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GENERAL STUDIES (TEST CODE : 1419)

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Medium Eng./Hindi	English	Registration Number	342734
Center	Online	Date	

INDEX TABLE			INSTRUCTIONS
Q. No.	Maximum Marks	Marks Obtained	
1	10		- 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)। - There are TWENTY questions printed in ENGLISH & HINDI इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं। All questions are compulsory. सभी प्रश्न अनिवार्य हैं। - The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं। - 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 than 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। - Word limit in questions, if specified, should be adhered to. प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए। - 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।
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Total Marks Obtained:			

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

1. Highlighting the issues associated with power discoms in India, discuss whether privatizing discoms can help in this regard. (150 words) 10

भारत में विद्युत वितरण कंपनियों (डिस्कॉम्स) से जुड़े मुद्दों पर प्रकाश डालते हुए, चर्चा कीजिए कि क्या डिस्कॉम्स के निजीकरण से इस संबंध में सहायता मिल सकती है।

Power distribution Companies holds a key position in economic development of any country. However power Discoms in India are facing multiple problems.

Issues of Power discoms

- ① High Aggregate and Technical losses (ATEC)

ATEC losses in India is around 22%, which reduces the profitability of discoms.

- ② Low availability of coal and natural gas

- ③ High debt: Due to low profits, the debt has been becoming unviable (More than 1 lakh crore debt)

- ④ Issues in PPO (Power Purchase Obligations) mandatory purchase of Renewable Energy

at high prices is also a challenge to power discoms.

Privatisation: a solution?

- ① Privatisation would help in inducting new technology in the power sector
- ② Discoms can be more professionally managed.
- ③ will reduce the burden on the government revenue.
- ④ AT&C losses can be minimised by new technology.

other things
also need to
be done

→ financial support to Discoms
→ Net metering
→ reduce power theft
↓
reduce cross subsidisation

Govt. steps

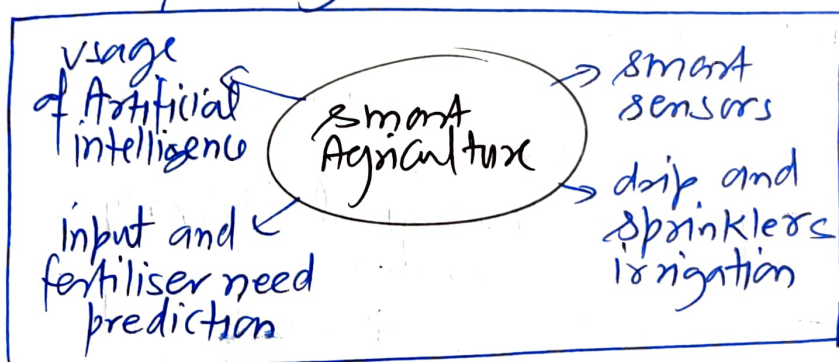
→ UDAY Scheme
→ Smart metering

Hence Discoms in India are reeling under many problems. Privatisation can be one solution. However it has to be supplemented by many other structural reforms in the power sector.

2. Harnessing Smart Agriculture can potentially be a game-changer for farm productivity in India. Discuss. (150 words) 10

स्मार्ट कृषि का दोहन संभवतः भारत में कृषि उत्पादकता के लिए निर्णायक सिद्ध हो सकता है। चर्चा कीजिए।

Smart agriculture involves usage of smart technology and mechanisation to optimise usage of input like water and improving productivity.

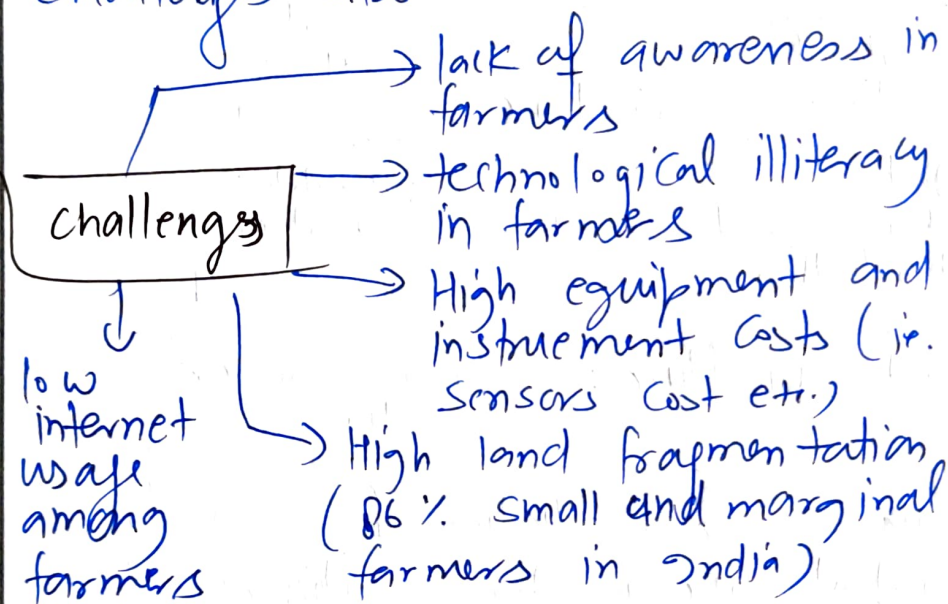


Smart agriculture: a game changer for India

- ① with proper prediction of demands of inputs like water, fertilisers, it can improve productivity.
- ② Using Genetically modified (Gm) crops, productivity along with agriculture sustainability and resilience can be achieved.
- ③ Resources wastage can be minimised
ex- fertiliser and water wastage

- ④ With new technological interventions like - proper weather prediction can help in increasing productivity.
- ⑤ Enhance mechanisation like - tractors, threshers can improve productivity.

However there are some challenges also.

