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GENERAL STUDIES (TEST CODE : 1419)

Name of Candidate	SHASHVAT SANGWAN	Registration Number	154283
Medium Eng./Hindi	English	Date	Dec 26, 2020
Center	Home		

INDEX TABLE		
Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
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9	10	
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11	15	
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16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- 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 (ब्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे 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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Delhi- 110009

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.

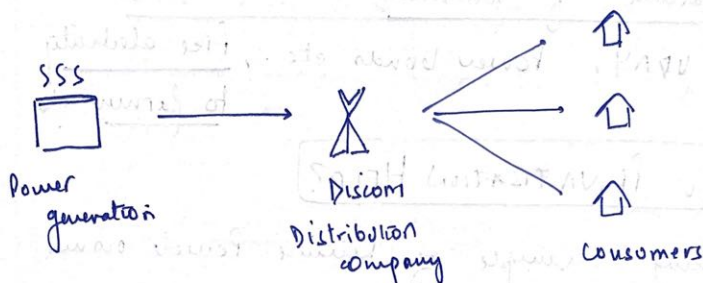
5.

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।

The power supply infrastructure in India consist of three stages -



Issues faced by DISCOMS

- 1) Aggregate transmission losses upto 25% of electricity
- 2) Theft of electricity through parallel lines, faulty meters
- 3) Ageing infrastructure
- 4) Huge debt owed to power generators

5) Competition from Renewable - solar, wind as that is cheaper. Eg ₹ 2.5/unit in Rajasthan (2018).

6) Failure of government schemes like UDAY, Power bonds etc., free electricity to farmer etc

Will PRIVATISATION HELP?

Taking example of, BSES Power owned BSES Rajdhani in Delhi, losses are only 4-5% compared to 25-30% in states.

- 1) New infrastructure to minimise losses
- 2) Efficient metering and administration
- 3) Capital of private investors

However, threats like Energy security, safety of grids, and strategically important supply insurance etc. remain with privatisation.

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।

Over 55% of India's workforce finds livelihood through agriculture in India, according to PLFS 2018.

However, several issues remain:

- ① Low productivity compared to developed nations.
- ② Over-emphasis on paddy, wheat that consume over 5000 L water/kg.
- ③ 50% irrigated agriculture.
- ④ Low technology use: primitive equipment.
- ⑤ Overuse of fertilizer - dual burden of ecological damage and subsidy.

SMART AGRICULTURE refers to modern, technologically advanced methods to increase productivity : Benefits are

① Methods like DRIP IRRIGATION can target water delivery. Increase yield and prevent soil damage.

② Using automated machinery like combine, seeder, harvester on group renting basis.

③ Soil health localised study like health-card scheme for specific nutrient application.

④ Using mixed cropping, multiple cropping, leguminous crops by rotation to naturally raise fertility.

SMART agriculture in Sikkim (organics), and pockets of Kerala have shown positive response.

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।

Nobel Laureate AMARTYA SEN very clearly distinguished between growth and development
 → While growth is a quantifiable, uni-dimensional, and limited utility indicator, Development is what leads to overall well being of individual and society as it includes quality aspects.

EXAMPLES

- (A) * GDP - gross domestic product as a commonly used growth indicator misses out on
- 1* Income distribution : top 1% earn 22% income in India (oxfam)
 - 2* Poverty extreme levels coexists
 - 3* Impact on environment is ignored totally. i.e. no Green GDP.

→ Overall happiness and well being envisioned. eg. Bhutan introduced concept of Happiness Index.

- (B) Ideal of Socialism: Indian constitution highlights a socialistic trend. The Welfare state must focus on growth for all -
- * Including poor into financial system
 - * Formalisation of labour
 - * Equal pay and maternity leave for women (ARTICLE 42, 39(E))
 - * Guaranteed job (NREGA)

(C) International examples

→ Scandinavian countries have focused on Inclusive growth whereas USA, and other western countries focus on capitalistic measures. Norway, Finland, Denmark have lowest crime, high human resource, and stability of economy.

