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GENERAL STUDIES (TEST CODE : 1751)

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|-------------------|-----------------|---------------------|------------|
| Name of Candidate | MELVYN VARGHESE | | |
| Medium Eng./Hindi | ENG | Registration Number | 141971 |
| Center | ONLINE | Date | 30/11/2021 |

| INDEX TABLE | | |
|-------------|---------------|----------------|
| Q. No. | Maximum Marks | Marks Obtained |
| 1 | 10 | |
| 2 | 10 | |
| 3 | 10 | |
| 4 | 10 | |
| 5 | 10 | |
| 6 | 10 | |
| 7 | 10 | |
| 8 | 10 | |
| 9 | 10 | |
| 10 | 10 | |
| 11 | 15 | |
| 12 | 15 | |
| 13 | 15 | |
| 14 | 15 | |
| 15 | 15 | |
| 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 (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।

16-B, 2nd Floor, Above National Trust Building, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp Punjab & Sindh Bank), Dr. Mukherjee Nagar
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. Reformed multilateralism is the need of the hour. Analyse with reference to India's position on reforming the United Nations. (150 words) 10

बेहतर बहुपक्षीयता समय की माँग है। संयुक्त राष्ट्र में सुधार पर भारत के रुख के संदर्भ में विश्लेषण कीजिए।

Multilateralism refers to cooperation between all the nations of the world.

Need for reform -

- Lack of voice for ~~developed~~ ^{developing} nations.
- Over representation of the West
eg: G7 have 40% of quota in IMF.
- Loss of faith in multilateralism.
eg: Recent criticism of WHO.
- Rise of Transnational issue.
eg: Climate change, Pandemics etc.

India's position on reform

of UN →

- India feels UN is dominated by P5 (in Security Council) & their veto power

→ India suggests philosophy of NORMS ('New order for reformed Multilateralism'), as president of UN Security Council.

→ Need for 'rules based international order' is crucial.
eg: Role of UNCLOS in solving disputes.

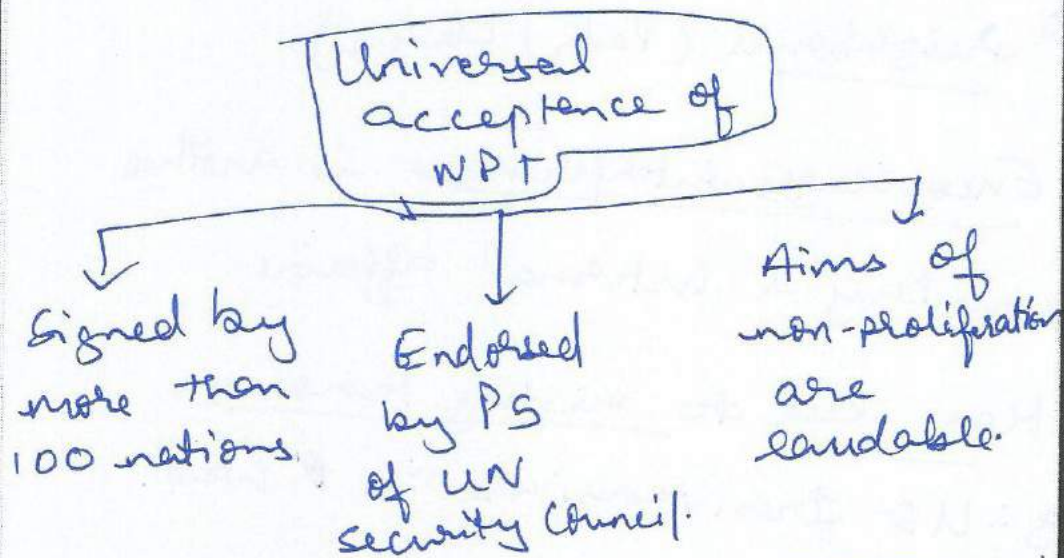
→ Breakup of world into regional blocs, can fuel tensions
eg: Rise of many regional trade agreements → MERCOSUR, Asean, SAFTA, (at cost of WTO)

Thus reform in multilateralism can counter hyper nationalism.

