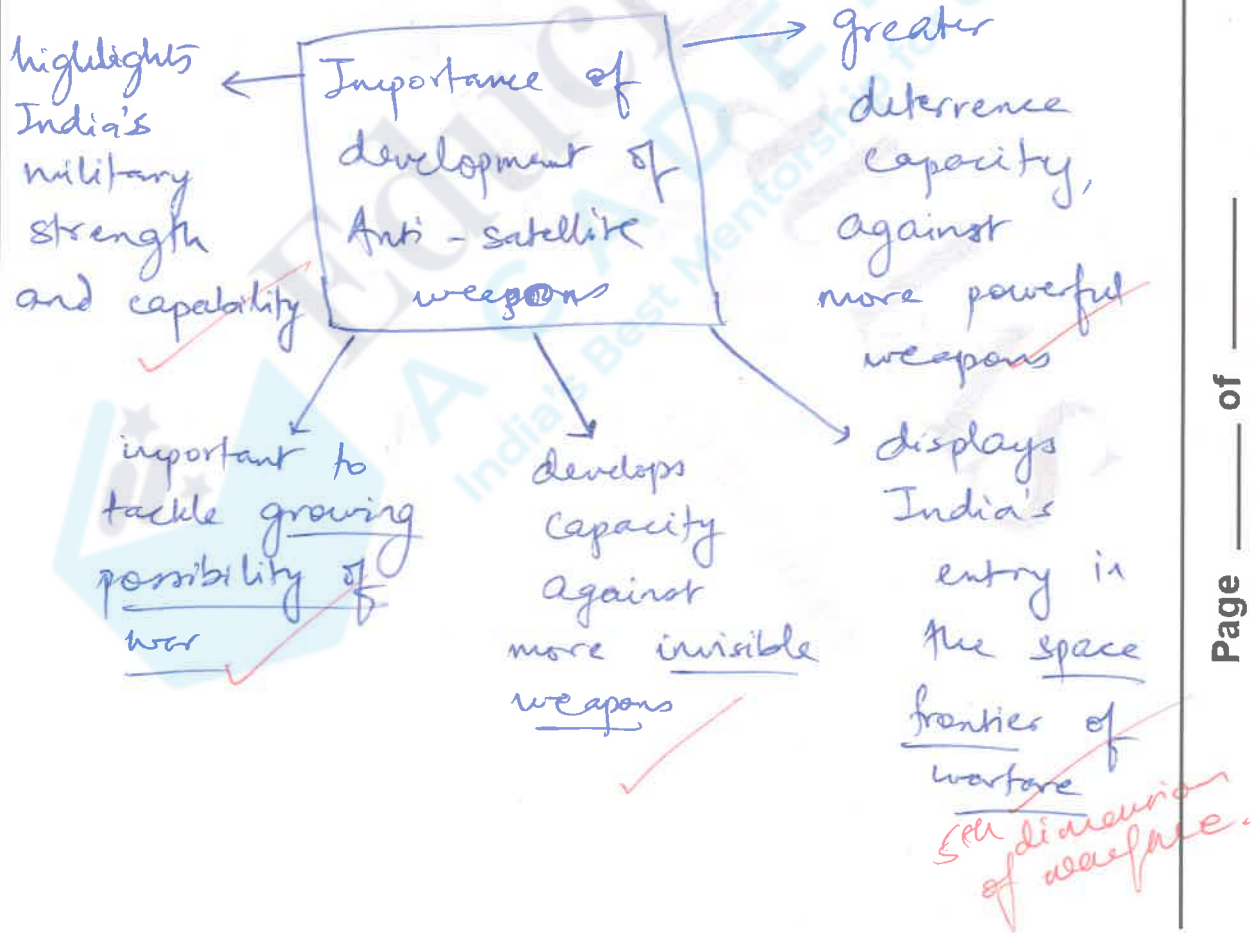
Organizing hackathons to generate interest among students, improved academia-industry interface, easier credit flow through Mudra Yojana are some of other measures taken.

India needs to develop its startup ecosystem, and from the 3<sup>rd</sup> largest, become the 1<sup>st</sup> largest ecosystem. Policies should be undertaken to ensure that it does not become a bubble about to burst.

Q.6) Analyse the importance of the development of Anti-satellite weapons for strategic military purposes. Will India's Anti-satellite weapon test spark an arms race in space? (10 marks)

India is one of the few countries in the world, including US, China, Russia, who have developed anti-satellite missile capabilities

India's recent Mission Shakti is proof of its anti-satellite capabilities.



Scope of India's  
Anti-satellite test sparking an  
arms race in space

mention that  
it can be easy  
for the Korea, Pak  
to dev but

1) Technological issues don't allow

most countries from developing such  
weapons

2) Expensive development process

3) Arms race in space is not  
fully developed and no immediate  
danger.

