



VISIONIAS
INSPIRING INNOVATION
ABHYAAS MAINS

सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)

निर्धारित समय: तीन घंटे
Time Allowed: **Three Hours**

अधिकतम अंक: 250
Maximum Marks: 250

सामान्य अनुदेश

इस प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका में 55+1 पृष्ठ हैं। प्रश्न-पत्र, क्यू.सी.ए. पुस्तिका के अंत में संलग्न है, जो अलग (वियोज्य) किया जा सकता है और उम्मीदवार परीक्षा के उपरांत अपने साथ ले जा सकते हैं।

रफ कार्य के लिए, इस पुस्तिका के अंत में खाली पृष्ठ दिया गया है।

पुस्तिका प्राप्त होने पर, कृपया यह जांच कर लें कि इस क्यू.सी.ए. पुस्तिका में कोई कमी न हो, फटा हुआ पृष्ठ न हो अथवा कोई पृष्ठ गायब न हो इत्यादि। यदि ऐसा हो, तो इसके बदले नई क्यू.सी.ए. पुस्तिका प्राप्त कर लें।

General Instructions

This Question-Cum-Answer (QCA) Booklet contains 55+1 pages. Question Paper in detachable form is available at the end of the QCA Booklet which can be taken away by the candidate after examination.

For rough work, blank page has been provided at the end of this Booklet.

On receipt of the Booklet, please check that this QCA Booklet does not have any shortcomings, torn or missing pages etc. If so, get it replaced with a fresh QCA Booklet.

(उम्मीदवार द्वारा भरा जाएगा/To be filled by the Candidate)

पंजीकरण सं./Registration No. : 1040615

अभ्यर्थी का नाम/Name of Student : R. Ranganaju

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

25/8/24

**सामान्य अध्ययन (प्रश्न पत्र-III)
GENERAL STUDIES (Paper III)**

केंद्र
Centre

JBS,
Kaul Bagh

निरीक्षक के हस्ताक्षर
Invigilator's Signature

A

	<p style="text-align: center;">महत्वपूर्ण अनुदेश</p> <p>उम्मीदवारों को नीचे उल्लिखित निर्देश सावधानी से पढ़ लेने चाहिए। किसी भी निर्देश का उल्लंघन करने पर उम्मीदवारों को मिलने वाले अंकों में कटौती, उम्मीदवारी रद्द या आयोग के परवर्ती परीक्षाओं के लिए वर्जित करने इत्यादि के रूप में दण्डित किया जा सकता है।</p>	<p style="text-align: center;">Important Instructions</p> <p>Candidates should read the undermentioned instructions carefully. Violation of any of the following instructions may entail penalty in the form of deduction of marks, cancellation of candidature, debarment from further Examination of the Commission etc.</p>
1	<p>(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें।</p> <p>(ख) इस पुस्तिका में अन्यत्र कहीं भी अपना नाम, पंजीकरण सं., मोबाइल नं., पता अथवा प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) संख्या न लिखें जिससे आपकी पहचान का खुलासा हो।</p>	<p>(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates.</p> <p>(b) Do not disclose your identity in any manner such as, by writing your Name, Registration number, Mobile number, Address, Question-Cum-Answer (QCA) Booklet No. etc. elsewhere in the Booklet</p>
2	<p>अपनी प्रश्न-सह-उत्तर पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तर के अतिरिक्त कुछ न लिखें जैसे कि कोई कविता/दोहा, अभद्र या अपमानजनक अभिव्यक्ति इत्यादि और न ही कोई ऐसा चिन्ह/निशान बनाएं जिसका उत्तर से सम्बन्ध न हो।</p>	<p>Do not write in the QCA Booklet anything other than the actual answer such as couplet, obscene, abusive expression etc., nor put any sign/mark having no relevance to the answer.</p>
3	<p>परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।</p>	<p>Do not make any direct/indirect appeal/threat to the examiner.</p>
4	<p>उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।</p>	<p>Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.</p>
5	<p>उत्तर स्याही में ही लिखें। उत्तर लिखने के लिए पेंसिल का उपयोग न करें, हालांकि आरेख, चित्र इत्यादि बनाने के लिए पेंसिल का उपयोग किया जा सकता है।</p>	<p>Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.</p>
6	<p>प्रवेश पत्र में उल्लेख किए गए माध्यम के अलावा अन्य किसी माध्यम में उत्तर न लिखें। अधिकृत और अनधिकृत की मिली जुली भाषा का भी उपयोग न करें।</p>	<p>Do not write answers in medium other than the authorized medium in the Admission Certificate. Do not use mixed language either i.e. authorize and unauthorized media together for writing answers.</p>
7	<p>प्रश्नों के उत्तर ठीक उसके नीचे दिए गए निर्धारित स्थान पर ही लिखें। निर्धारित स्थान के अलावा किसी अन्य स्थान पर लिखे गए उत्तर का मूल्यांकन नहीं किया जाएगा।</p>	<p>Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.</p>
8	<p>यदि आप अपने किसी उत्तर को रद्द करना चाहते हैं तो उसे पेन से काट दें तथा उस पर "रद्द" लिख दें, अन्यथा उसका मूल्यांकन किया जा सकता है।</p>	<p>If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.</p>

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
<p>परीक्षक के हस्ताक्षर Signature of Examiner(s)</p>	

प्राप्तांक के विवरण (परीक्षक द्वारा भरा जाए)/ Marks Details (To be filled by the Examiner(s))

प्रश्न सं. Q. No.	अंक Marks		प्रश्न सं. Q. No.	अंक Marks	
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		
उप-योग (A) Subtotal (A)			उप-योग (B) Subtotal (B)		
सकल योग (A+B) / GRAND TOTAL (A+B)					



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निर्धारित समय: तीन घंटे
Time Allowed: **Three Hours**

अधिकतम अंक: 250
Maximum Marks: **250**

प्रश्न-पत्र संबंधी विशेष अनुदेश

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

कुल बीस प्रश्न दिए गए हैं जो हिंदी और अंग्रेजी दोनों में छपे हैं।

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions.