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।

In 2020, at the onset of COVID-19 pandemic, our PM raised an important issue plaguing our economy,

① High Imports - equipments, goods, oil

② Low Manufacturing : only 25% of GDP output

③ Declining exports : Lack of competitiveness

He gave calls for "Vocal for local" and "atma - nirbhar".

CORE AREAS

① Textiles : second largest employer after agriculture, scope for silk exports, technical textiles, gold (Zari) work, muslin etc

→ Issues in textile are - low technology ^{use},
lack of investments, competition from Vietnam
etc.

② STEEL: core of all industries,
India is #2 exporter, but there is
potential to scale-up operations.

③ AUTOMOBILE: India is world's fifth
largest manufacturer with robust
supply chain in Asia. This can be
scaled up to central Asia, Africa etc.

④ TRADITIONAL CRAFTS: Madhubani paintings, bronze
sculptures and other hand-
arts are potential for
export increase and employment creation

⑤ Electronics: phones, equipment

⑥ Pharmaceuticals: vaccines, generic drugs.
can also be promoted owing to
increasing global demands.

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।

Recently, the NITI Aayog's water survey with CPCB revealed severe levels of HEAVY-METAL contaminations in Ganga-Yamuna belt - Lead, Arsenic, Mercury etc.

SOURCES

1) Industrial corridors along the rivers and wetlands cause release of polluting chemicals. eg. Ganga-Hardwar - Rishikesh

2) Acid Rain: when the pollutants from power plants, vehicles come down with rain.

3) Disposal of Dead remains in water

- 4) Non-segregation of hazardous waste
- 5) Fishing e-wastes has arsenic component

CONSEQUENCES

- ① Health risk : increased ailments associated with Arsenic poisoning.
- ② Contaminated water : cannot use for drinking or use.
- ③ Environmental loss : sensitive flora and fauna like Ganges Dolphin die.
- ④ Loss of fishing industry : death of fish.

MEASURES TO TACKLE

- ① Regular monitoring by CPCB, State Pollution Board
 - ② Thorough EIA (Environment Impact Assessment) before granting industrial license
 - ③ Power to CPCB, NCT, CQWB to enforce standards
 - ④ Citizen awareness about arsenic effects
- Therefore, combined efforts are needed.

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।

Ahead Market refers to 'FUTURES'
in economics. Here, the price of
a commodity is fixed in advance,
and the buyer has the option
to buy it at a future date and
price.

Green Term Ahead Market (GTAM)
is a European concept often employed
by Germany, Norway, and Netherlands.

India is a global aspirant in
Renewable energy with active role
in Paris Accord, founding International
Solar Alliance (ISA), and target of 30% Ren-en
by 2030.

Issues faced by Renewable sector In INDIA

- ① Low technology to harness wind, solar and tidal power
- ② Low funding through private route.
- ③ Import dependence for equipment
eg. 90% silicon solar panel from CHINA
- ④ Lack of
conducive policy implementation
eg. failure of PM-KUSUM.

How WILL GTAM HELP

- ① Raise capital for investment
- ② Best global practices incorporated
- ③ Include private sector in development
- ④ Fair price discovery for solar and other renewable energy
- ⑤ Transparency, and faster achieving of Paris Summit targets.

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।

GIS stands for Geographical Information System. Alongwith remote sensing, these can be useful tools in combatting disaster through hazard mapping and geological surveys. The IRNSS, NAVIC, CARTOSAT etc by ISRO are the satellites that enable such capabilities.

ROLE of GIS and RS. in Disaster Management

② Landslides : Through thermal imaging, the potential weakness index of hilly terrain is mapped and warning issued in case of impending threats.

Eg. Uttarakhand in 2015: the Badrinath pilgrims were warned

Eg. The NHAI was ask to build roads cautiously for Char dham pilgrims

② Cyclone : The INCOIS (Indian national center for ocean information system)

issues 24hr and 48hour advance warnings before potential cyclones strike.