India's deterrence laws/policy of

no-first strike should not spark an  
arms race in space, despite this test

there, this is something to be proud  
of and not worried of its dangers

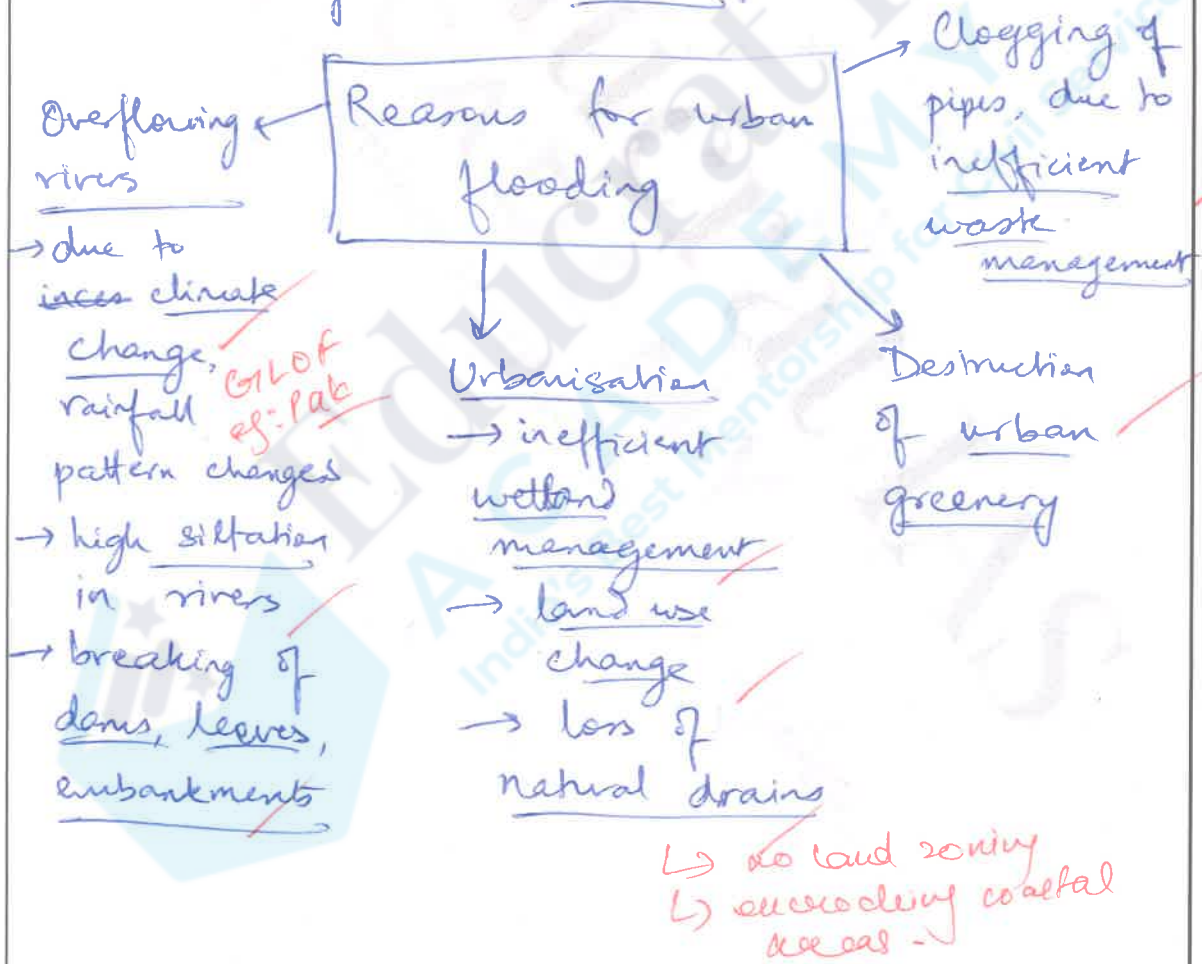
mention that  
India is  
peaceful  
uses of  
outer space  
Treaty  
along with  
other countries

need better  
conclusion

16/11  
2

Q.7) The problem of flooding in urban areas is not only due to overflowing rivers, but also the uninformed ways in which our cities are coping with urbanisation. Discuss. In this context, mention the National Disaster Management Authority guidelines on urban floods.(10 marks)

Urban floods are a growing phenomenon and India is poised to become the world's flood capital in the coming years, according to WMO.



## NDMA guidelines on urban floods

- flood walls, embankment
- channel improvement
- laws to protect natural drainage
- mapping
- cooperation with upstream nations
- Reclaim wetlands

→ focused on providing respite and rehabilitation

→ quick redressal and relief through supply of medicines, necessary items

→ early warning system of floods is utilized *- real time basis*

→ mobilization by NDMA volunteers and NDMF

The NDMA guidelines do not focus on disaster mitigation. A collaborative approach for flood management between NDMA and municipal councils are needed

5.5



Q.8) State the reasons behind targeting of Critical Information Infrastructure (CII) by state and non-state actors. Also, discuss the steps taken by the Indian government to secure its CII. (10 Marks)

Critical Information Infrastructure are elements of information technology that are very critical for exchange of information and maintenance of the IT-network.

bethe  
centro.

Eg- ISPs, data service providers,  
eh

Reasons behind  
targeting of CII:

(A) By State actors

Getting govt  
attention to  
fulfil demands

Highlight governance  
issues and seek  
redressal.

eg- farm laws  
agitation attacked  
Cell towers

(B) Non-state actors

Denial of  
service/attack  
Disruption  
of internet  
network

Causing  
economic losses  
and loss of lives  
eg: Mumbai  
hospital

Spread  
terrorism and  
reduce faith  
in govt

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## Steps taken by govt

- Laws to prosecute against destruction of govt property
- surveillance of CII to protect against external & internal threats
- making robust infrastructure through recommendations of CERT-IN
- indigenisation of hardware to protect against backdoors.

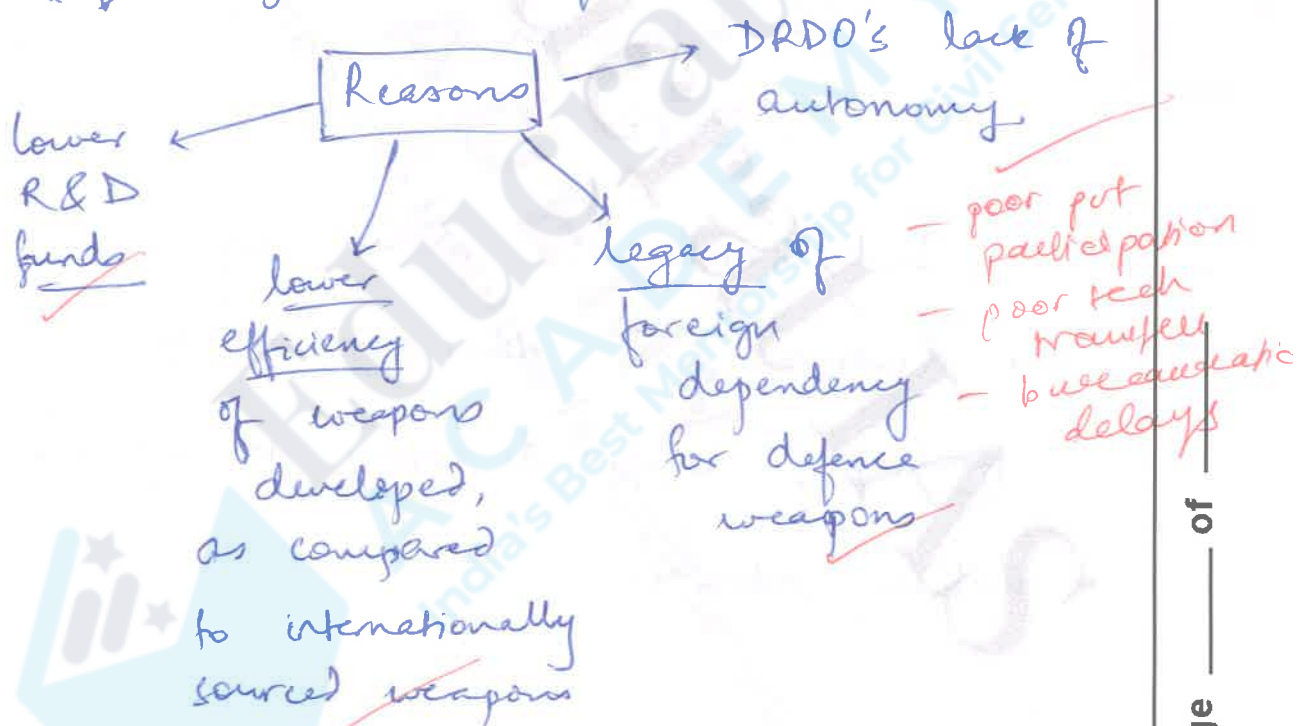
(5) CII are important for India's unity and integrity and greater efforts for their protection is needed.