*There are **TWENTY** questions printed both in **HINDI** and in **ENGLISH**.*

All questions are compulsory.

The number of marks carried by a question/part is indicated against it.

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 a medium other than the authorized one.

Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.

Keep the word limit indicated in the questions in mind.

Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.

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.

VisionIAS

All the Best

1. खाद्य प्रसंस्करण उद्योग का तीव्र विकास किस प्रकार भारत में खाद्य सुरक्षा संबंधी चुनौतियां उत्पन्न कर रहा है?
(उत्तर 150 शब्दों में दीजिए)
How is the rapid growth of the food processing industry leading to food safety challenges in India? (Answer in 150 words)

उम्मीदवारों को
इस हार्जिन में
नहीं लिखना
चाहिए
Candidates
must not
write on
this margin

Food processing industry is a
sunrise industry with CAGR of 8-10.5%

by 2025

Rapid growth of food processing industry

- ① MSME like growth in food industry
↳ village cooperatives led growth
- ② FPO led food processing industry
↳ MHEB in Maharashtra for grape clusters
- ③ Factors promoting rapid growth
 - ① PMFME: formalisation of food processing sector
 - ② easy credit access
 - ③ better market linkages

Food safety challenges

① Outside regulatory purview

↳ FSSAI does not regulate
smaller units

② Easy scope for adulteration

eg Milk → Ghee

Urea as adulterant

③ Quality checks lacking

eg Pappads grown by informal sector do not undergo quality checks

④ No accreditation entity such as PCI to regulate growth

⑤ Non declaration of raw materials used on labels

↳ no information on nutrient quantity

ie, caloric input etc

eg Jam constituents made of palmolein oil

This leads to challenges in consumer safety with respect to asserting responsible choice & informed choice. FSSAI may

2.

भारत की सार्वजनिक वितरण प्रणाली के अंतर्गत उचित मूल्य की दुकान (FPS) का प्रारंभ एक विकासशील प्रक्रिया है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words)

10

उम्मीदवारों को इस ह्रासिए में नहीं लिखना चाहिए
Candidates must not write on this margin

The Transformed PDS system through FPS directly connects beneficiary with food grains, behaving as first line of contact under NFSA, 2013

FPS transformation is evolving

- ① Initially doled out only food grains for certain sections (upto 1995) BPL
APL
- ② Later began identifying poorest of poor for extra rations AAY (Antyodaya Aay yojana) upto 35kg/ family
- ③ Under NFSA, 2013 transformed into rights based measure

FPS operates as } → first line of contact
→ provisioning of food grains from central quota
→ provisioning from state quota (⊕) kerosene

Newer paradigmatic changes

उम्मीदवारों को
इस इतिहास में
नहीं लिखना
चाहिए
Candidates
must not
write on
this margin

- ① e POS : E-point of sale machines for better identification of beneficiaries
- ② ONORC : One Nation one ration card for integrated management of PDS. (migrants)
- ③ Aadhar seeding : To prevent inclusion/exclusion errors

This transformation helps avoid

- ① leakages (e) black marketing, redirected sales
- ② better record keeping
- ③ aligns with Financial Management System

Changes still desirable, are:

- ① technology patches to ensure deserving not left out
- ② better surveillance to prevent quid pro quo at dispatch centres

3. भारत में एग्रीटेक स्टार्ट-अप्स किसानों की कृषि उत्पादकता एवं बाजार पहुंच बढ़ाने में किस प्रकार मदद कर रहे हैं? (उत्तर 150 शब्दों में दीजिए)
- How are agri-tech startups in India helping farmers in enhancing farm productivity and market access? (Answer in 150 words)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए।
Candidates must not write on this margin

10

Agri technology as the new buzz word seeks to tap into the nearly 50 \$ Billion untapped market (Nomura)

Agri tech startups help increase productivity

- ① Yield management : technology integration
 - ⊕ using sensors $\left\{ \begin{array}{l} \text{remote} \\ \text{proximate} \end{array} \right.$ to automatically reduce distribution
- ② Optimal usage of fertilizers (pesticide inputs)
 - ⊕ drones to spray potash solution
not upsetting N:P:K of 4:2:1
- ③ Seed tilling machinery for greater success: ⊕ happy seeder technology
- ④ Reducing farm residue:
 - ⊕ Pusa-186 solution by ICAR & PS university
- ⑤ Satellite based advisory services for tilling and cropping at right time

Startups & market access

- ① Enables access to foreign market
(eg) Rythu Mitra in Kerala teaming with KoLcoms to export to untapped markets like Norway, Sweden
- ② Enhances price discovery → farmers getting right price by integrating across domestic markets
- ③ Reduces information asymmetry → enabling better price demand
- ④ Verifying contracts with middlemen for exploiting condition (eg) e-Nyay portal
- ⑤ Developing tools for grading and sizing so market dispatch can happen from farmgate to retail
(eg) Apple's measure app.