Eg. this warned the coastal inhabitants of Chennai Coast 45hr before AMPHAN struck in 2019. Many damages were prevented.

③ Locust Attack : Locusts are agricultural pests that come in swarms of millions.

The LWO [Locust warning organisation] of India issued timely warning to Rajasthan and Punjab farmers in 2020 to play loud sounds to divert swarms away from the fields.

Apart from these, the GIS systems have also proved successful in predicting monsoons, droughts, el-Nino, and other related disasters.

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

क्रिस्परकैस9 (CRISPR/Cas9) अनुवंशिक कैंची द्वारा विभिन्न क्षेत्रों में अनुप्रयोगों के साथ जीनोम संपादन तकनीक में क्रांतिकारी परिवर्तन का संचार किया गया है। चर्चा कीजिए।

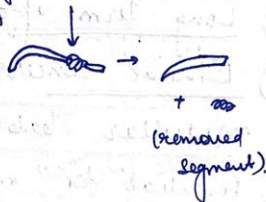
CRISPR technology is also known as BIOLOGICAL SCISSORS. It is essentially a Re-combinant DNA technology to selectively replace / remove faulty segments of our DNA. It won nobel prize in 2017.

PROCESS OF CRISPR

① Identify faulty sequence in DNA



② Add Cas9 protein targeted to faulty DNA



POSITIVE POTENTIAL

① Disease treatment : many genetic ailments that are auto immune can now be cured by selectively removing the causative faulty DNA → cancers, Huntington.

② Designer Baby : Selective DNA segments that control eye colour, height, or physical features can be modified as seen in Chinese experiment (2018).

③ Knowledge, R&D : much needed boost to biotechnology. This has stimulated many studies and researches even among animals and plants.

HAZARDS

① Long term effects unknown

② Ethical concerns with designing modular babies

③ Potential for misuse : human cloning, disease breakout due to mutations

④ Bio warfare : If virus genome is modified, can be potential bio-weapon

Hence, there is responsibility associated with using CRISPR technology; must be used carefully.

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।

Money laundering, as defined by the Section 2 of PMLA 2002 is "placement, layering, and integration of wrongly acquired property or wealth through concealment from authorities".

FATF is an institution by European Union and OECD which coordinates a global anti money-laundering exercise.

Role played by FATF

- ① Global Arena : of more than 36 countries to discuss and coordinate operations
- ② Sanctions on Defaulters : The Black-list, Grey list, Dark grey list are graded sanctions applied to countries that

haven't taken adequate measures to prevent money laundering.

Eg. IRAN, PAKISTAN (2019 - grey list
2020 - black list)

③ Coordinate with other monetary institutions like World Bank, IMF by sharing information and targeting defaulters -

④ Boost to anti-money laundering operations by facilitating FATF-IND, Asia Pacific Task Force and other regional bodies.

However, it faces a few challenges like -

- 1) Lack of global participation, specially by Tax havens like Mauritius, Cayman Islands
- 2) Lack of funds
- 3) Lack of functionaries
- 4) European bias

Despite these, FATF is a globally important institution for money laundering combatting.

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।

Ex PM Narasimha Rao had called security architecture the 'backbone' of industrial reforms in India. This includes -

- (A) Security within India : challenges include secessionist groups, Naxalism, or terrorist groups
- (B) Trans national Security : includes securing maritime trade, border management etc.

SOME RECENT REFORMS

(1) National Security Advisor : Similar to Australia and Canada, this cabinet level position provides a "bird's eye" supervision and coordination amongst various agencies like Nuclear-command authority, IB, RAW.

(2) Chief of Defence staff : Common head for Army, Navy, Airforce that reports to

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Defense minister for Inter-services
coordination and resolving arguments.

③ Theater Commands at borders and
Andaman Islands where joint troops
of Army, Navy, airforce, coast guard
are combined as mobile units for
maximum attack and defense potential.

④ Defense Acquisition Council : to decide on
procurement timely. This has wide
powers and headed by defense minister.
Recent Rafale fighter procurement was by DAC.