- IT Act  
- NCIIPE

Q.9) Highlighting the reasons behind suboptimal results in indigenization of defence technologies in India, suggest measures which can accelerate the pace of indigenization in the defence sector. (10 Marks)

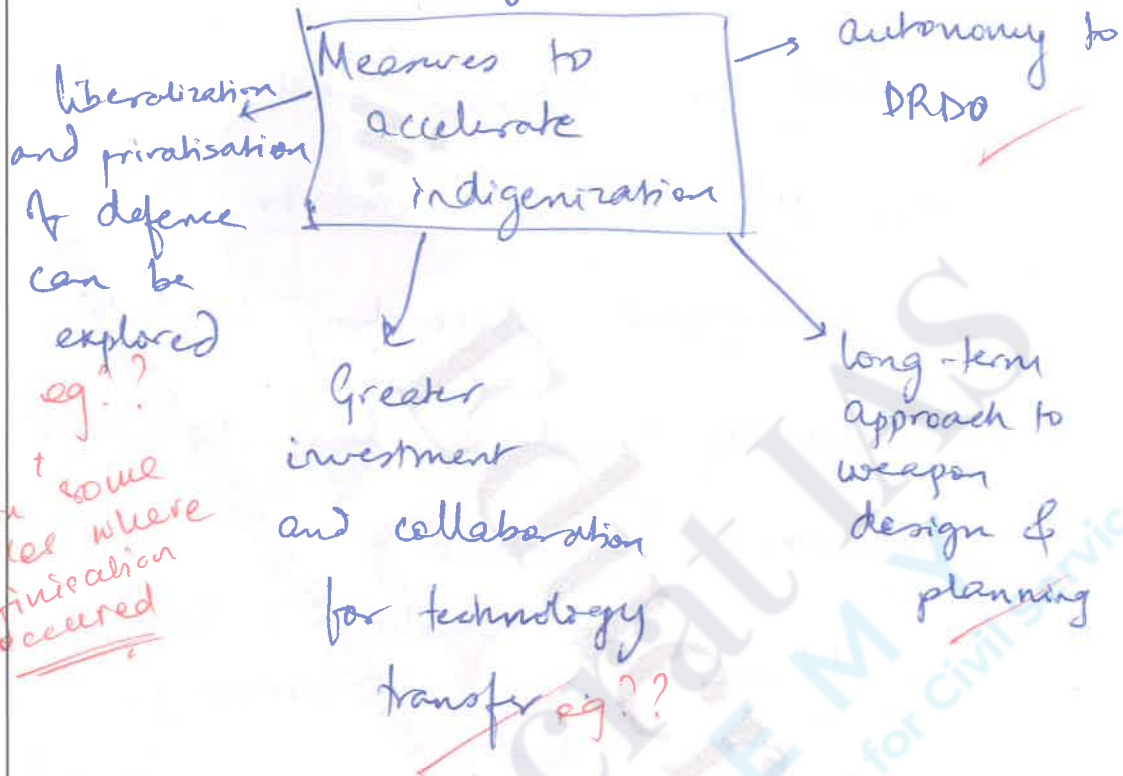
India spends about 2.4% of its GDP in defence sector, and is the 2nd largest importer of defence equipment according to SIPRI.

This highlights India's low dependence on indigenized defence.



Recently, India has focused on indigenization of defence by releasing a positive indigenization list and

targets for \$ 25 bn defence production by ~~2025~~ 2025

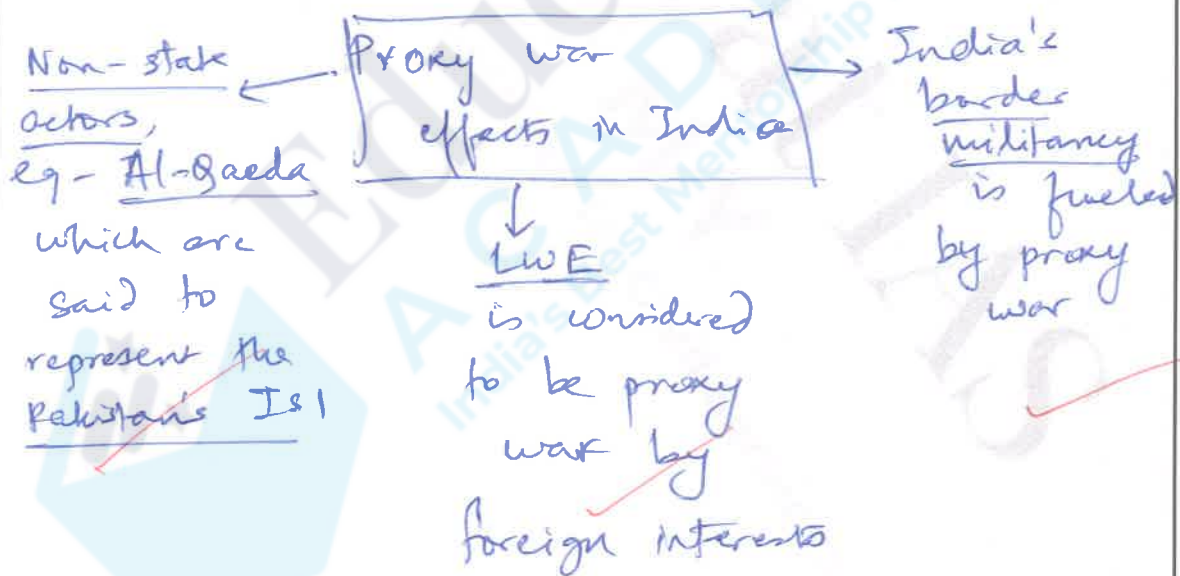


(b) India needs to reduce dependency on Russia and diversify weapon purchases, while developing its indigenous defence industry.