While entrepreneurs improve the market by solving niche issues, govt must protect farmers from predatory nature of capitalist enterprise.

4.

भारत में भूमि सुधारों के प्रभावी कार्यान्वयन में भूमि अभिलेखों के डिजिटलीकरण की भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Discuss the role of digitization of land records in the effective implementation of land reforms in India. (Answer in 150 words)

10

The land reforms which can be traced to Kemoreppa Committee in 1951 continue to happen given scarce nature of land in India; (< 23% of land supporting 18% population)

Role of digitization of land records

- ① Clarifying possession on land records
 - eg) Rights of Records in PM SWAMTIVA scheme
- ② Ensuring correct drawing of boundaries
 - eg) cadastrel mapping using GIS
↳ this ensures better access to land
- ③ Reducing legal backlogs
 - eg) upto 40% cases in courts are land related and average 20 years for resolution : World Bank
- ④ Tapping into economic potential of land

- ⑤ Increasing investments into land
(eg) through creation of land banks.
- ⑥ Improving record keeping for easier
access to govt to compensate farmers
post land acquisition
[Eminent Domain]

Govt's agenda in this direction

① DIRLMP: Digital India Rural
Land Modernisation Programme under
Ministry of Panchayati Raj & Rural
Development

② ULPIN generation: Unique Land Parcel
Identification number
↳ bhv - oadhar : 14 digits

[Best case study]: Ktaka's e-bhoomi portal
for land digitisation allows quicker resolutions

However, govt must be wary of
cyber security issues and digital illiteracy while

undertaking measures to reform using technology (eg) Blockchain

5.

भारत को अपने जनसांख्यिकीय लाभांश का पूर्ण उपयोग करने और आर्थिक विकास में तेजी लाने के लिए एक विनिर्माण-केंद्रित विकास मॉडल को अपनाने की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

To fully exploit its demographic dividend and accelerate economic growth, India needs to adopt a manufacturing-led growth model. Discuss. (Answer in 150 words) 10

India's population [largest in 2024 as per UN Population Fund] will retain highest young population till 2044 [World Bank], while India's economy is projected to grow upto 75% (Economic Survey 2024)

Why there is a need to adopt manufacturing led growth

- ① Agriculture becomes non remunerative
→ already disguised unemployment
PLPS says ~47% employed for 17% GVA
- ② Services sector is jobless growth
~56% GDP employing less than 33%
- ③ Manufacturing creates jobs
eg Textile industry employing ~4.5 crore and 8 crore across value chain.

Pigggybacking on economic growth

this can be achieved through,

- ① Increased investments in manufacturing
 - (a) PLI scheme,
- ② Enhanced start up culture of entrepreneurship model
 - (a) Standup India, start up India
- ③ Select sectors focussed on for strategic purposes
 - (a) Solar energy sector, electronics & chip manufacturing

India's growth trajectory to remain strong must be job led to prevent youth discontent leading upto crises like Bangladesh crisis. However, economists such as Raghuram Rajan warn that India cannot compete with China in manufacturing sector due to early mover advantage it possesses

6.

जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)

How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words)

10

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

India's 7,800 km long coastline has vulnerability in nearby 2/3rds of it
(NDMA)

Growing natural hazards from climate change

① Frequent cyclones

(eg) Amphan across Bay of Odisha
increased intensity and irregularity
⇒ tracking by IMD is proving fruitless

② Increased landslides

(eg) Kerala, Waynad landslides

③ Increased burst of monsoon

across Konkan coast, lower Maharashtra
leading to silting issues

④ Increased incidences of 'rip-tide' in coasts -

⇒ dangers to fishermen & recreational activities

Resilience can be strengthened through

① Odisha like approach

Zero mortality by increasing the preparedness levels

② People centric approach

Mock Drills & adequate warnings to simulate conditions

↳ drawing up of mitigation & disaster preparedness plans at Panchayat level

↳ first responder approach

③ Early warning systems ④ RIMES for coastal flood warnings

④ ISKRA + AAI advisory to fishermen to not venture into deep sea

Using technology we can combat growing threat of climate change led disasters

7.

भारत में अधिक संधारणीय पर्यावरण को बढ़ावा देने के लिए ग्रीन क्रेडिट प्रोग्राम किस प्रकार कार्बन प्रबंधन से कहीं अधिक विस्तृत है? इसके कार्यान्वयन के संबंध में विभिन्न चिंताएं क्या हैं? (उत्तर 150 शब्दों में दीजिए)
How does the Green Credit Programme extend beyond carbon management to promote a more sustainable environment in India? What are the various concerns about its implementation? (Answer in 150 words)

उम्मीदवारों को इस ह्राशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

10

Green Credit Programme Carried out by ICRI SAT. sub concern deals with monetising green belts of vegetation planted

Extends beyond management of carbon

- ① Greening for aesthetic ends
- ② Reforestation of deforested lands
- ③ Scientific ally backed sound tree management
- ④ Taps carbon market - creates channels of wealth generation
- ⑤ Sustainability also through
 - water purification due to wetland effect
 - provision of resources
 - ⑥ cooling space for biota etc

It allows participation of private individuals also,

Various concerns

- ① Misdirection of forest credit
- ② Credit generated in excess of actual plantation work \Rightarrow Corruption in system
- ③ Multiplicity of agencies \rightarrow Mismanagement
 - \rightarrow State Forest Dept
 - \rightarrow ICRISAT
- ④ Do not resolve underlying issues of deforestation
- ⑤ Not truly 'carbon offsetting' in nature
- ⑥ Might prompt 'commercial plantation' against environmental ethos.