⑤ New Procurement Category : Buy foreign, make
in India - this will boost domestic
capability to manufacture arms and
ammunition.

These steps are in the right direction,
as suggested by SHEKATKAR Committee post Kargil war.

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।

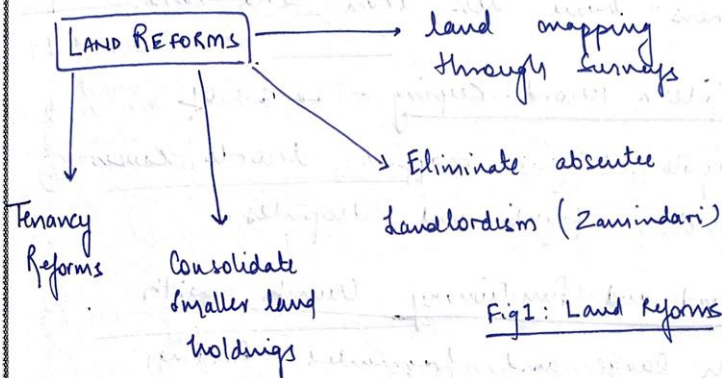


Fig1: Land Reforms

India has 16% of world population but only 2.5% land resources. That is important because 55% Indians derive livelihood through agricultural activities (PLPs-2018 data)

The agenda for land reforms featured high on priority post-Independence with zamindari abolition, modern land records etc.

Issues Faced

- ① Fragmented holdings : 87% of Indian farmers have less than 2ha land.
- ② Modern record keeping : Lack of computerised geo-mapped records causes conflicts, fights and disputes.
- ③ Fund and functionary crunch with such large and fragmented holdings
- ④ Federal issue : Land being state subject, coordination between model policy by center and state policy is lacking.
- ⑤ Forest rights act, 2006 : Many claims of tribals and traditional dwellers are rejected, community rights not respected.
- ⑥ Low use of technology : like drone based survey, database of owner-tenant.

⑦ Tenancy agreements: barely present which inhibit formal credit, insurance or marketing by landless croppers.

Possible Advantages by Land reforms

① Faster dispute settlement by schemes like P2 - Swamitha to map land holdings by geo mapping drones.

② Model Tenancy Act for farmers can increase productivity by cheaper loans, better conditions for contract farming etc.

③ Easier acquisition under LARR 2013 for development projects like freight corridor.

④ Possibility of land pooling: to access modern technology like seeder, harvester for higher yield.

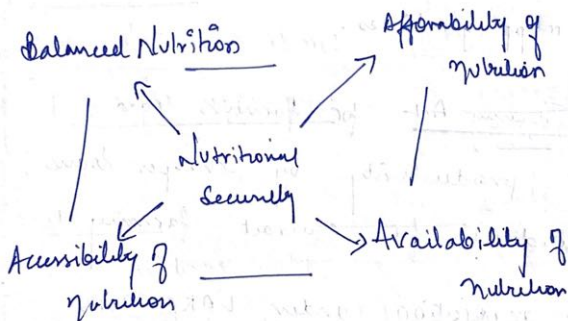
⑤ Eliminating middlemen gaminians who exploit farmers.

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।

World Health Organisation defines nutritional security in four components.



India was an import-dependent country post Independence for wheat, rice, pulses even to feed its citizens. However, Green Revolution of 1970s changed that and the "FOOD SECURITY" aspect was taken care of.

However, 'Nutrition Security' is a wider term that includes more than just solving hunger.