Q.10) What's a proxy war? Has it affected India? Examine. (10 Marks)

Proxy war is when countries do not directly engage in war, but indirectly fight using a third party. Eg - USA developed the Mujahideen force in Afghanistan to fight the Russians in proxy war

India has been subject to proxy warfare



India needs to develop better deterrence against proxy wars, through surveillance of

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border checkpoints, checking arms  
smuggling and better law and  
order enforcement,

- secessionist movement
- territorial incursion
- lack of meaningful dialogue.
- diversion of resources

W-5



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Q.11) Discuss the factors behind conceptualization of different Central Armed Police Forces for guarding the international borders. Also, highlight the contribution of these forces in ensuring security of India. (15 marks)

India has border disputes with some of its neighbours, eg - China, Pakistan and an unstable environment in the border areas warrants the presence of CAPFs for guarding the borders.

Eg - ITBP (Indo-Tibetan Border Police) at the India-China border, SSB (Sashastra Seema Bal) at India-Bangladesh Border, BSF (Border Security Force) at India-Pakistan Border.

7 forces mention  
2-3 lines about each-

Contribution of CAPF in ensuring security  
Factors behind conceptualization of different CAPFs for guarding international borders

- i) Innigration → by refugees eg - Rohingyas  
→ by non-state actors eg - terrorists.

The CAPF guards the borders to check illegal innmigration.

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2) Smuggling - India is at the centre of Opium Crescent and Opium Triangle and is a major <sup>drug</sup> smuggling hotspot

Also, smuggling of arms is checked

3) Stability - CAPFs ensure stable life in border villages <sup>eg:</sup>

4) Integrity of India by thwarting terrorist attacks

5) Human trafficking issues in India - Bangladesh border are also checked.

Factors behind conceptualization of different CAPFs

different specialization  
eg - terrain wise,  
type of warfare

localization  
→ to involve local population for local connect  
→ climate assimilation

different training  
→ to handle dissimilar situations

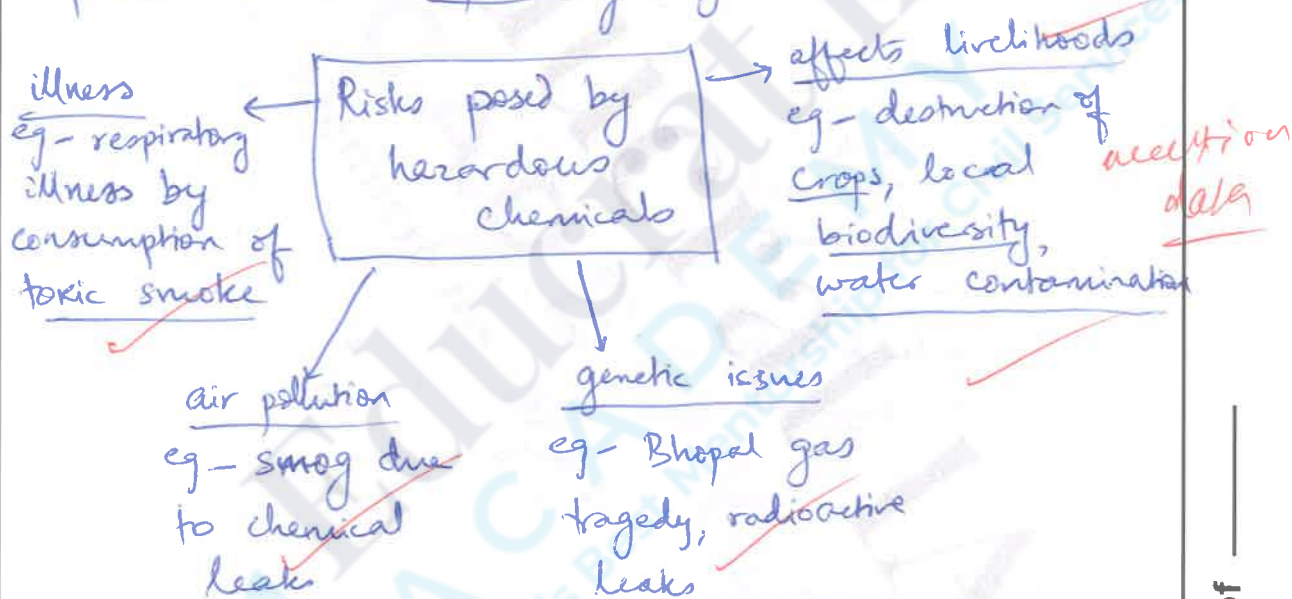
dissimilar powers  
eg - some CAPF are involved in security in border villages

<sup>better conclusion</sup> for The border police / CAPFs are recognized for surviving in harsh climates for the safety of the country, and <sup>they</sup> must be applauded



Q.12) Multiple chemical disasters from the Bhopal gas tragedy to gas leak in Visakhapatnam have brought into focus the risks posed by hazardous chemicals (HAZCHEM) in India. In view of this, discuss the preparedness as well as gaps in Chemical Disaster Management (CDM) in India. (15 marks)

India has been the witness of multiple chemical disasters since independence, which has resulted in death and injury of many, as well as problems in upcoming generations too.



Chemical leaks have the potential of making the entire area unsustainable for life and biodiversity. Eg- Chernobyl leak.

The recent Visakhapatnam gas leak <sup>styrene gas leak</sup> has brought into question Chemical Disaster Management plans.

# Preparedness in CDM in India

Execution drills and policies.

Industries have to attain NOC for leak safety, before operations

According to SC, it is the responsibility of the establishment to ensure no leaks, insurance, and will be held accountable

CDM in India has been mostly reactive, not proactive

work more  
- DDI NAF role  
- Petroleum felt  
- safe handling & transport & storage

Public Liability

# CDM gaps in India

social security of workers involved

quick redressal is absent  
eg - Union Carbide litigation is still ongoing

lack of automated shutdown systems  
eg - the Vizag plant failed to shutdown and continued leaking

factory operations in urbanized areas

delayed communication in case of leaks to avoid bad press

# Way forward

- India needs a robust CDM policy in place and strict adherence is needed
- Petroleum and Explosives Safety Organization (PESO) must expand its mandate to give guidelines for non-explosive leaks
- This is urgent for India's rapid industrialization and development

8.5

Q.13) India's power distribution companies and electrical grids must undergo reforms to transition from fossil fuels to more sustainable forms of renewable energy. Discuss. (15 marks)

According to IEA, India will overtake EU in 2030 to become the world's 3<sup>rd</sup> largest consumer of energy. However, India is still highly dependent on fossil-fuel based energy, today.