8.

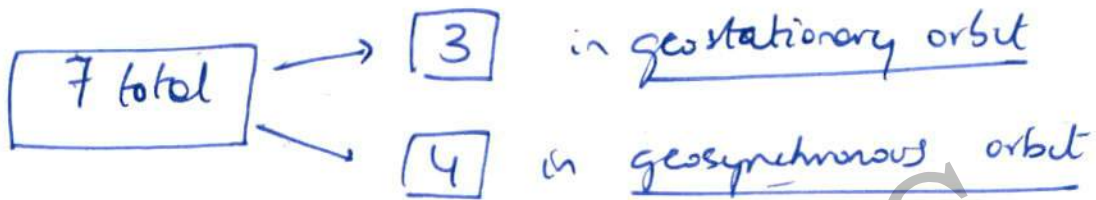
जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)

What is the need for NavIC when existing satellite navigation systems are already available?
(Answer in 150 words)

10

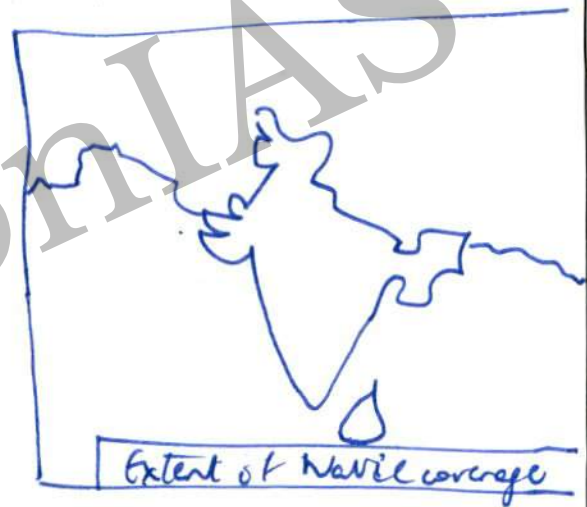
उम्मीदवारों को इस प्रश्न में नहीं लिखना चाहिए
Candidates must not write on this margin

NavIC refers to a constellation of satellites [7 = 3 + 4] that serves as Regional Navigation System.



Extent of coverage:

↳ 1500 km beyond India's borders



Need for NavIC

① Strategic security

India's coast be at mercy of GPS (USA) or Galileo (EU) .

② Need for SAGAR initiative

Security & growth for all in region for maritime domain awareness (MDA)

③ Need for security forces

eg) Airforce uses GSAT 7 and navy
GSAT 7A in addition to NavIC

Purportedly used in Pulwama retaliatory
air strikes on Pakistan

④ Advisory for fishermen & ships in sea

⑤ Science integration ⇒ provisioning
for research & development as tool

⑥ Defects in others

① Beidou under Chinese hegemony

↳ date theft may occur

② QZSS by Japanese are
regional in deployments

③ Russian GLONASS is technologically
outdated

By investing in NavIC, India invests
in herself en route to 'Atmanirbhartha'

9.

साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)

Cyber-enabled financial crime has emerged as the new frontier of global money laundering. Discuss. How can the government address this issue? (Answer in 150 words) 10

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए। Candidates must not write on this margin

Cyber crimes have evolved in magnitude now spanning the far reaches of the globe

Cyber crime as new frontier of global money laundering

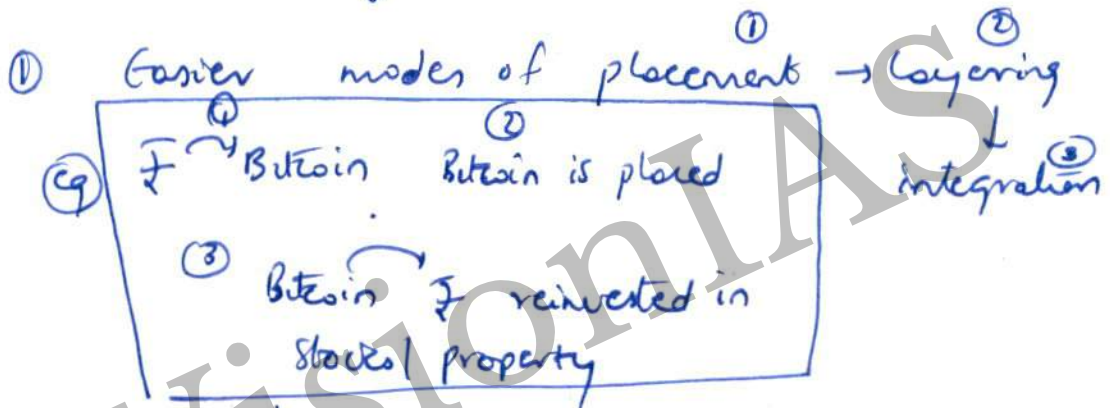


Fig 1: Cyber crime with ml

②. Technology integration (eg) Blockchain
anonymity → difficult to trace hacker

(eg) Wannacry cybercrime

③ Integrated financial system → easy
transfer of funds globally (eg) ransomware
 funds transferred to Nigeria routed through
Parame

④ Digital arrest: UPI transfers ⇒

10.