SIGNIFICANCE FOR INDIA

- ① Obesity: India has 3rd highest obesity population as per global hunger report
- ② Anaemia and Under nutrition: due to high poverty levels - over 270 million Indians below poverty line and 50% mothers are anaemic.
- ③ Monoculture of rice and paddy due to skewed MSP (minimum support price) rules causes deficiency of vitamin, fiber, and essential proteins
- ④ Young population: With over 50% population of India below 21 years, the children must be given adequate vitamins, and calories

FRAMEWORK to be Adopted

- ① Policy: National food security mission should be changed to Nutrition Safety Mission and include wholesome and balanced dietary foods - milk, eggs and pulses
- ② Regulatory bodies - like FSSAI should increase awareness about junk food eg. "EAT right movement", "Low SALT/SUGAR CAMPAIGNS"
- ③ Fortified foods in mid day meals for school children like in Kerala to cure IRON / ZINC deficiency.
- ④ Universal Basic Food: like UK / Australia where government provides milk and eggs to all population for wholesome development.
- ⑤ Promote breast feeding, extra nutrition for Pregnant and lactating mothers - PM-MVY, MAA etc.

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।

Private Sector refers to non-government funded or operated businesses. These entities may be domestic as well as foreign.

Private sector is criticised for Profit motive, unbalanced growth, and widened income gap. However, they still hold the key for India's development, as.

① Access to capital : over and beyond what the government can provide.

Eg. The new Texas high speed trains

② Access to better manpower and resource utilisation - efficient practices "

Cost-to-company model, cutting costs, helps boost savings.

③ Better technology : with foreign capital, the flow of technology follows. The recent apple inc manufacturing plant in Karnataka is an example.

④ Employment and Skill development
- More jobs are created with inflow of capital. Eg. The Karnataka (Bangalore) and Hyderabad cyber-based IT sector.

STEPS by GOVERNMENT

① Post LPG Reforms in 1991, now the FDI is permitted in all but 5 strategic sectors like rail ops, nuclear etc.

② PPP - Private - Public Partnership model explored in NHAI, NTPC and other PSUs - Toll booths using Hybrid Annuity Model are more examples.

③ Selling stakes - Disinvestment - NITI Aayog recommends strategic disinvestments to raise finances as well as improve overall efficiency : eg. IPCL, Air India sale etc.

④ HELP: Hydro carbon exploration and leasing policy for all-in-one private mining licence in 2018 boosted bids and revenue for government.

⑤ International Arbitration bodies follow along global standards for quick resolution of arising disputes.
eg. GIFT City, Gandhinagar, Gujarat

These steps have led to India being world's #3 recipient of FDI after USA and China in 2019-20 (according to World Bank)

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।

Indian subcontinent exhibits considerable

geographical diversity : Fig 1.

This diversity often proves to be a HURDLE in development across regions. as

① Hill areas pose connectivity issues through road, rail, eg. North East Region



② Economic Corridors - people development
Concentration → eg. Delhi-Meerut, Mumbai Pune.

③ Historical factors : regions under British rule saw modern telegraph, postal service, and connectivity but excluded areas, which

are today's Scheduled areas lag basic facilities as well.

④ Natural Resource diversity: Iron, Coal in central belts of Jharkhand, Chhattisgarh led to investment and industry development.

Meanwhile Vidarbha, MH due to water scarcity has very low agricultural and industrial success.

SIGNIFICANCE of Targeted regional plan

① Ensuring equity across regions and providing basic amenities to all Indian sections.

② Curbing regionalism and secessionism

- demands for autonomy, self rule often stem from low development regions
e.g. left wing Extremism in central areas of India.

VISION IAS™

③ Ensuring SDG target is realised - in terms of hunger, poverty, sanitation and other developmental indicators.

④ Cultural unity: Some sections of tribals, north-east residents, ~~for~~ feel alienated from mainstream development agenda. They need to be assured through confidence building measures.

POSITIVE STEPS BY GOVERNMENT

① Special category states - for grants-in-aid, central sponsored schemes to Hilly states, international border states etc.

② Forest Rights Act, 2006: recognised tribal land rights as well as right over minor minerals and forest produce.

③ Aspirational Districts: Programme by NITI Aayog to target lowest performing 115 Indian districts. These steps have potential for balanced regional development.