Reasons why discoms and grids must undergo renewable energy transition

1) Climate change -

Fossil fuel based energy → More GHG emissions → Greater impact on ozone and climate change

2) India's INDCs - Panchajanya, given by the PM at COP26, highlights India's goal of  
→ 50% renewable energy in power mix  
→ 500 GW of installed renewable capacity

3) ESG - Greater investor interest in environment, social and governance requires greater shift to renewables

4) Import cost - India imports 85% of its

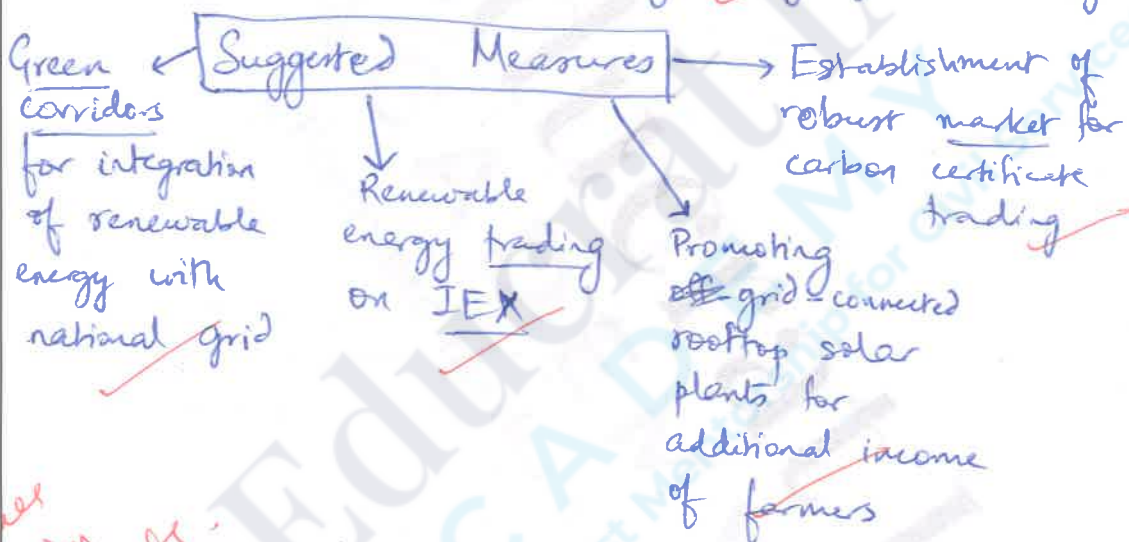
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crude oil requirement, and 53% of its natural gas requirement.

More renewables → less crude import → CAD improves.

5) International recognition as a clean energy user.

6) Others — RPO obligation of discoms, Renewable 100% targets of firms requiring only green energy.



mention same issues in 2 or 3 points.

Other measures include, rapid establishment of Ultra-mega solar parks (eg in Ladakh, Kanni of Kutch), R&D in renewable energy (eg - geothermal, tidal, etc), focus on green hydrogen as the futuristic technology

According to TERI, India needs to stop using coal-based energy by 2050 to meet its 2070 net-zero target, and so greening is urgent

Q.14) More than a year after the e-waste management rules were notified, there is little evidence that it is being implemented. Examine the causes behind India's problem of e-waste and the reasons due to which rules have been ineffective (15 marks)

The E-waste management rules aim to reduce wasting and dumping of electronic waste. India has <sup>give 2 marks</sup> one of the highest amount of e-waste generation, highlighting the importance of these rules.

However, the e-waste management rules have been largely ineffective.

Reasons behind India's e-waste problem

- 1) Population - Increasing smartphone penetration combined with high population leads to generation of huge e-waste.
- 2) Consumerism is on the rise, with the era of e-commerce and fast electronics. The rapid increase in technology makes 2-year old technology obsolete.

Page — of —

low segregation  
informal sector - 45%  
e-waste  
unavailable  
among countries.

3) Lack of repair ecosystem due to lack of right to repair and circular economy

4) Cheaply priced products ensure their availability

5) Lack of enforceable of rules for e-waste disposal. The e-management rules have been published very recently

8

Reasons for inefficacy of rules

repetitive

Lack of enforceability  
→ issue is rampant, despite rules

fails to tackle root issue of fast consumerism repeated

Lack of infrastructure for recycling of e-waste  
→ recycling can generate huge returns

difficult to balance penalizing polluters with growth focus

Way forward

- EPR  
- Deposit Refund Scheme  
- PRO to be effective  
- higher penalties.

Rules must be made enforceable. Ecosystem of change is required repeated

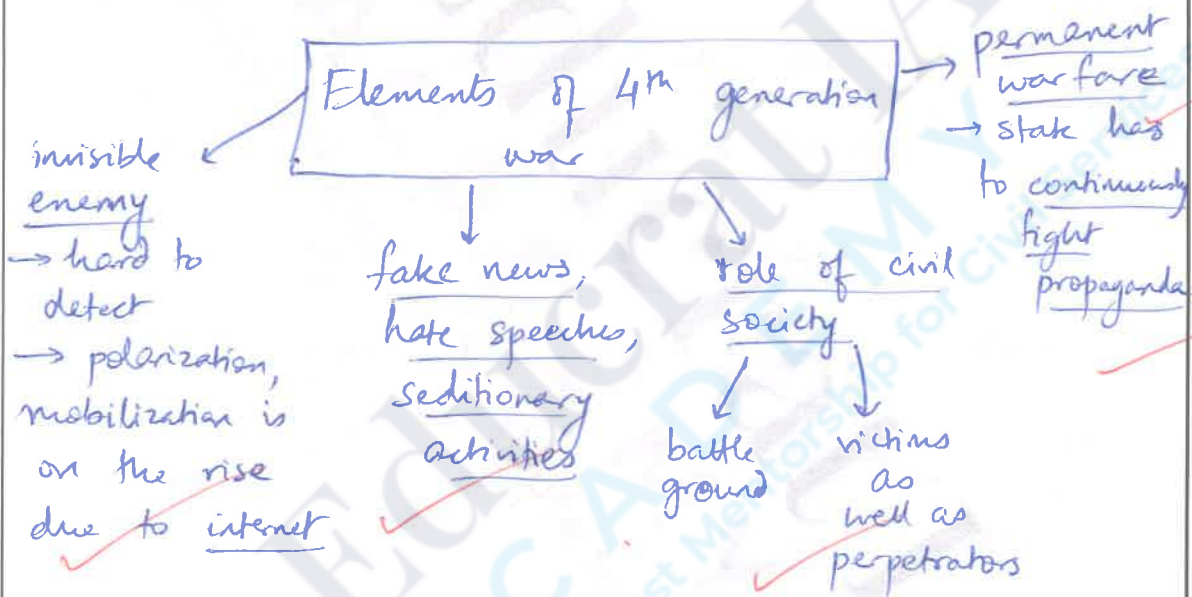
Dumping of e-waste to developing countries must be stopped