इंडियन आर्मी वर्ष 2024 को 'प्रौद्योगिकी समावेशन वर्ष (Year of Technology Absorption)' के रूप में मना रही है। इसके आलोक में, स्पष्ट कीजिए कि भारत के रक्षा क्षेत्र में प्रौद्योगिकी के समावेशन की आवश्यकता क्यों है। इस पहल में भारत को किन चुनौतियों का सामना करना पड़ सकता है? (उत्तर 150 शब्दों में दीजिए)

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. In light of this, explain why there is a need for technology absorption in the defence sector of India. What challenges can India face in this initiative? (Answer in 150 words) 10

Indian Army celebrates technology due to the multifold utility on the battlefield.

Need for technology in defence sector

- ① Newer theatres of war → Cyber warfare
↳ Space theatre
both requiring technology since conventional strategy don't work
- ② 'Grey zone war': Army chief refers to brinkmanship mode of combatants
- ③ Targeting of Critical Infrastructure
⊙ against Kudankulam nuclear plant
Stuxnet
- ④ Against cartographic aggression:
Proof against Chinese incursions in Doklam, ~~Kang~~ Ladakh etc

⑤ Because technology in India is from different players (eg) → Russian Sukhoi
→ American Apache
→ French Rafale
To integrate all different technologies ⇒ need for greater technology.

⑥ Usage of guerrilla warfare tactics (eg) by Naxals : Landmines in Godchiroli
⇒ need for mine detecting apparatus

⑦ Need for radars & stealth bombers because enemy is getting stronger

(eg) Chinese bomber striker jet

Challenges that may be faced & solutions

① Expensive

Capital account
defence expenditure
to increase

② Skilled technicians

skilling courses for
~~current~~ current servicemen

③ ^{regularly} outdated technology

need for dedicated
technology council

Through cooperation with friendly superpower

(eg) USA, France and with measures such

as IDEx India will be future ready

11.

भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटने हेतु किए गए उपायों पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)
What are the issues faced in the development of trade and industries in the North-Eastern Region (NER) of India? Comment on the measures that have been taken to tackle these issues. (Answer in 250 words)

15

North East Region is historically known to be developmentally backward despite being resource rich

Issues faced in development in NER

- ① Topography : Significant undulations with hills & mountains
→ not suitable for large scale construction
- ② Transportation : Building of roads across circuitous mountains time taking
railways not easily maintainable
- ③ Airport connectivity lacking (eg)
Meghalaya does not have own airport due to no adequate contiguous flat surface

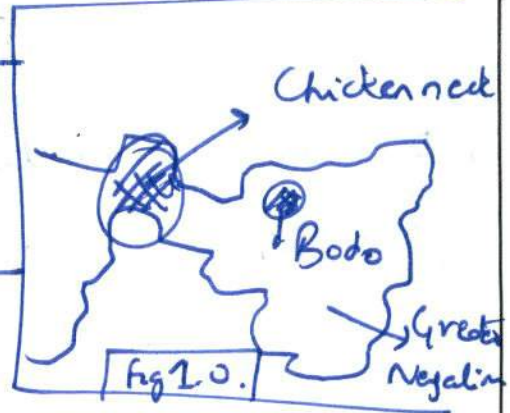
④ Reluctance to invest by business community

- ↳ Autonomous councils wielding significant revenue roles
- ↳ Gov R. Ravi report in Nagaland of "parallel government" structures overrun by gun wielders
- ↳ continuous strife regarding nationalist demands (eg) Gorkhaland, Nagalim, Bodoland etc

⑤ Chicken neck corridor (Siliguri) poor integration with rest of India.

⑥ Demand low : 23% area but less than 8% population

Measures taken by government



① Arresting militant tendencies (eg) AFSPA in select territories

② Improving connectivity to region

(eg) through air UDAN 2.0

through water Bangladesh port using

Chittagong port

- ③ Dedicated Ministry for NE Development
MoDNER
- ④ Infrastructural works ⊕ road construction delegated to BRO (Border Roads Organisation)
- ⑤ Channeling investment by offering tax incentives
- ⑥ Dedicated industries under central schemes
⊕ mega food parks, textile parks
- ⑦ PM-DEVINE: Infrastructure focus. More needs to be done to integrate N-E India culturally and physically (Barbarwah Committee) recommendations, so that the road to developed India goes through North East India

12.

जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

In the era of climate change and growing water scarcity, how can micro-irrigation systems contribute to sustainable agricultural practices in India? (Answer in 250 words) 15

उम्मीदवारों को इस हार्शिए में नही लिखना चाहिए
Candidates must not write on this margin

Micro irrigation systems are the one stop solution to all issues water adequacy related in farming

Era of climate change and water scarcity

- ① Climate change → increased variability of monsoons (eg) Delhi received highest rainfall in August (wrt to last 20 yrs) whereas Maharashtra faces drought
- ② Water Scarcity due to increased heat waves increasing → evaporation from soil
→ transpiration from plant
⇒ increased agricultural drought
- ③ Increased water extraction [263/750 already critical as per GWRB) further reduces water drawing capacity
∴ meteorological drought ⊕ agricultural drought is accentuated by climate change

Micro irrigation & sustainable climate change practices

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

- ① e-agriculture : judicious use of resource
↓
only required amount is delivered with technology integration
- ② Through micro sprinklers etc
↳ continuous supply of water ⇒ reduces water stress in plants
- ③ Through drop irrigation :
retains soil moisture ; prevents desiccatory effects
- ④ Reduced water extraction from underground ⇒ prevents contamination of groundwater (e.g) Uranium
- ⑤ Appropriate usage of fertilizers/pesticides : no run off / soil pollution

- ⑥ Reduces soil erosion effects of flood irrigation also.