2. Although the treaty on Nuclear Non-Proliferation (NPT) has acquired universal acceptance, it remains deeply flawed. Analyse in the context of India's position on the issues involved. (150 words) 10

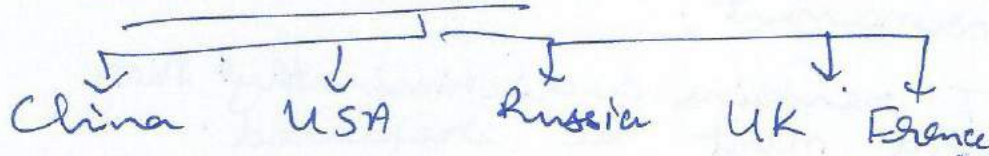
यद्यपि परमाणु अप्रसार संधि (NPT) ने सार्वभौमिक स्वीकृति प्राप्त कर ली है, तथापि यह अभी भी अत्यधिक त्रुटिपूर्ण बनी हुई है। इसमें शामिल मुद्दों पर भारत के रुख के संदर्भ में विश्लेषण कीजिए।

The NPT, evolved in 1960, aims to reduce proliferation of nuclear weapons, but divides world into Nuclear haves & have Nots



Flaws in NPT (India's position) -

→ Only recognises ^{Few} countries as nuclear weapon states



- An insult to principle of strategic autonomy.
 - Remains highly discriminatory.
 - Doesn't appreciate local security situation of each country
eg: India faces 2 hostile neighbours (Pak / China).
 - Encourages interference → in another country's internal affairs
 - Has led to rising tensions.
eg: US-Iran tensions in West Asia
 - India instead advocates for verifiable, non discriminatory non proliferation via Conference of Disarmament.
- NPT remains a discriminatory treaty and must be repealed.

3. Critically analyse the significance of membership of the Shanghai Cooperation Organization (SCO) for India. (150 words) 10

भारत के लिए शंघाई सहयोग संगठन (SCO) की सदस्यता के महत्व का समालोचनात्मक विश्लेषण कीजिए।

SCO is a Eurasian security organisation, acting as a leverage for India in Central Asia.

Benefits of Joining SCO.

- Helps to counter evils of Terrorism, Extremism & Separatism
- Good security cooperation via Regional Anti-Terror Structure (RATS)
- Provides platform for dialogue with Pak & China.
- Promotes synergy with INSTC & Connect Central Asia Policy (2012),

Criticism -

- Dilemma for India - in balancing simultaneous membership in Quadrilateral, which

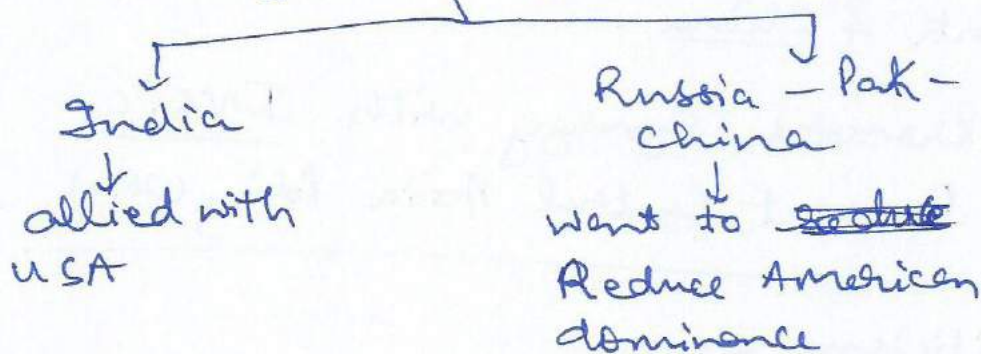
is viewed with suspicion by
China & Russia.

- Failure of security cooperation → which
hasn't been able to reduce terror
in Kashmir.

- Dominance of China → pushing its
Silk Road Initiative

- India becomes marginalised + especially
on Afghanistan issues
(Russia & China cooperate with Taliban)

→ Strategic divergence in goals



SCO, helps diversify our
geopolitical horizons, but fails to
live upto expectations.

4. Highlighting the existing gaps in the South Asian energy cooperation, bring out the steps taken by India to promote energy cooperation with its neighbours. (150 words) 10

दक्षिण एशियाई ऊर्जा सहयोग में विद्यमान अंतरालों पर प्रकाश डालते हुए, अपने पड़ोसियों के साथ ऊर्जा सहयोग को बढ़ावा देने के लिए भारत द्वारा उठाए गए कदमों को स्पष्ट कीजिए।

South Asian energy cooperation, exists in a fragmented state, hindering its socio-economic development.