investment for circular economy

EPR must be made effective. CAMPA-like fund must be created in accordance to polluter pays principle

Q.15) The most difficult challenge for India is to tackle the fourth generation war, a warfare with an invisible enemy in which the civil society is both the battleground and the people that the State has to protect. Discuss in light of rising internal security challenges in India. (15 marks)

The world is evolving, and so is the kind of warfare. Countries are facing external attacks, as well as internal strife. This 4th generation war plagues India as well.



Current 4th generation war situation in India

1) LWE — Non-state actors are involved in brainwashing tribal population.

The govt has to fight against LWE, while trying to protect the tribals

Add  
few  
examples

2) Border militancy - in states of NE India, J&K, security forces often face this dilemma. Eg - AFSPA.

3) Communal riots - According to NCRB, communal riots rose by 96% YoY in 2020.  
creation of Senas on ethnic lines

cultural struggles Quick mobilisation of people through social media, leads to rapid riots

4) Secessionist demands, inter-state disputes, son of the soil movements are very frequent. eg. ?? - Chalistan

Way forward

→ Sensitization of armed forces to use violence as last resort

→ Strict punishment for instigators

→ Rehabilitation of people affected by riots

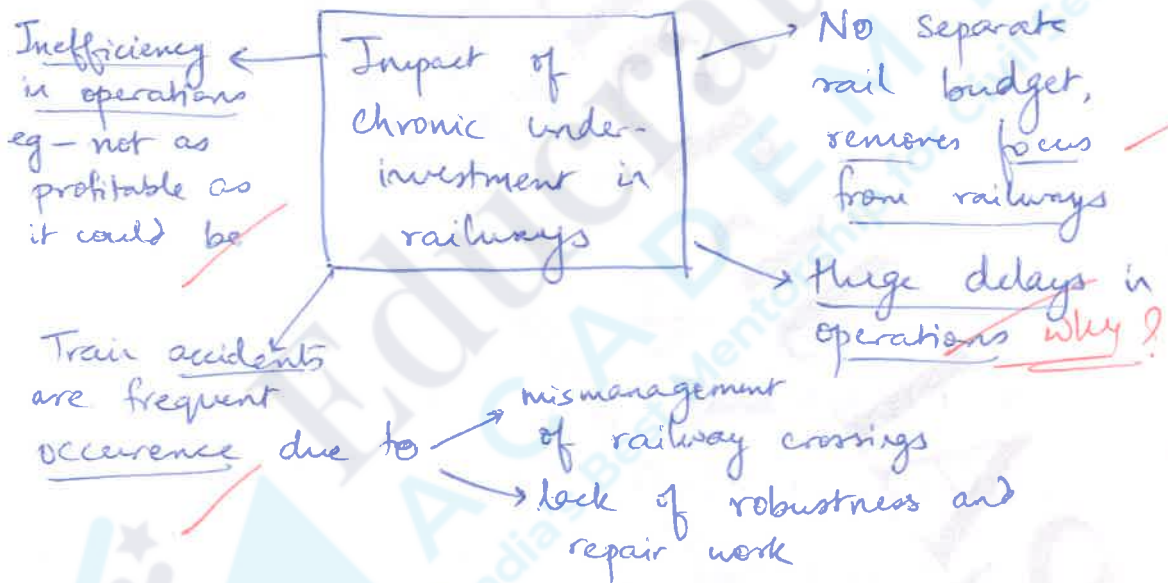
→ Activities to boost confidence and trust in the state

10



Q.16) Indian Railways has suffered from chronic under-investment, which has adversely impacted key areas of its operations. In this context, discuss the challenges faced by the railways in speedy creation of infrastructure. Also, mention the steps taken by the government in this regard. (15 marks)

Indian Railways is a major pride of India and India has 2<sup>nd</sup> largest train network in the world. Since its inception in 1853, the railways has been through myriad changes to become the leviathan today.



Challenges faced by railways in speedy creation of infrastructure -

- 1) Lack of investment - Budgetary contribution to railways has reduced.
- 2) Pricing - Cross-subsidization of railway

tariffs has led to lower margins

3) Land approvals are delayed due

encroachments ✓

4) Bureaucratic delays due to

Colonial legacy in the railway operations

5) Protests due to clearing of forests, displacement of villages/tribals

Steps taken by govt in this regard

1) Freight corridors project has infused

funds and inter-ministerial cooperation

2) Grievance redressal apps, portals as well as through social media ✓

3) Electrification of railways, broad gauging of railways is being done fail vision 2040

4) Indigenous accident prevention system for railways has been developed

5) Professionalisation of function of railways

6) Dynamic pricing of tickets for more returns.

A major chunk of the population depends on railways, and so, its efficiency is greatly important.