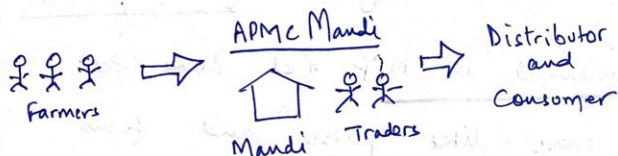
15. Empowering the farmers by ensuring barrier-free trade in the agriculture produce is critical in doubling their incomes. Enumerating the existing bottlenecks, discuss how the recent legislations can help in overcoming them. (250 words) 15

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।

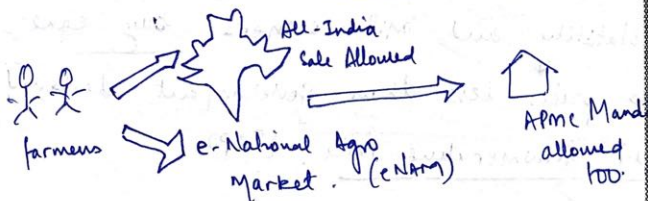
Marketing of agricultural produce remains the most crucial pillar in doubling farmer incomes.

The Ashtok Dalwai committee estimated that out of every 1 Rupee at retail, 25 paise accrues to farmer.

Current Marketing infrastructure - APMC Act 2003



Proposed legislation [Farm Produce Marketing Act 2020]



Issues with farmer trade

- ① Very low profitability
- ② Traders at APMC mandis form cartels
and poor-price realisation
- ③ Limit on selling produce outside
APMC mandis
- ④ Ban on stocking essential food items
under Essential commodity act 1955
caused forced selling during price crashes
- ⑤ Procurement in MSP not done for
all crops like pulses and focus
on monoculture.
- ⑥ Sugar farmers see high price
volatility and mill owners buy cane
as prices less than government declared
Fair Remunerative Price (FRP)

- ⑦ Flood of imports: wheat, rice cheaper in international market due to subsidy by rich nations like USA.

How Will NEW LEGISLATION HELP

① New farmer contract Law

→ corporate must engage farmer on favourable terms. e.g. Pepsico potato Laws farmers in Gujarat.

② Amending ECA, 1955

→ food items removed from stock-prohibition
→ Farmers can delay selling till price rise
→ NWR (negotiable warehouse receipts) to act as collateral for stocked food items

③ Farmer Marketing Amendment 2020

→ Opens access to Pan-India markets
→ Eliminates need for middlemen

But concerns over Inertia of farmers, livelihood of trader, awareness about new schemes, and FARMER PROTESTS in Delhi arise.

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।

According to recent Disaster Vulnerability Index 2019 by UNDP and Ministry of Home Affairs, over 40% of Assam and 70% of North Bihar is flood prone.

Reasons for Flooding

- ① Rivers overflowing banks. Kosi in

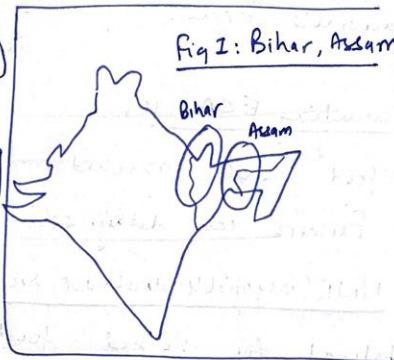
Bihar, and rivers

Mans, Dibang,

Subansiri, and Brahmaputra overflow their

banks every year during monsoon season.

Fig 1: Bihar, Assam



- ② High population density : The plains of Bihar and Assam feature India's

highest density of population. This leaves more scope for flood damage and lesser regions to migrate to.

③ Encroachment over river flow areas by residential housing, commercial establishments causes more damage during floods.

④ Polluting river beds, sand mining, and uprooting vegetation are other causes that enhance flood damage.

Hence these reasons go far beyond the topographic vulnerability.

Measures To Control

① Hazard Mapping of flood prone regions by Drones, remote sensing

② Flood Warning System : when dams
release water or when excess rainfall
is received.

③ Mangrove, tree shelter belts to
reduce flood impact.

④ Regular dredging, de-siltation of
river banks

⑤ Enforcing Ramsar wetland guidelines
about marking river channels and
wetlands as "ecologically sensitive".