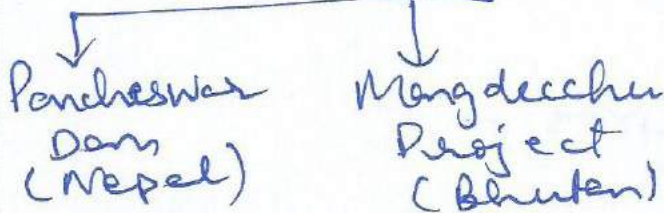
Gaps that exists →

- Non-participation of Pakistan & China
- Lack of concrete institutional regulator (to supervise & fix tariffs.)
- Regular shifting of goal posts by India (keeps changing rules).
- Smaller nations (Bhutan etc) feel India is being unfair.
- Rise of China → making huge investments in dams & nuclear energy in South Asia.

→ Fragmented nature of rules.

Steps taken by India

→ Signing of several hydroelectric project deals



→ Announcement of new rules by India.

→ New promises to buy electricity at favorable rates for neighbours.

→ New MOU's have been signed.

→ Expediting of several pending projects

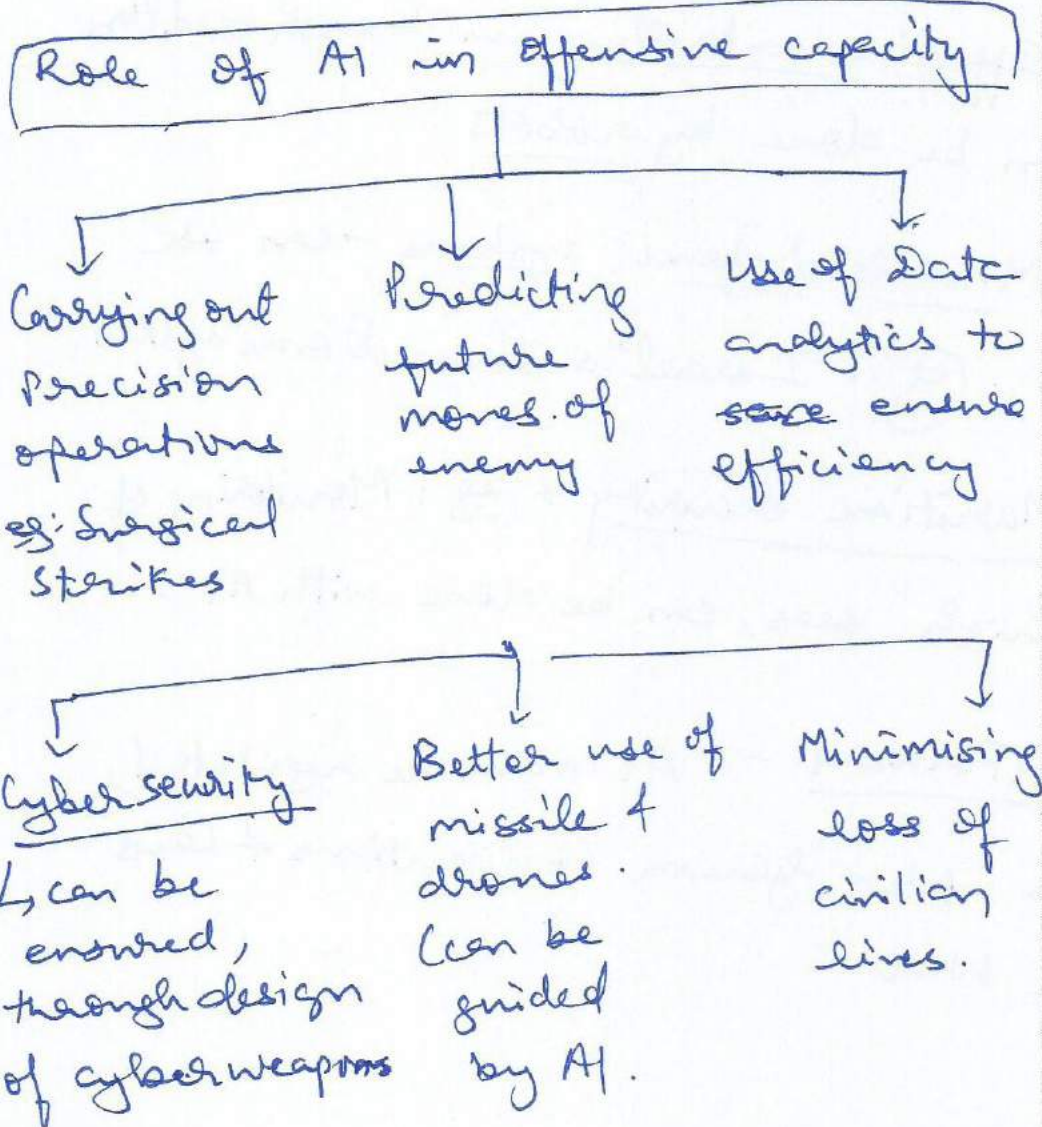
Way Forward - A supra-national regulator to be set up to assure fairness & integrated approach -