- less put  
- participation  
- high debt  
- servicing  
- unaffordable  
- terrain  
- causing accidents

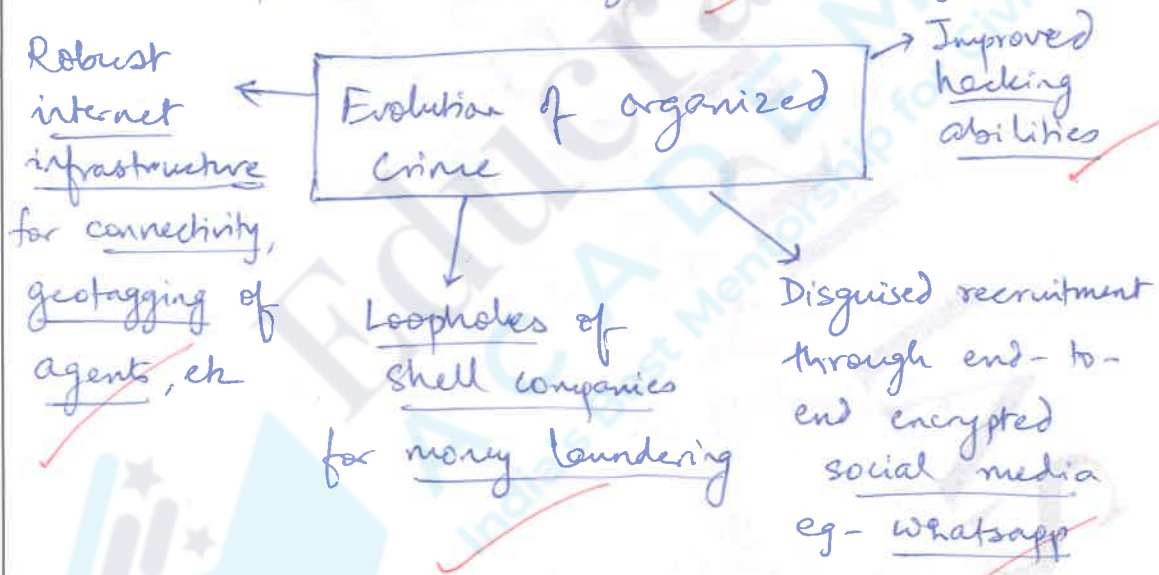
- mention  
- bharati  
- sukshmi  
- National  
- fail  
- Plan

9.

Q.17) How has organised crime evolved in recent years? How does organised crime manifest itself? Analyse. (15 marks)

Organised crime can be understood as efficiently managed criminal activities, with the internal functioning similar to an organization. This is in contrast to unplanned crime.

Organized crime eg - drug smuggling  
Unplanned crime eg - pickpocketing



With the penetration of internet, eg - Google Maps, Darknet, black marketing, organized crime has received a fillip. Cryptocurrencies have helped in

easier financial transactions as well.

How organized crime manifests itself?

- 1) Easy recruitment
- 2) Spread of information.  
Gathering secret information through hacking
- 3) Incorporation of corporate culture in criminal organizations
- 4) Easier planning due to technological developments. Eg - simulations

Way forward —

→ Technology to be used to fight technology.

→ Use of CERT-IN to tackle hackers.

SEBI, SFIO (serious frauds investigation office) for white collar crimes

→ modern checks and FATF's recommendations to halt recruitment through social media, and hawala transactions

Q.18) What are gravitational waves? Why are scientists trying to detect gravitational waves? Discuss. (15 marks)

Gravitational waves are a newly discovered phenomenon, generated due to gravitational force. Gravitational force was always speculated, but impossible to measure/detect until recently.

Gravitational waves are generated in interstellar space due to interactions of cosmic proportions.

Read more

Eg - merging of black holes causes a ripple in space, which travels as gravitational waves.

The presence of these waves was recently detected by the LIGO spectrometer, and this discovery has led to huge enthusiasm among space scientists.

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Reasons why scientists  
are trying to detect  
gravitational waves

⑧ 1) Gravitational force is one of  
the ⑤ fundamental force according to  
modern physics ✓

2) Understanding of origins of the  
universe and its impact of the Big  
Bang how → don't interact with matter  
while passing through it.

3) Effects of interactions of stellar  
bodies. ?? ✓

4) Provides details of binary black  
holes, merging of black holes, which is  
useful to plot the life cycle of a star ✓

The Gravitational waves discovery, the  
recent image taken of a black hole,  
James Webb telescope's images have  
generated interest in a new era of  
space research ✓

Q.19) Discuss the factors that have helped the RBI to maintain a healthy foreign exchange reserve. What are its benefits to the economy? Explain. (15 marks)

A healthy forex reserve is important for countries to maintain economic stability. Since the forex crisis in 1991, to becoming the 5th largest forex reserve in the world, the RBI has been instrumental in this growth. \$600 bn vested

Factors that have helped RBI maintain healthy forex reserve

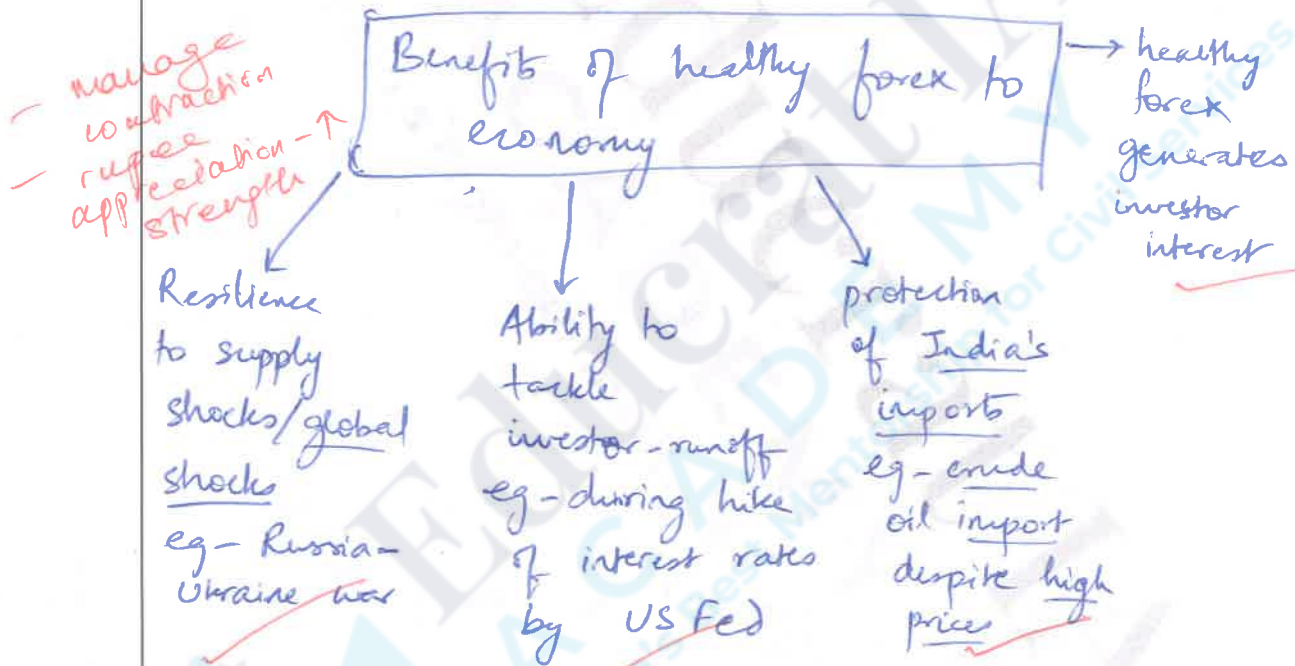
1) Regular buying of dollar to boost its forex reserve.