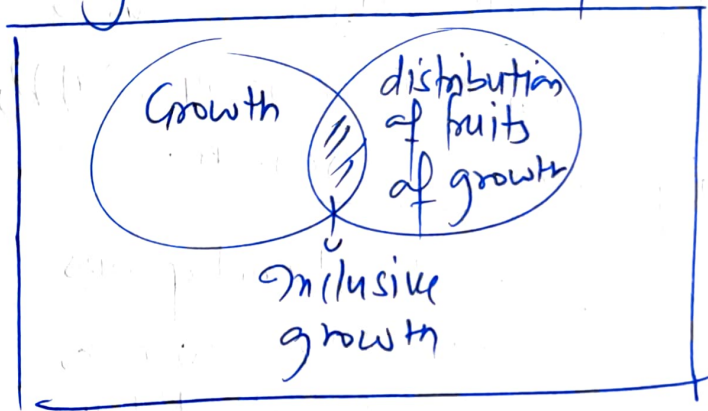


Smart technology along with mechanisation can help in agriculture by reducing wastage of resources, improving productivity of agriculture. Sustainability and resilience can also be achieved by smart agriculture.

3. Rather than focusing solely on quantity, inclusive growth concerns itself with the quality of growth. Discuss. (150 words) 10

केवल परिमाण पर ध्यान केंद्रित करने के बजाय समावेशी विकास, संवृद्धि की गुणवत्ता के साथ भी अपना सरोकार रखता है। चर्चा कीजिए।

Inclusive growth involves growth whose fruits are also distributed among all sections of society.



Growth simply means that quantitative parameters of GDP are improving. while quality of growth through participation of all sections of society and their benefit is also important.

Inclusive Growth Ensures quality of Growth

- ① Inclusivity ensures that all people are empowered.
- ② Participation of all citizens ensures harmony in the society.

③ Without inclusive growth, inequality can rise (World Inequality Report 2021 : Top 1% of Indians earn 22% of total income of India).

④ Empowerment of all people through education, health, skills ensures enhanced demand in economy, supply of quality human resource.

⑤ Empowerment of disadvantaged sections of society like - Women, LGBTQ etc. (Wage Gap Report by World Economic Forum says 34% wage gap between men and women in India).

Without inclusive growth, the benefits of growth are cornered by few individuals and sections.

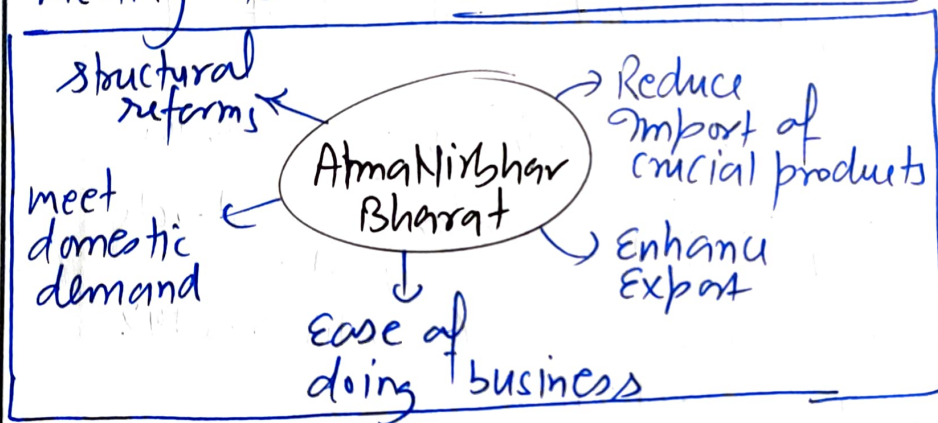
The empowerment of society can only be ensured by quality growth i.e. inclusive growth.

4. In the backdrop of Atmanirbhar Bharat, discuss the core areas crucial in export promotion for India to become a manufacturing hub.

(150 words) 10

आत्मनिर्भर भारत की पृष्ठभूमि में, भारत के लिए एक विनिर्माण केंद्र बनने हेतु निर्यात संवर्धन में महत्वपूर्ण मुख्य क्षेत्रों (कोर एरिया) की विवेचना कीजिए।

Atmanirbhar Bharat aims to make India a hub for export while making India self-sufficient in meeting its own domestic demand.



Potential for Export Promotion

- ① Agricultural Products : Food Processing industry has potential to export products as India is one of the major producer of fruits, milk, food grains etc.
- ② Textile Products : India being one of the largest producer of cotton, has potential to export garments.
- ③ Electronic Products : Electronic products

like- laptops, mobilephones can be tapped for export as India has huge technical workforce.

④ Automobiles

⑤ other products → cement
→ jewellery
→ sugar

Areas to be improved to tap export potential

① Ease of doing business · ex- India has low ranking in enforcing Contracts - World Bank (ODB report).

② lower logistics Cost (India has 14% logistics cost.)

③ diversify products.

④ Tap new markets

⑤ Tap Industrial Revolution 4.0 technology products like - AI, ML etc.

⑥ Ensure easy entrance and exit for businesses along with adequate financu.

Government of India has started Production Linked (PLI) scheme, Aatma-Nirbhar Bharat Scheme and structural reform to tap export potential. However a lot more need to be done.

5. Arsenic pollution is becoming a severe environmental issue in India. Enumerating its various sources, discuss the consequences and measures to tackle it.

(150 words) 10

आर्सेनिक प्रदूषण भारत में एक गंभीर पर्यावरणीय मुद्दा बनता जा रहा है। इसके विभिन्न स्रोतों को सूचीबद्ध करते हुए, इसके परिणामों और इससे निपटने के उपायों पर चर्चा कीजिए।

Arsenic pollution is one of the health hazard India is facing. It's negative impacts on health can lead to increasing health expenditure and reducing demographic dividend.

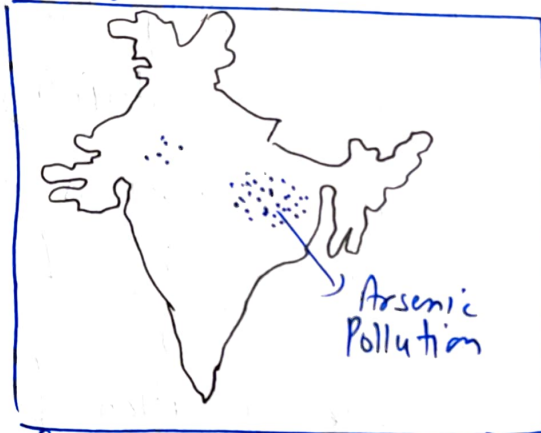


Fig. Major Areas of Arsenic pollution.

Sources of Arsenic Pollution

- ① fly ash from Thermal Power plants.
- ② Reducing water table also leading to high Concentration of Arsenic in Ground water ex - West Bengal
- ③ Industries using heavy metals.
- ④ Phone manufacturing
- ⑤ e-Waste etc.