Best Practice

In Ambargudi in Kolkata, the greywater recycled at water ~~recycling~~^{purification} center is used to fill groundwater reserves from where control pool is used for all fields using drip irrigation.

Govt measures

- ① PMKSY: Farmers given subsidy for adopting micro irrigation
- ② e-technology integration through agricultural extension services
- ③ ATF: Agricultural Infrastructure Fund for long term loans
- ④ KCC: Loans through cooperative banks & SCARDBs.

Water resoluteness is need of hour in agriculture afflicted by climate change to prevent virtual water export by adopting "one water" policy [Mishra Shah Committee]

13.

भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल दुलाई में इसकी हिस्सेदारी बढ़ाने के लिए कौन-सी रणनीतियां अपनाई जा सकती हैं? (उत्तर 250 शब्दों में दीजिए)

What strategies can be adopted to overcome the issues pertaining to freight transportation in the Indian Railways and increase its share in the domestic freight? (Answer in 250 words) 15

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Freight in India is primarily through road while USA/UK is through rail.

Issues with Freight in Indian Railways



- ① Cross subsidisation
- ② Coal levied extra so that passenger fare can be reduced
- ③ Insufficient rakes & coaches
- ④ Goods movement delayed / uncertain
 - ⊆ roughly 2 day delay in delivery of steel in TN
- ⑤ Time taking measures → slow movement of coaches
- ⑥ loading / offloading / handling → time

taking process ⊕ manpower lacking

- ⑥ Customs delays at docking stations
- ⑦ Preference to road transport to evade taxation
- ⑧ Derailling of trains (e) recent West Bengal derailling incident
- ⑨ Theft/ Lack of security on freight railways

Strategies adopted by GoI

- ① Increasing number of railway lines
- ② Freight dedicated corridors (DFCs)
 - (e) Eastern freight corridor by World Bank
 - Western freight corridor by JICA
- ③ Multimodal transport: with integration for smooth passageway
- ④ Increasing electrification of railways
⇒ movement from broad gauge to narrow gauge ⇒ higher capacity absorption

- ⑤ Newer technology ; LCB rails
being discontinued
- ⑥ Reducing cross subsidisation fares
for railways
- ⑦ Easing customs channels ; separate
GST C-way Bill not required
⇒ on road it is required
- ⑧ Automation at level of handling of
cargo at drop off / pick up points

However as per Montek Singh Ahluwalia
Committee more needs to be done;

- ① Improving customer belief in regularity
⇒ automation
- ② Faster clearance at port / station

These measures may increase
railways freight to 38% by 2030
as per National Railway Plan 2020.

14.

उन कारकों पर चर्चा कीजिए जिन्होंने नवीकरणीय ऊर्जा क्षेत्र में प्रभावशाली प्रगति करने और वैश्विक नवीकरणीय ऊर्जा परिवर्तन में अग्रणी के रूप में स्थापित होने में भारत की सहायता की है। (उत्तर 250 शब्दों में दीजिए)

Discuss the factors that have aided India in making impressive strides in the renewable energy sector and establishing itself as a frontrunner in the global renewable energy transition. (Answer in 250 words)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

15

"The age of fossil fuels is over" announced the president of UNFCCC COP28 at Dubai

Factors aiding India in making strides

① Technology improvements

↳ solar panel technology has improved along with IP of underlying technology becoming available

② Compelling international need:

↳ Under "Panchamrit commitments"

to transition to zero carbon by 2070
50% green renewable energy by 2030
500GW non fossil fuel energy by 2030

③ Prevailing domestic demand

↳ Enlightened citizenry, creating

awareness about transition to
climate positive status

④ Coercive foreign trade regulations

eg) EU's CBAMs require carbon
markets to be well established

⇒ reducing carbon footprint in products of
usage

⑤ Supporting governmental policy

eg) PLI scheme on solar panels

⑥ Increasing investment in green
agenda

⑦ Public private partnerships : Convergence
with NGOs eg) NERZ CSIR's
patent on organic carbon film strips

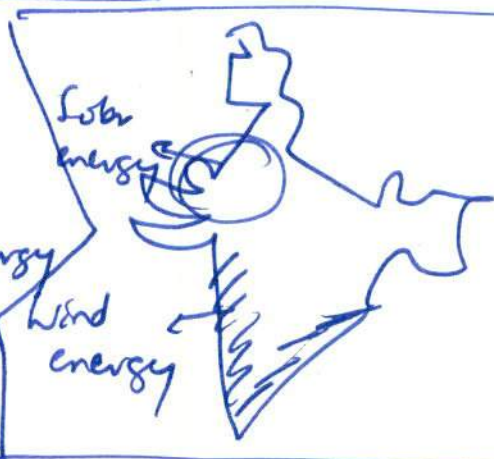
⑧ Geoclimatic availability

→ Tropical region : solar

→ long coastline : wind

: tidal energy

→ govt present : biomass



Where India is a frontrunner

- ① SVGW of solar energy in last 3 years
(eg) Pavagada Solar park
- ② Diversification of renewable energy
(eg) → Green hydrogen energy
→ green ammonia
and CBG using PM-GPBARL etc
- ③ Quick adoption (eg) e-vehicles in public sector.

However, India still lags behind China which added more solar energy potential in 1 year than total combined potential available, highlighting need for consistent push towards "LIFE Mission" to reduce consumption and "recycling" focus to improve sustainability.