Eg- during COVID, RBI started buying dollars from the market to build its reserve as protection from global shocks.

2) Currency conversion scheme - Although India has a liberal remittance scheme, it has limited capital convertibility to stop dollar run-off.

3) Liberalised investment norms to allow ~~for~~ FDI, FPI as well as NRI deposits

4) By keeping check on the banking ecosystem, and maintaining its health, RBI has developed atmosphere for foreign investors interest.



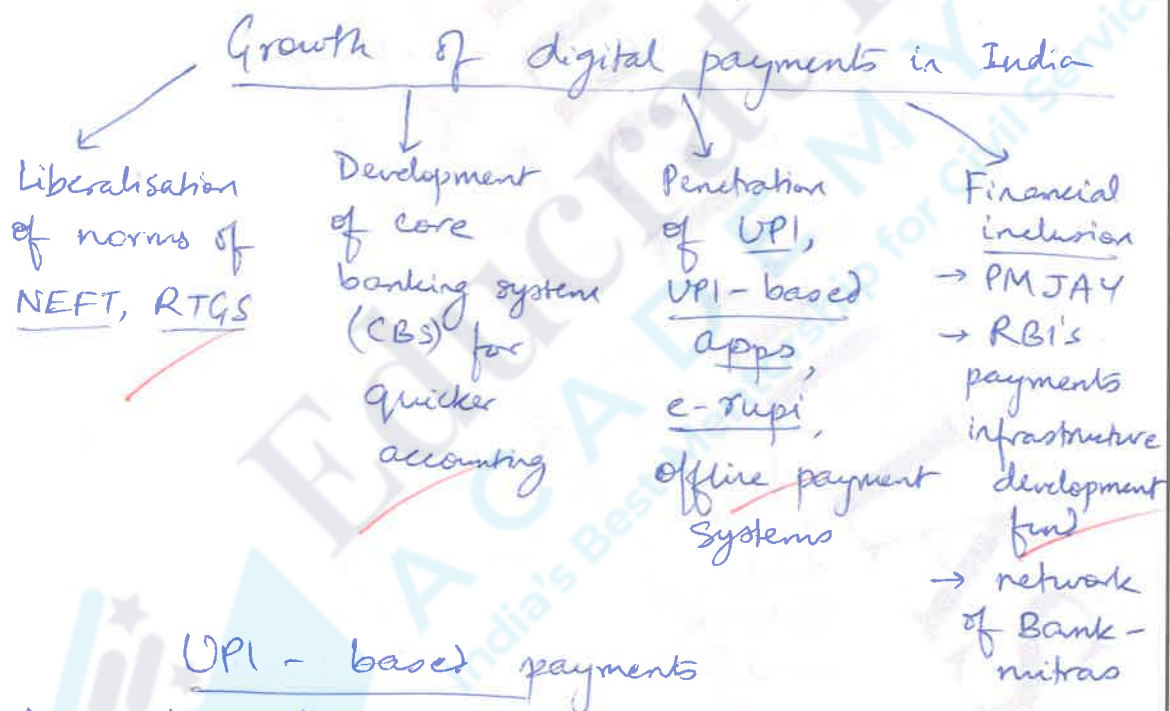
It also gives RBI the ability to manage its exchange rate, as a fall-back option during export-import crisis

RBI's long sighted approach proved very helpful during the COVID pandemic, and has helped India quickly recuperate its growth



Q.20) The area of digital payments has witnessed massive transformations on the technology front in recent years. Critically examine the need for digital payments system as an alternative to conventional paper currency for a country like India. (15 marks)

With recent initiatives like Digital India, NPCI's UPI, BHIM infrastructure, and rapid financial inclusion, the digital payments space (payments done online without tangible cash) has seen massive growth.



UPI - based payments have hit highest values recently, surpassing NEFT and RTGS payments. Recent discussion of implementation of CBCD (Central Bank Digital Currency) has met with lot of interest as well.

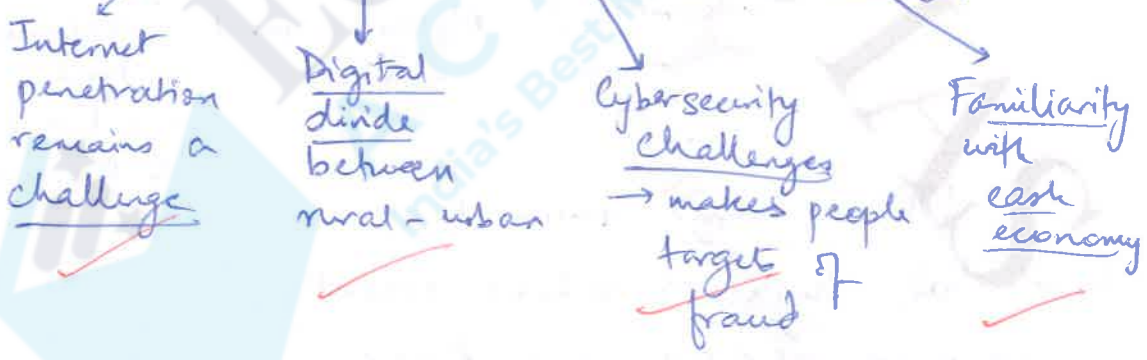
Reasons why digital payments can be an alternative to paper currency

fake currency created

- Seignorage benefits due to savings from currency printing
- Low penetration of ATMs in rural areas
- Easier and simpler to transact digitally
- Accounting becomes easier and merchants can keep track of transactions
- Tax revenue increases. India's GST revenue saw highest-ever growth numbers recently.

Challenge with digital currency

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Thus, although digital payments bring a lot of benefits to people and the exchequer, it cannot be a panacea and India needs both digital and cash-based economy

towards a less cash economy