Consequences of Arsenic pollution

- ① Bioaccumulation and biomagnification from crops using groundwater contaminated by Arsenic.
- ② Negative impact on biodiversity.
- ③ Human health hazards. (especially in children)
- ④ Reduction of soil fertility due to Contamination of Arsenic Containing Groundwater
- ⑤ Negative impact on workers of industries ex- workers of recycling of mobile phones.

measures to stop it

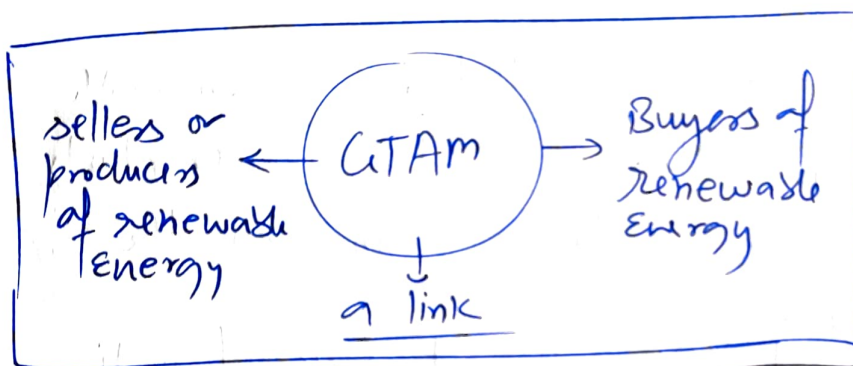
- ① Reduce excessive utilisation of Groundwater.
- ② Recycling of electronic waste through proper and formal sector of economy
- ③ use fly ash in construction purposes.
- ④ Genetically modified crops for Arsenic contaminated water. (ex- New rice variety for west Bengal by IARI)
- ⑤ Bio and Photo remediation.

Hence to reduce Arsenic pollution on health and environment, above steps are dire need of the time.

6. The Green Term Ahead Market (GTAM) can invigorate the renewable energy sector in India. Evaluate. (150 words) 10

ग्रीन टर्म अहेड मार्केट (GTAM) भारत में नवीकरणीय ऊर्जा क्षेत्र को सुदृढ़ बना सकता है।
मूल्यांकन कीजिए।

Green Term Ahead market is a power trading platform which will trade the renewable energy.



How it will invigorate Renewable Energy Sector

- ① more Energy production units for renewable energy since easy selling of it can be ensured.
- ② sustained energy supply can be achieved.
- ③ can help small renewable energy producers like - Household rooftop solar units.
- ④ It can bring down the cost of renewable energy.

- ⑤ would be easy for discoms to fulfil renewable energy purchase obligations.
- ⑥ Better discovery of renewable energy prices.

challenges

- ① High cost of installations of renewable energy unit. ex - solar power plants
- ② Getting the producers online on the GTAM.
- ③ financial illiteracy and lack of motivation in Discoms to buy renewable energy.

way forward

- ① Bring all stakeholders online on GTAM.
- ② Training to producers of renewable energy to trade on GTAM.
- ③ Ensure and achieve economy of scale.

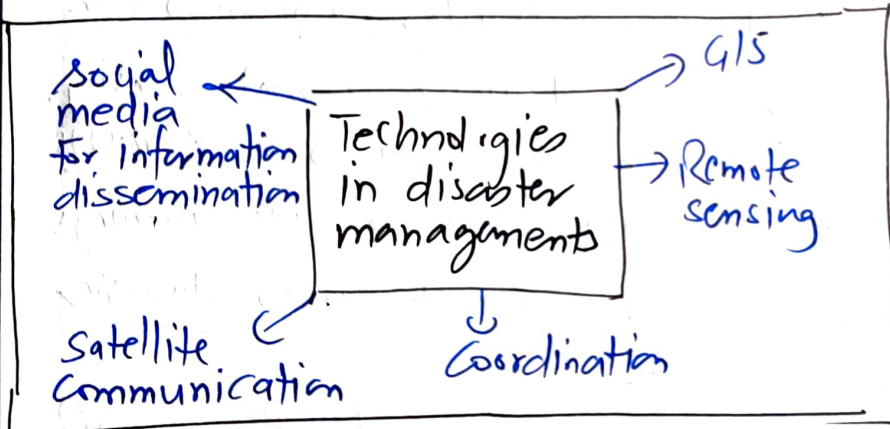
Hence GTAM can be a revolutionary step in invigorating the renewable energy sector. However some challenges like-high cost of production etc. remains to be solved.

7. In context of the increasing importance of technology for disaster management, throw some light on the application of GIS and Remote Sensing in disaster management with specific examples from India.

(150 words) 10

आपदा प्रबंधन के लिए प्रौद्योगिकी के बढ़ते महत्व के संदर्भ में, भारत से विशिष्ट उदाहरणों को प्रस्तुत करते हुए आपदा प्रबंधन में जी.आई.एस. और सुदूर संवेदन के अनुप्रयोग पर कुछ प्रकाश डालिए।

Technology can be used in disaster management in various spheres like- prediction, monitoring, humanitarian assistance etc.



Application of GIS in disaster management

- ① Monitoring the changes in the natural world. ex- receding snowline, landslide movement monitoring.
- ② Analysing various resources like forest cover, roads, land & soil etc. on one place using GIS.
ex- Google maps.

- ③ Early prediction of disasters like-
cyclone prediction, Tsunami etc.
- ④ Response to disasters using information
from GIS. Ex- which way is more
efficient to reach the disaster prone
area.