15.

उर्वरकों और कीटनाशकों से युक्त कृषि अपवाह पर्यावरण प्रदूषण में किस प्रकार योगदान देता है? कृषि अपवाह के प्रभाव को कम करने के लिए क्या उपाय अपनाए जा सकते हैं? (उत्तर 250 शब्दों में दीजिए)

How does agricultural runoff containing fertilizers and pesticides contribute to environmental pollution? What measures can be taken to mitigate the impact of agricultural runoff? (Answer in 250 words)

15

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Agriculture fertilizers in India

primarily comprise urea (NPK) and mirate of potash which are highly environmentally polluting.

Agric runoff contribute to environmental pollution

① Soil pollution:

↳ Derangement of soil fertility values from 4:2:1 to 7:3:1

↳ Remodelling gradation / texture from fine soil to coarse soil (seen with excessive application on alluvium)

② Water pollution:

↳ Ground water pollution through infiltration / leaching → leading to $\text{NO}_2 / \text{NO}_3$ (Nitrate poisoning)

NO_2^- poisoning may lead to blue baby syndrome

↳ Surface water pollution : Eutrophication

leading to fish kill due to anoxia
due to overgrowth of algal fungi due
to nutrient enrichment

③ Air pollution :

↳ Excessive application of Nitrate / sulphuric fertilisers leads to enhanced air pollution (increasing NO_2) (SO_2)
↓
acid rain possibility

④ Biodiversity threat :

→ Affects local fauna (eg) earthworms
→ allows proliferation of non native species (eg) Acanthia

Measures to mitigate runoff

① Control overall usage/waste :
by reducing easy availability

Dalwai Committee recommends bridging
Urea under NBS, and shifting to
DBT.

② Frequent soil checks (e.g. Soil
Health Card Scheme, one every
years detecting for 9+3 micronutrients
for other factors

③ Technological use

→ drip irrigation admixed with fertilizers
prevents air pollution

→ drones for spraying nutrients

→ mechanisation for higher efficiency

④ Check bunds against water bodies
to prevent run off into them

⑥ Foliar application (neem coated urea / neem urea /
sulphur urea)

⑤ Movement towards organic practice

(e.g) Sikkim

Agri run off needs to be prevented
for reducing water contamination

16.

हिमालयी राज्यों में पर्यटकों की बढ़ती संख्या ने उनके पारिस्थितिकीय समावेशन क्षमता को पार कर लिया है, जिसके कारण बड़े पैमाने पर मानव-जनित आपदाएं उत्पन्न हुई हैं। संधारणीय पर्यटन को बढ़ावा देते हुए ऐसी आपदाओं को रोकने के लिए क्या उपाय किए जा सकते हैं? प्रासंगिक उदाहरणों के साथ चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

The growing influx of tourists in Himalayan states has breached their ecological carrying capacity, leading to significant man-made disasters. What measures can be implemented to prevent such disasters while promoting sustainable tourism? Discuss with relevant examples. (Answer in 250 words)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

15

With the Joshimath tragedy and frequent landslides in Himachal Pradesh, there's a need felt for greater focus on carrying capacity

Growing influx breaching capacity → disasters

① High tourist footfall @ Shimla/Mandi

→ Construction activities expanding onto river front ⇒ river waters wash away during swelt flow

② Increased demand on water resources

↳ extraction from groundwater

⇒ subsidence @ Joshimath

③ Higher construction activities near roads

↳ deforestation → landslides

(16) Disturbing pristine ecology through rock climbing / trekking etc \Rightarrow rock fall (Dehradun)

Measures to be implemented to prevent such disasters

(1) Limiting tourism in off season

\rightarrow allowing local ecology to regenerate

(2) Restricting total number of tourists in one place

(a) Venice, Italy does not take more than carrying capacity.

(3) Strict control over construction activities:

(a) Private reconstruction to be assented by local municipal authority

(b) Watch over cropping of homesteads etc

⑤. [M.C. Mishra Committee] for Jashimeth

→ limiting number of houses built on hillsides

→ deforestation to have prior consent of forest department

→ hydroelectric projects/ groundwater harvesting to be regulated

⑥ Environmental Impact Assessment to ensure no breach of norms

However, govt's recent measures exempting them from EIA are concerning. Environment must be allowed to recover, lest Jashimeth like incidents continue to occur.

17.

सुपरकंडक्टर्स विज्ञान एवं प्रौद्योगिकी के विभिन्न क्षेत्रों में नवाचार को किस प्रकार बढ़ावा देते हैं? उदाहरण सहित स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words)

15

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Superconductors are those devices which show zero resistance at room temperature

☞ Gallium Tungsten Vanadium mix was shown to be ^{super}conductive by JISC Borgdore

Superconductors & innovation

① Giant magnetoresistance : branch of superconductivity used in harddisks.

② usage in medical technology :
↳ for magnetic resonance imaging

③ in rocket technology :
- for better take off with lesser fuel

4) In e-vehicles :

Allows slower drain of battery \Rightarrow
longevity

5) in super computing :

(c) MARATHI mission : optimal
functioning under superconductance

6) in space technology :

superconductivity in satellites allows lesser
energy consumption for relay transmission

future prospects

1) Communication technology : To reduce
attrition

2) In Electric transmission : To reduce
AT&C losses

3) In medical technology : for higher
grade imaging services than MRI.