⑥ Rehabilitation of victims of floods
and those living in prone areas.
e.g. Hill tribes of Bodo region
in Assam.

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 or FIFTH Generation internet
technology is characterised by :

- Very high speed internet speeds
of upto 500 GBPS
- Advanced and specialised supporting
infrastructure of telecom and mobiles.
- Huge investments in technology

Potential of 5G in Indian
Digital Revolution

① Education : With covid pandemic disrupting regular schools, e-schooling and e-learning portals are gaining importance. They rest on pillars of high speed internet. Eg. DISHA PORTAL, NPTEL, Khan Academy.

② Healthcare: e Consultations to advance healthcare to regions that are isolated
eg: e-Sanjivani initiative over internet.

③ Fostering Research and Development

④ Improving Manufacturing and Export of telecom industry.

⑤ Provide employment: through work from home, BPOs, services industry.

⑥ Foster Arts, Cinema: with 5G, over-the-top (OTT) Platforms like Netflix, hotstar are expanding reach. More artists are getting a boost.

Issues with 5G

① Privacy Issues: with worlds largest FB and Whatsapp users (400million), there is potential for data leak, unauthorised access etc. eg, Zomato data leak 2018.

② Concerns over Imports : currently over 70% telecom equipment is China-sourced. This raises issues of Trade deficit, data security, and malware.

③ Cyber crime : cyber warfare, cyber terrorism is gaining speed. Symantec study of 2018 revealed India is in top 5 most vulnerable countries. eg. 'Petya', 'Wannacry' (2020).

④ Redundancy of 4G, 3G : 5G is not compatible with existing 3G/4G infrastructure. This will cause large amounts of e-WASTE.

WAY FORWARD

- * India-based 5G manufacturing
- * Strong legislations like IT Act 2008
- * Specialised agencies for cyber crime
- * Awareness programs about data privacy and new Information Data Protection Bill.

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 चुनौतियां क्या हैं?

Quantum Computing Mission was recently launched by Ministry of Electronics and IT.

Q.C. refers to advanced processing systems where one bit of information can simultaneously represent more than one value. This enhances processing speed.

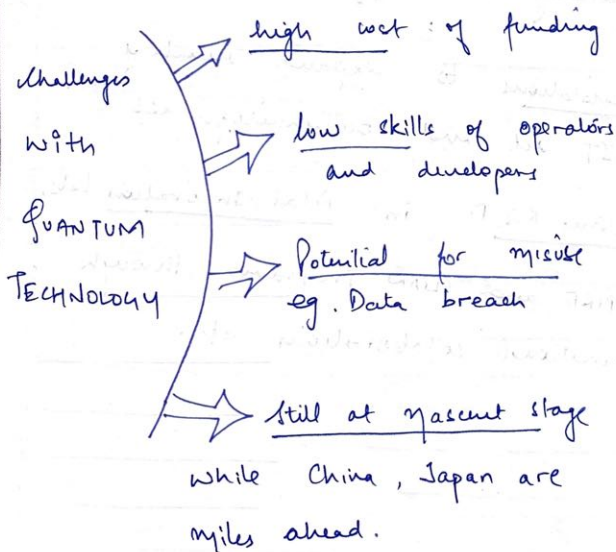
Eg. Binary computing bits can either be 0 or 1. But quantum processing can be both at same time.

POTENTIAL APPLICATIONS

- ① Big Data Analysis: Large chunks of user data can be quickly scanned, stored and processed. Eg. Aadhar data, road accident data, DNA user bank.

② SPACE RESEARCH: Hysic mission or hyper spectral imaging to remotely sense geography can be used to enhance space research and applications

③ Healthcare: Biotechnology experiments to find cures for Cancers, Vaccine develop and molecular biology calculations can be done with precision.