Usage of Remote sensing

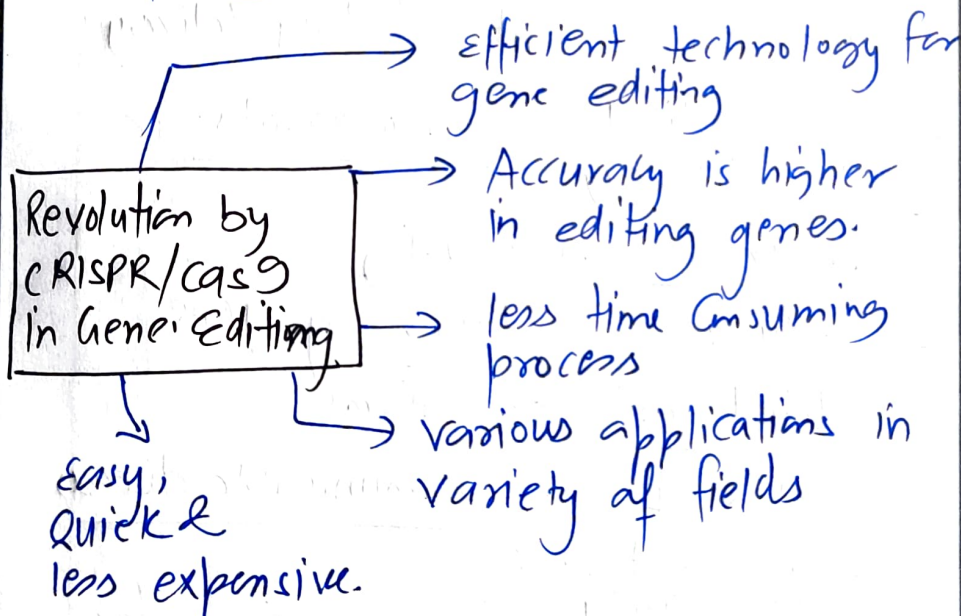
- ① movement of landslides, cyclones etc
Can be monitored using Remote sensing.
- ② Monitoring the forest fires. Ex- MODIS
of NASA is being used to give warnings
- ③ Better reconnaissance to assess disaster
prone areas.
- ④ Prediction of disasters. For ex. assessing
the low pressure system in Indian
ocean can predict the cyclones.
- ⑤ Tracking progress of disasters like-
floods, cyclones etc.

Hence Remote sensing and GIS
can be used from prediction +
response to disaster.

8. The CRISPR/Cas9 genetic scissors have revolutionized the genome editing technique with applications in various areas. Discuss. (150 words) 10

क्रिस्पर/कैस9 (CRISPR/Cas9) आनुवंशिक कैंची द्वारा विभिन्न क्षेत्रों में अनुप्रयोगों के साथ जीनोम संपादन तकनीक में क्रांतिकारी परिवर्तन का संचार किया गया है। चर्चा कीजिए।

CRISPR/Cas9 is used to edit genome at any specific point. It is cheaper, easier and quicker than other methods of Gene editing.



Applications of CRISPR/Cas9

① Agriculture field

- Gm crops (ex-Bt-Cotton)
- disaster and Climate resistant crops
- Gene edited bio pesticides
- Gene edited microorganisms for bio fertilisers. ex-Redwiggler.

② Reproduction of humans

- Designer babies by editing genes to impart desired characteristics in children.
- Curing inherited diseases
- Curing the diseases by editing embryos.

③ Disease management and drug delivery

- Gene edited bio nano robots for drug delivery
- Vaccine manufacturing
- production of drugs by gene edited microorganisms
- Curing of non-Communicable diseases

④ Other applications :

- Gene edited microorganisms for waste control i.e. bio & phytoremediation.
- Reproduction of animals to safeguard biodiversity.

Hence CRISPR/cas 9 as a tool of gene editing has many potential areas of applications. many of areas are already using it.

9. Bring out the role played by Financial Action Task Force in tackling the menace of money laundering. (150 words) 10

धन-शोधन के खतरे से निपटने में वित्तीय कार्रवाई कार्य बल द्वारा निभाई गई भूमिका को स्पष्ट कीजिए।

Financial Action Task Force (FATF) is an internal watchdog organisation which through peer evaluation, works for curbing money laundering, terrorist-financing etc.

Role of FATF → Terrorist financing
→ money laundering

Role of FATF in Money laundering

- ① It has released a list of recommendations to curb money laundering
- ② Evaluation of performance of Countries members by peer Countries. It puts pressure on Countries to conform to the principles to reduce money laundering.
- ③ Through instruments of Black & Grey list, it names Countries to pressurise them to pass legislations in their Country and curb money

laundering.

④ If Countries don't Commit and work to reduce money laundering, the international financial aids and loans are difficult for that Country to get.

⑤ money laundering being an international and transboundary issue needs a multilateral solution. FATF fulfils this need exactly.

However there are some challenges in FATF to achieve its objectives

- ① Politics and geostrategic angles in FATF.
- ② No formal mechanism to punish or sanction violating Country
- ③ inadequate monitoring of Compliance.

Hence FATF has played an important role in curbing money laundering. The all member nations should Come together and ensure working of FATF in letter and spirit while keeping it away from politics and geostrategic matters.

10. Discuss the recent reforms that have been undertaken in the National Security Architecture of India. (150 words) 10

भारत की राष्ट्रीय सुरक्षा संरचना में हाल ही में किए गए सुधारों की विवेचना कीजिए।

India has been facing security challenges from external as well as internal forces. This has made reforms in security architecture imperative.

Reforms in security Architecture

① Theatre Command : These joint Commands will have personnel and resources from all three - navy, airforce and military. This will ensure effective Coordination and efficient utilisation of resources to address changing nature of Conflicts.

② Appointment of Chief of Defense Staff (CDS)

CDS would be a senior officer which would be above the chief of all three organs of military. It would result in Coordination and

Collaboration among the three forces along with other benefits.

③ formation of Nuclear Triad with the induction of nuclear submarine INS Arihant.

④ Smart fencing along Pakistan border to check illegal infiltration of terrorists.

⑤ Indigenisation and development of defense weapons. ex - AK - 203 (India & Russia)

⑥ Information Fusion Centre (IFC) at Gurugram to improve maritime security.

⑦ Signed logistics agreements.