उम्मीदवारों को
इस हार्जिए में
नहीं लिखना
चाहिए
Candidates
must not
write on
this margin

VisionIAS

18.

यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तार वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

While India has laws covering almost all types of intellectual property rights, numerous enforcement, regulatory and administrative challenges hamper the commercialisation of IPRs in India. Elaborate. (Answer in 250 words)

15

उम्मीदवारों को इस दृष्टि में नहीं लिखना चाहिए
Candidates must not write on this margin

IP Rights rule the quinary sector of market, generating significant income to its holders

India has laws covering types of IPR

- ① Patent Act : (1947) for patents in industrial products of utility
- ② Copyright laws : for rights over artistic works granting 20 years rights for musicians, lifetime for authors/publishers
- ③ Geographic Indications Act (1999) : Giving location specific rights to products.
- ④ Trademark : Over specific brands & names e.g. Nike ✓ "Just do it"

Challenges hampering commercialisation

(A) Enforcement :

↳ frequent breaks / violations of patent protections

⊕ selling Puma as Pumba.

⇒ faith in IPR lost

↳ No novelty in products ~~to~~
⇒ reverse engineered products.

↳ Difficulty in enforcement due to
limited action by police

⊕ fake Raymond T-shirts / Tag Heuer watches

(B) Regulatory :

↳ 'evergreening practice' of foreign
patents with slight modifications

↳ multiple levels of authorisation
while claiming IP rights

↳ compliance costs high

↳ Delay in granting IPR

↳ Filing of IPR on digital portal
faced with issues.

② Administrative challenges :

↳ Multiple relaxations which are legal

⑨ Delhi ^{Uni} Xerox case ⇒ allowing
breach of copyright for personal use

↳ Compulsory Patenting provision makes

people wary of registering patent in
India.

Despite low GERD (~2%), compared
to Japan at 57. and USA at 157, India
produces many research articles every year
but final quality challenges prevent
actual conversion to commercial feasibility.

India must invest in GERD while
enhancing regulatory potential in order to
grow IPR in India

19.

एकीकृत थियेटर कमान का निर्माण करने में सामना की जाने वाली चुनौतियों को ध्यान में रखते हुए, परीक्षण कीजिए कि कमानों का थिएटराइजेशन किस प्रकार तीनों सेनाओं के बीच जनशक्ति और संसाधनों के बेहतर एकीकरण और युक्तिकरण को बढ़ावा दे सकता है। (उत्तर 250 शब्दों में दीजिए)

Keeping in view the challenges in creating integrated theatre commands, examine how the theaterisation of commands can lead to greater integration and rationalisation of manpower and resources among the three services. (Answer in 250 words)

15

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Challenges in creating ITCs

① Rationalisation of resources

↳ drawing personnel from which agency

② Structuring of ITCs

↳ command to be given to which of 3 services

③ Silo mentality of 3 services

↳ ineffective integration

④. Positioning of ITCs for maximum effectivity ⇒ nearer whose command centre

Now threatensation leads to greater integration

① Clearly delineated roles of each

unit:

② Battalion sized units for quick mobility

③ Specialised for $\left\{ \begin{array}{l} \text{Threat} \\ \text{Task} \\ \text{Terrain} \end{array} \right.$

④ Command structure is Top down creating hierarchy and clear path of command.

⑤ Needed by Col-General level officer but representation for other officers at all 3 levels.

Rationalisation of manpower ^{resources} through

① No duplicity in procurement
Need based only

② Thinning of surplus to requirement
reserves \Rightarrow Lesser burden on exchequer.

- ③ Integration of technology for field level utility
- eg) MH-Romeo Naval choppers
communication system integrated
with Apache of Army
- ④ Common recruitment measures for
newer requirements
- ⑤ Selection based on merit for existing
pool of candidates

As per Kargil Review Committee,
to be truly integrated these ITCs
must have uniform terms of service
Shelkar committee also focussed on slimming
side of ITCs for quick movement

20.

सीमावर्ती गांवों को न केवल भौगोलिक दृष्टि से बल्कि सुविधाओं के मामले में भी प्रथम गांव मानना, सीमा सुरक्षा बढ़ाने की एक प्रमुख रणनीति हो सकती है। विवेचना कीजिए। साथ ही, इस संबंध में सरकार द्वारा किए जा रहे उपायों पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए)

Treating border villages as first villages not just geographically but also in terms of facilities can be a key strategy for enhancing border security. Discuss. Also, highlight the measures being taken by the government in this regard. (Answer in 250 words)

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The Win-win Meats of Minds (WMM) approach should overpower the BAM (force) approach

Treating border villages as first villages for facilities

- ① Allows integration into larger entity of India
- ② Solves issue of village desertion frequently seen in Ladakh / Kashmir
- ③ Allows development led by decentralisation
- ④ Potential for ~~border~~ tourism to thrive ⇒ self generating economy
- ⑤ Makes claims on certain regions more robust eg Arunachal Pradesh border villages Tenay district (Chabang Policy)

Facilities that need building

- ① Road transport
- ② Water availability
- ③ Communication access
- ④ Health/ Education needs to be fulfilled

Measures taken by Govt

- ① Vibrant Villages Programme
- ② Village Defence Councils
@ Kashmir
- ③ Border Roads Organisation →
Construction of roads
- ④ Op Sakhavane
- ⑤ Op Nai Manzil for upskilling

⑥ Improved communication through
New Udaan scheme

⑦ Financial inclusion : 'Five star
village' scheme by India Post
Banking system

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