Way forward① Public Private Partnerships

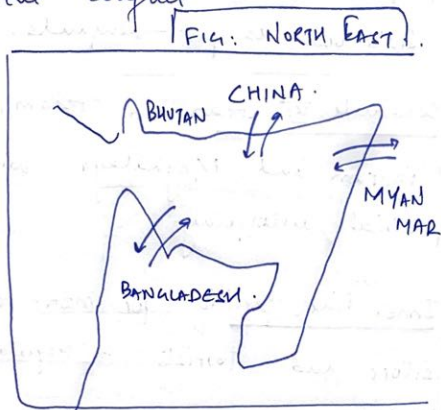
to raise capital, boost technology
in quantum technology. Eg Toshiba of
Japan installed image systems in
delhi CCTV monitoring of metro station

② Awareness among stakeholders
regarding technology pros and cons.③ Legislations to expand reach of
IT act and Biotechnology act.④ Fostering R&D in Atal Innovation Labs,
INSPIRE and CLAR programs through
international collaboration etc.

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।

North East Insurgencies refers to armed, violent conflict by citizens against the State due to varying demands like political autonomy, feeling alienated, and low development levels.



Since independence, a number of treaties, accords, and political concessions have been granted to these groups -

- ① Assam : → Bodo Territorial Council, 2003.
→ NRC exercise for flushing out
illegal migrants
- ② Manipur, Nagaland, Arunachal : granting
Statehood as per demands.
- ③ Schedule VI areas in Assam, Tripura,
Mizoram and Meghalaya with enhanced
political autonomy.
- ④ Inner line permit : for non-resident
visitors and tourists to regulate outsider
influx.
- Post these, many groups like ULFA, AAIU,
BTF, NSCN-IM have given up arms.

(However, many potential issues remain)

- ① Geographical : isolation from mainland,
poor rail and road infrastructure,
hilly areas with high forest cover.

② Economic

- * Low development indicators of income, prosperity and balanced growth.
- * Low level of industrialisation
- * Unemployment and skill deficit

③ Cultural : * distinctive culture with over 200 tribes and 3,500 dialects.

- * Ethnic bonds accelerate economic suffering and polarisation

④ Administration : Corruption, inefficiency.⑤ (AFSPA) The armed forces special power act enables unrestricted military powers while curbing civil liberties. States like manipur, mizoram have AFSPA since 1958.

Thus, these concerns must be addressed to address the insurgency problem holistically

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।

Cyberspace refers to the overall IT based infrastructure.

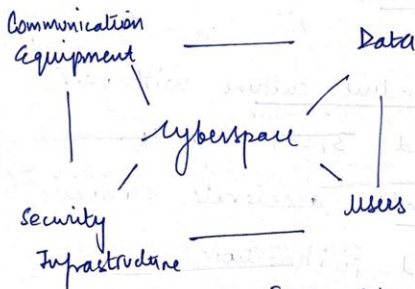


Fig 1: Cyber space aspects

Vulnerability in India's Cyberspace

① High number of users

→ World's largest social media

users on FB/WHATSAPP ~ 400 million

→ Second largest smartphone user base

② History of Data Breach

- Stealing personal information like health records, credit card details etc
eg. Zomato and Uber data
hacked in 2018

③ Banking Infrastructure : e Kuber, the Core banking infrastructure of RBI is cyber-based. SEBI, NBFCs, and banks are all digitised.

④ Low Awareness - among users leads trap to Nigerian hackers sending phishing mails, banking frauds etc.

⑤ Cyber Warfare using ransomware — petya, wannacry to block access and demand ransom.

DRDO and ISRO website data has been hacked as well by Pakistani Hackers.

STEPS for new Cyber Security Law

- ① Dedicated national level anti-crime agency with all functions including monitoring, coordination, and investigation.
- ② Remodelling of CERT-IN and other local cyber crime cells.
- ③ User Awareness Campaigns like those by TRAI about phone PAYTM scams etc.
- ④ Amending IT Act 2000 to enable time bound investigation, establishing special courts for offences.
- ⑤ Data Localisation norms for enhanced protection of data within geographical boundary.

Other suggestions by Justice Srikrishna Committee and EU's GDPR can be used as models, which can be customised.