Other reforms needed

→ Increase defense funding

→ Jointness of forces to be increased

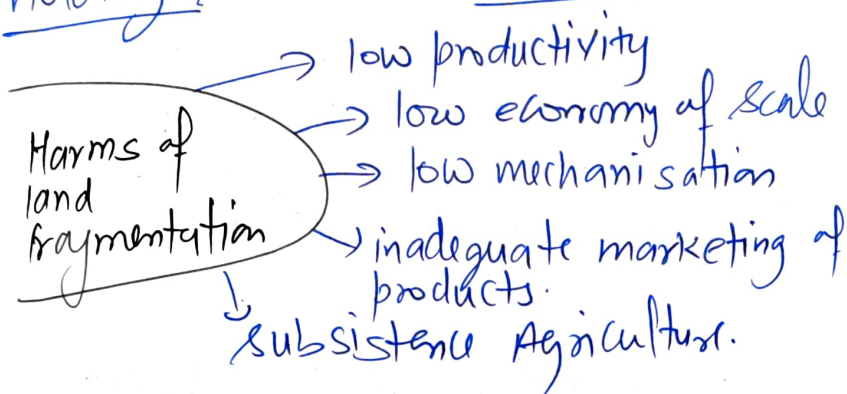
→ Handle cyber, space warfare effectively.

Handle with new emerging security challenges like - cyber, maritime & space warfare, many more reforms in security architecture are need of the hour.

11. Bring out the key hurdles that are being faced in accomplishing land reforms in India. Also, discuss the advantages which can be reaped by accomplishing them in contemporary times. (250 words) 15

भारत में भूमि सुधारों को पूरा करने में सामना की जा रही प्रमुख बाधाओं को स्पष्ट कीजिए। साथ ही, समकालीन समय में इन्हें पूरा करने से होने वाले लाभों की भी विवेचना कीजिए।

According to Agriculture Census 2015, India has 86% small and marginal farmers and average land holding size is 1.08 hectare.



Hurdles in land Reforms

- ① lack of conclusive land titles and digitised land records
- ② Political interference in land reforms
- ③ inadequate support from farmers as farmers in rural India are sensitive about land related issues
- ④ inadequate cooperative farmings.
- ⑤ cleavages in rural society (e.g. caste system) etc. also hampers cooperation in

villages for land reforms.

- ⑥ legal loopholes in land reforms legislation
ex - plantation land does not come
underland reforms in many states.
- ⑦ lack of political will.

Advantages of land reforms

- ① Improve productivity : land fragmen-
tation leads to low mechanisation
and inappropriate utilisation of
inputs like - fertilisers etc.
Hence low productivity is the result

- ② Improve marketing of agricultural
produce and farmer's bargaining
power

With consolidated land and large
surplus will lead to farmers nego-
tiating on better terms. FPOs can
also be formed and it overall
will improve remuneration of
agriculture (NSO survey : Average

income of a farmer is 6400 rupees)

- ③ Better utilisation of Government schemes
like - MSP etc.

↳ small farmers face difficulty in
selling small surplus to APMC due to
high transportation cost etc.

ms Swaminathan Commission indicated
only 6% of farmers benefit from MSP
regime

- ④ Improve use of machines and other
inputs like - fertilisers, seeds etc.

- ⑤ Push to food processing industry.

way forward

→ Generate will among farmers to support land reforms
→ efficient application of land reforms legislations
→ encourage cooperative farming.

According to ms Swaminathan, land reforms are an unfinished agenda in India. India can double farmers income only by making agriculture remunerative. land reforms plays a huge role in this.

12. India needs to accord more significance to nutritional security than food security. Comment. In this context, suggest a framework that should be adopted by the government to achieve nutritional self-reliance. (250 words) 15

भारत को खाद्य सुरक्षा की तुलना में पोषण सुरक्षा को अधिक महत्व देने की आवश्यकता है। टिप्पणी कीजिए। इस संदर्भ में, वह रूपरेखा भी बताइए जिसे सरकार द्वारा पोषण संबंधी आत्मनिर्भरता प्राप्त करने के लिए अपनाया जाना चाहिए।

India has achieved food security but lags behind in nutritional security. It is evident from the fact that 19% of children (below 6 yrs age) are wasted and 35% are stunted (latest NHFS-V survey report)

More significance given to food security

Ever since Green revolution, India has pushed to improve production of few crops white-like-rice, wheat etc. The other nutritious crops like millet, pulses etc. have been ignored. Now India is a net exporter of wheat and rice while the need for pulses, edible oil, etc. remain unfulfilled.

Need to given more significance to
nutritional security

- ① Remove hidden hunger.
- ② Better health outcomes.
↳ e.g. Reduce child stunting, wasting,
anaemia, women health etc
(NHFS-V: 57% of women are anaemic
while 67% of children are anaemic)
- ③ encourage development of demographic dividend by better health
of work force.
- ④ improve education outcomes also.
↳ e.g. mid day meal scheme for
school children.
- ⑤ Remove poverty, etc.

Challenges

- low production of nutritious food
- High cost of such food
- High poverty and low purchasing power
- lack of awareness.
- Neglect of women health needs.

Framework for nutritional self reliance

① Encourage production of nutritional crops

- Provide timely and adequate credit support for millets, pulses, fruit producing farmers.
- Adequate procurement under MSP regime.
- Give per hectare incentives.

② Generate awareness

- sensitise people about benefits of nutritional foods.
- focus on women and children
- leverage Anganwadi and ASHA workers

③ Availability of nutritious food

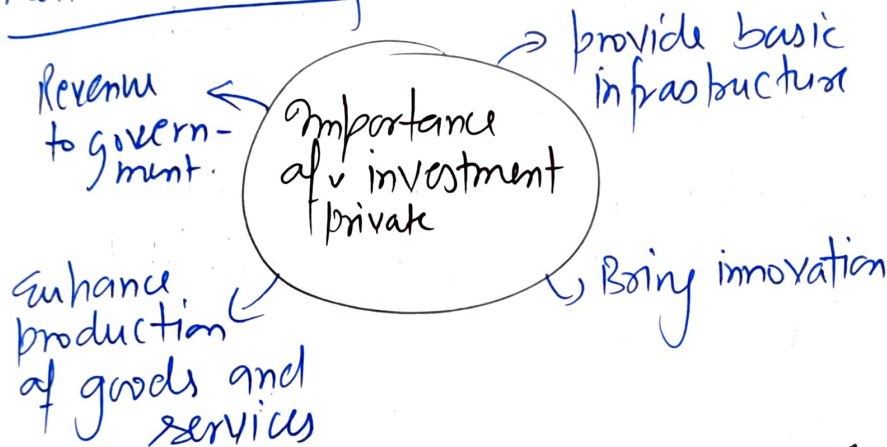
- Cold storage for perishable fruits and vegetables
- Reduce hoarding and price inflation
- Efficient use of schemes like - operation Greens
- Encourage food processing.

Hence multidimensional steps are needed to remove nutritional hunger in India and achieve SDG Goals

13. Private investments are key for India to move into a high growth trajectory. Discuss. Also highlight the steps taken by the government in recent times to address the fall in private investments. (250 words) 15

निजी निवेश भारत के लिए उच्च संवृद्धि पथ पर आगे बढ़ने हेतु महत्वपूर्ण हैं। चर्चा कीजिए। साथ ही, निजी निवेश में गिरावट को दूर करने के लिए हाल के दिनों में सरकार द्वारा उठाए गए कदमों को भी रेखांकित कीजिए।

According to NITI Aayog's strategy for India @ 75, capital formation stood at 29% and private investment is falling since last decade.



Private investment: Key for high Growth

① Bridge infrastructure Gap

A blooming Economy like India needs high infrastructure (Economic survey - India needs \$ 4.5 trillion expenditure on infrastructure)

② Support Government efforts

Private investment bridges the gaps in investment. Since, government has limited resources.

③ Bring innovation : more investment

on new technologies, startups,
R&D will improve productivity
of Indian economy.

(e.g. India spends 0.7% of GDP on
R&D and that is also dominated
by public funding)

④ Encourage Entrepreneurship in Economy

⑤ Enhance Exports and inturn support Economic growth.

⑥ Helps in success of Public Private Partnership projects

⑦ Brings efficiency, productivity in the economy.

Ex-logistics cost can be reduced by
Roads Construction investment. Current

logistics cost in India is 14%.

Steps by Government

① National Infrastructure Pipeline :

with around 40% of private share in it, it will enhance private investment.

② Disinvestment and privatisation to increase role of private sector in the economy and also increase private investment.

③ Ease of doing business through Insolvency and Bankruptcy Code, GST etc.

↳ India's rank in EODB improved to 63 in 2019 by World Bank report.

④ Encouragement to exporters through schemes like - RoDTEP, MEIS etc.

→ proper business environment for private sector.

way forward

→ Predictable policy framework

↓
finance
↳ Reduce red tapism
↳ Single window clearances

Hence private investment can help India in becoming \$5 trillion economy by 2025. However, it needs a predictable, efficient business environment.

14. India's geographical diversity and varied levels of development across regions necessitate a targeted region specific action plan to ensure a minimum acceptable level of prosperity. Elaborate. (250 words) 15

भारत की भौगोलिक विविधता और विभिन्न क्षेत्रों में विकास के भिन्न-भिन्न स्तर समृद्धि के एक न्यूनतम स्वीकार्य स्तर को सुनिश्चित करने के लिए एक लक्षित क्षेत्र विशिष्ट कार्य योजना को आवश्यक बनाते हैं। सविस्तार वर्णन कीजिए।

India has huge development inequality across regions and states. It is evident from various developmental parameters like - health, education etc.

Geographical diversity and developmental diversity

lack of infrastructure in North Eastern States.

→ More than 30% population of Odisha is poor while it's very low for Kerala.

→ 37% of FDI received by Gujarat alone

→ Very low agricultural productivity of rainfed regions as compared to Punjab & Haryana.

Need of Targeted Region specific Action Plan

- ① Different strength and weaknesses of different regions

- North East India has high potential of organic agriculture.
- Chota Nagpur plateau has scope for industrialisation.
- Solar potential of Rajasthan and Gujarat.

These different strengths can be used for their development.

② Reduce unequal level of development

- Huge gap in poverty levels of different states.
↳ Ex - Odisha vs Kerala.

- Gap in Education level and its outcomes.

↳ Above 90% literacy level in Kerala while below 75% in North East India

③ Gap in infrastructure development

↳ very low road density in Himalayan and North East India while high in Maharashtra.

④ utilisation of region specific resources

⑤ Human resource development of all regions

Framework for region specific strategy

- ① different industrial policies for different regions in place of one size fits all.
- ② Encourage region specific industries.
Ex - food processing in UP, Haryana
- ③ Provide basic infrastructure like roads, schools, electricity in all states on priority.
- ④ differential pattern of funding to different states
Ex - 90:10 pattern for North East States
- ⑤ Encourage local industries based on local handicrafts and train local youths.
- ⑥ Ease of doing Business in all regions

Hence only a region specific and targeted policy is required for all round and holistic development of all regions. local needs and strengths must be taken into account in this.

15. Empowering the farmers by ensuring barrier-free trade in the agriculture produce is critical in doubling their incomes. Enumerating the existing bottlenecks, discuss how the recent legislations can help in overcoming them. (250 words) 15

कृषि उपज का निर्बाध व्यापार सुनिश्चित करके किसानों का सशक्तीकरण करना उनकी आय दोगुनी करने में महत्वपूर्ण है। वर्तमान बाधाओं का उल्लेख करते हुए, चर्चा कीजिए कि इन पर नियंत्रण पाने में हालिया अधिनियम कैसे सहायता कर सकते हैं।

Currently Each state has its own APMC legislation, which has led to fragmentation of agriculture market. The movement of agriculture produce from one state to other state also goes from numerous hurdles.

How barrier free trade can enhance farmers income

- ① Better prices for produce of farmers
- ② Better price discovery of agri-goods
- ③ Produce can be sold to any buyer across India.
- ④ Improve bargaining power of farmers
- ⑤ Encouragement to farmer producer organisation since their presence can be all over India.
- ⑥ Easy movement of produce.

Existing bottlenecks in barrier free trade

- ① Numerous APMC legislations of different states
- ② low number of Agriculture mandis registered on e-NAM (National Agriculture market)
 - ↳ only 1000 mandis registered so far.
- ③ low agri-surplus because of land fragmentation.
- ④ lack of transportation and logistics
- ⑤ lack of basic infrastructure for grading, sorting, cold storages etc.
(Ashok Dalwai Committee highlighted lack of cold storages.)
- ⑥ undue hurdles and checkings on state borders and checkpoints.
- ⑦ lack of proper roads, railways etc. dedicated for agriculture
ex - North East India faces this problem

Recent legislations and barrier-free trade

① legislation on marketing of farmers produce

→ Produce can be sold to any buyer across India by one nation one market.

→ Private mandis allowed.

→ push to e-NAM.

② legislation on Essential Commodity:

→ Push to infrastructure like - Cold storages can help in storing and supply to different states.

③ legislation on Contract farming can help in improving productivity and more surplus for supplying to markets of different states.

These legislations now have been taken by Parliament. But need for a single national market and more remunerative prices is the dire need of the hour to double farmers income.

16. The reasons for recurring floods in the regions of Eastern India such as Bihar and Assam go far beyond their topography. Discuss. Also, suggest measures to control this menace. (250 words) 15

बिहार और असम जैसे पूर्वी भारत के क्षेत्रों में बार-बार आने वाली बाढ़ के लिए केवल उनकी स्थलाकृति उत्तरदायी नहीं हैं। चर्चा कीजिए। साथ ही, इस खतरे को नियंत्रण में लाने के उपायों का भी सुझाव दीजिए।

Assam and Bihar face severe floods every year. In Assam alone, more than 3 millions people are affected by floods every year.

Reasons of Eastern Indian floods

① Reasons Coming from outside topography

→ High erosion by flooding rivers from Himalayas and in turn Siltation of rivers.

ex- Brahmaputra brings silt as far as from China.

ex- Damodar brings silts from Himalayan region.

② Deforestation in riparian regions

→ deforestation in himalayan states & countries like- Nepal has aggravated the problem.

ex- Damodar and Teesta rivers

③ Projects on rivers in other Countries

ex- china building many dams
on Brahmaputra river.
sudden release of water from
these projects can inundate
Assam & other states

④ High rainfall in Himalayan region

which is outside Assam & Bihar
This leads to high amount of water
to rivers coming to states of Eastern
India like - Bihar, Assam, West Bengal

⑤ Climate change is also leading to
changing pattern of rainfall which
also leads to sudden rainfall
resulting in floods.

⑥ However some internal ~~see~~ reasons
also play role in Eastern Indian floods

- deforestation and siltation.
- Heavy inhabitation of flood plains
- obstructions in natural flow of rivers
from dams, sand mining etc.
- lack of dredging of rivers

Measures to Control this menace

① Coordination with other Countries

➤ Information sharing on river flow and its water.

Ex- china and India information exchange agreement on Brahmaputra.

➤ Add more rivers to India-china Agreement on rivers information apart from Brahmaputra.

➤ Resolve river disputes with other Countries. Ex- Teesta with Bangladesh.

② Reduce deforestation in Himalayan

region and Come to some Consensus with Countries like- Nepal and China.

③ Flood prediction - use modern technology like - AI, ML and sensors for this.

④ Control habitation in flood plain of rivers

⑤ Use dams effectively for flood control

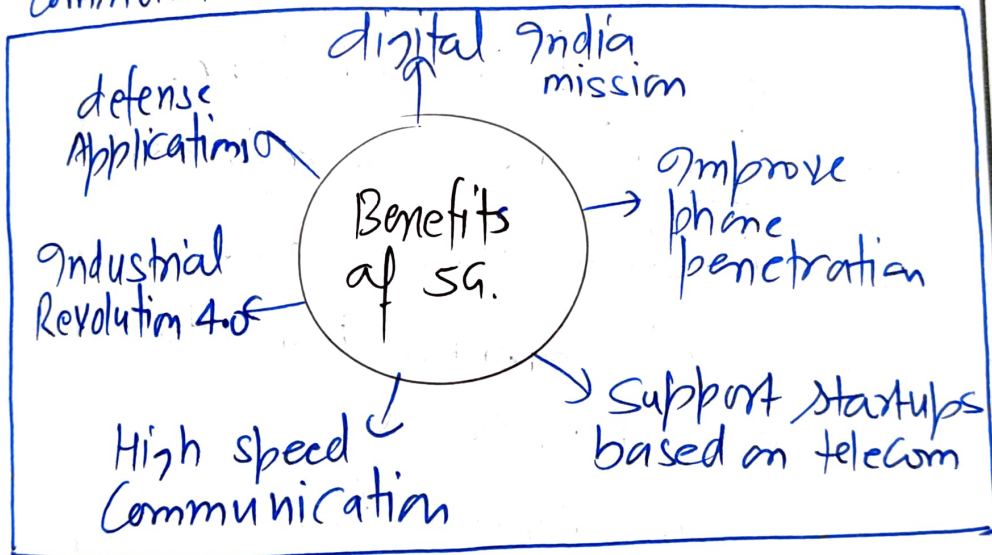
Hence better prediction, resilience of infrastructure and preparedness along with coordination with neighbouring Countries can help in curbing flood menace.

17. How can 5G technology potentially bring about a digital revolution in India? Identify the challenges in adoption of 5G technology in India.

(250 words) 15

5G प्रौद्योगिकी संभावित रूप से भारत में एक डिजिटल क्रांति कैसे ला सकती है? भारत में 5जी प्रौद्योगिकी को अपनाने में आने वाली चुनौतियों की पहचान कीजिए।

5G technology refers to a telecommunication technology which can serve high density of tele-connections, low latency in communication and with high speed of communication.



5G technology and digital revolution in India

① Use in e-Governance :

- High speed communication can result in efficient delivery of e-Governance services.

- Accountability and transparency
in governance
- ↳ People with internet can
question government using
online platforms like-Twitter.

② Use in Agriculture :

- SG can be used to transmit
huge amount of data from
sensors used in agriculture.
ex - soil moisture sensor in soil
- Usage in drone technology.
- High speed Communication to
generate awareness.
ex - Kisan Suvidha App

③ Use in defense :

- Remote Communication
- defense weapons Communication
with ground stations

④ Usage of SG in Industrial Revolution 4.0 technologies like - Artificial Intelligence, machine learning, IoT etc.

Challenges of 5G in India

- ① lack of digital literacy
- ② Digital divide : only 29% rural households have broadband connection to to NSSO survey
- ③ Absence of data protection legislation
- ④ low smartphone penetration.
- ⑤ High cost of 5G connections and low purchasing power of people.
- ⑥ lack of manufacturing base for making 5G instruments.
- ⑦ Threat of cyber security, data breach
- ⑧ Inadequate competition in telecom sector.

Way forward

- Encourage R&D in 5G sector
- Bridge digital divide
- focus on digital literacy
- Encourage government departments to use New technology
- Encourage entry of new players in telecom.
- Resolve ailing issue of finance in telecom sector

Hence 5G holds promise of revolution in digital India through its multifold applications in various fields

18. Besides computing, quantum technology has potential applications in various areas. Discuss. What are the challenges which lie ahead for effective utilization of quantum technology? (250 words) 15
- संगणना के अतिरिक्त, क्वांटम प्रौद्योगिकी के विभिन्न क्षेत्रों में संभाव्य अनुप्रयोग हैं। चर्चा कीजिए। क्वांटम प्रौद्योगिकी के प्रभावी उपयोग के समक्ष आने वाली चुनौतियाँ क्या हैं?

Quantum technology uses quantum entanglements, superposition etc. for faster calculations and enhanced performance and speed.

Potential Applications of Quantum Technology

① weather prediction :

with more Complex weather prediction models (e.g. Ensemble Prediction System) and uncertainty in weather due to climate change, it requires high Computational Capacity and handling high amount of data. Quantum Computers can be highly useful in it.

② Satellite Communication :

Communication of satellites with ground stations requires accuracy and efficiency of communication.

quantum technology can fulfil this need.

↳ e.g. China successfully used quantum technology for satellite communication.

③ Analysing huge amount of data from e-governance and digital tools of government.

↳ it can lead to more efficient public delivery of public services and better targeting for different schemes.

④ Agriculture: with more complex digital tools (drones, sensors etc.) being used in agriculture, it needs high performance digital machines for analysing this data.

⑤ Other potential uses

- medical fields
- defense
- Communication etc.

Challenges in its effective utilisation

① lack of innovation and R&D in India. (India spends only 0.7% of GDP on R&D).

- ② Inadequate availability of skilled and trained technical professionals
- ③ High cost of using quantum technology
- ④ Inadequate availability of data in India from various sources to efficiently use it.
- ⑤ lack of efficient manufacturing capability to make- quantum-tech equipment
- ⑥ lack of digital literacy.

Government steps

- ↳ Mission on Quantum Technology
- ↳ focus on innovation through programs like - Atal Innovation Mission & Tinkering labs.
- ↳ Encouragement to R&D in higher educational institutions

Way forward

- ↳ Increase expenditure on R&D
 - ↳ Innovative environment funding on Quantum-tech projects.
- Hence Quantum technology has many multidimensional potential uses in India. India needs to tap this to become a global leader in new technologies.

19. While most insurgent groups in North-East India have given up violence and are engaged in peace talks with the government, a number of issues could create hurdles in the future. Discuss. (250 words) 15

जहाँ पूर्वोत्तर भारत में अधिकांश विद्रोही गुटों ने हिंसा छोड़ दी है और सरकार के साथ शांति वार्ता में संलग्न हैं, वहीं अनेक ऐसे मुद्दे हैं जो भविष्य में बाधाएं उत्पन्न कर सकते हैं। चर्चा कीजिए।

Recently peace talks are being held with Naga insurgents groups (i.e. NSCN(IM)). Agreement has already been signed with Bodoland insurgents.

Issues that could create hurdles

- ① demand of separate flag and Constitution by Naga insurgents groups.
↳ It can lead to secessionist tendencies
- ② demand of more autonomy by such insurgents groups
- ③ Inadequate representation of many tribal groups in such negotiations. It can lead to

emergence of insurgency again in future.

④ Tribal Conflicts :

Inadequate Consensus among tribal groups in negotiations.

ex - Hill tribe status to Bodo people has create faultlines in Bodoland Administrative Region.

⑤ Factions of insurgent Groups

Members of insurgent groups not in favour of negotiations with government often form separate groupings and Continue Violence.

ex - Nagaland Socialist Council of Nagalam - Issac Muivah (NSCN-IM) is negotiating with government but NSCAI-K is still Continuing Violence.

- ⑥ lack of Confidence and trust of insurgent groups with government.
- ⑦ Threat of police and military action against such insurgent groups.

what needs to be done?

- ① Engage all factions of any insurgent groupings
- ② Confidence building measures
- ③ development of backward regions of North East India.
- ④ More innovative agreements on the lines of Bodoland agreements.
- ⑤ Prevent inter-tribal conflicts in the region.
- ⑥ maintain presence of army to pressure insurgents groups for negotiations

Hence Government is in the process of many negotiations with insurgent groups. However success of such measures depends on how both sides overcome the ailing hurdles in this

20. Identifying the key vulnerabilities in India's cyberspace, discuss the framework which should be adopted in the envisaged new cyber security policy in India.
(250 words) 15

भारत के साइबर जगत में प्रमुख सुभेद्यताओं की पहचान करते हुए, उस रूपरेखा पर चर्चा कीजिए, जिसे भारत में परिकल्पित नई साइबर सुरक्षा नीति में अपनाया जाना चाहिए।

India recorded around 50,000 cases of cybercrime according to National Crime Record Bureau report. With more internet and computer penetration, this number is poised to be increased.

Key Vulnerabilities of India's Cyber Space

- ① lack of digital literacy
- ② Inadequate availability of trained professionals for cyber security.
- ③ lack of awareness among people regarding cyber frauds & crimes.
- ④ With more than 60 crore internet users in India, India is vulnerable to cybercrimes.

- ⑤ inadequate institutional framework to deal with cybercrimes.
- ⑥ Inadequate manufacturing of electronic and telecom products has led to dependency on other countries for import. It has aggravated the vulnerability and also has strategic vulnerability as other dimension.
- ⑦ Usage of cyber/internet technologies by defense forces also has a potential risk to security of India

Steps by Government

- CERT-IN (Computer Emergency Response Team)
- Indian Cyber Crime Coordination Centre (I4C)
- Cyber crime cells by state governments
- 2013 Policy on cyber-security.
- Cyber Swatchhta tool

Framework for new Cyber Policy

- ① Focus on digital literacy and awareness among people.
- ② Skills enhancement of cyber security professionals.
- ③ Develop indigenous manufacturing base for production of electronics with India to reduce import dependency. Case of Honor Company is a case in point which highlights this need.
- ④ Quick policing of cyber crimes and quick reporting and disposal of cyber crime cases by judiciary.
- ⑤ Protect the key infrastructure like - Power grid links, Nuclear powerplants on priority.

Hence a policy which focuses on more aware citizens, adequate availability of trained manpower with adequate policing and indigenous manufacturing base can reduce the cyber vulnerabilities of India.