5. In what possible ways can Artificial Intelligence (AI) aid in augmenting offensive and defensive capacity of the military? Explain with examples.

(150 words) 10

किन संभव तरीकों से सेना की आक्रामक और रक्षात्मक क्षमता को बढ़ाने में कृत्रिम बुद्धिमत्ता (AI) सहायता कर सकती है? सोदाहरण स्पष्ट कीजिए।

AI is the stimulation of human thinking processes by machines. It has many military applications.



Role of AI in augmenting defensive capacity →

- Protection of critical infrastructure (nuclear plants, hospitals) etc from cyber attacks.
- Effective patrolling in harsh conditions can be done by robots.
- Missile Defence systems → can use AI. (eg): Israel's Iron Dome System
- Maritime Security → eg: Monitoring of high seas, can be done with AI.

Way Forward - AI must be regulated, as per Geneva Conventions & Laws of War.

6. A greater understanding and comprehensive national power are required for India to respond more effectively to the challenge of hybrid warfare. Discuss. (150 words) 10

हाइब्रिड युद्ध की चुनौतियों से अधिक प्रभावी रीति से निपटने हेतु भारत के लिए इन चुनौतियों की गहन समझ और व्यापक राष्ट्रीय शक्ति की आवश्यकता है। चर्चा कीजिए।

Hybrid warfare is the combination of traditional warfare with new modes like cyber war, space war & low intensity asymmetric warfare.

Threats faced by India:

- ① Lone wolf attacks
- ② Use of drones
eg: Attack on IAF base in Jammu.
- ③ Attack on critical infrastructure
eg: Attack on Mumbai power system by Chinese Hackers (ShadowPad virus)
- ④ Space warfare: Deployment of space based laser weapons by China.
- ⑤ Blurring of differences between civilian & military targets.

Suggestions -

- ① Have a Doctrine on hybrid warfare.
- ② Set up separate commands on 'space', 'AI' & Cyber warfare.
- ③ N. Chandrasekharan task force suggests

←

Defence AI
Council

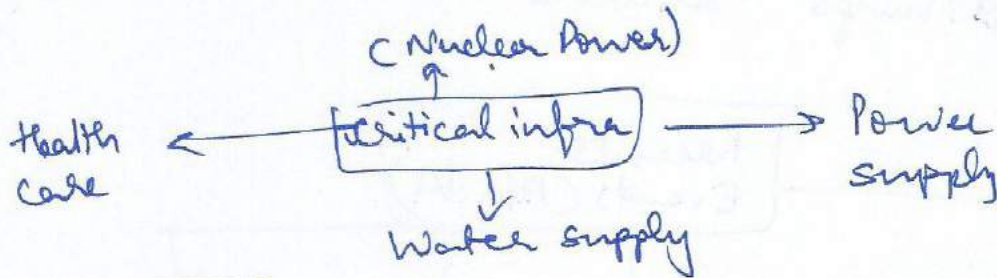
→

Embedding AI
in defence strategy
- ④ Commission studies on hybrid warfare by military think tanks.
- ⑤ Ensure first mover advantage → by taking early steps on hybrid warfare.

The future of warfare is to be low intensity, with asymmetric threats, which we must prepare for.

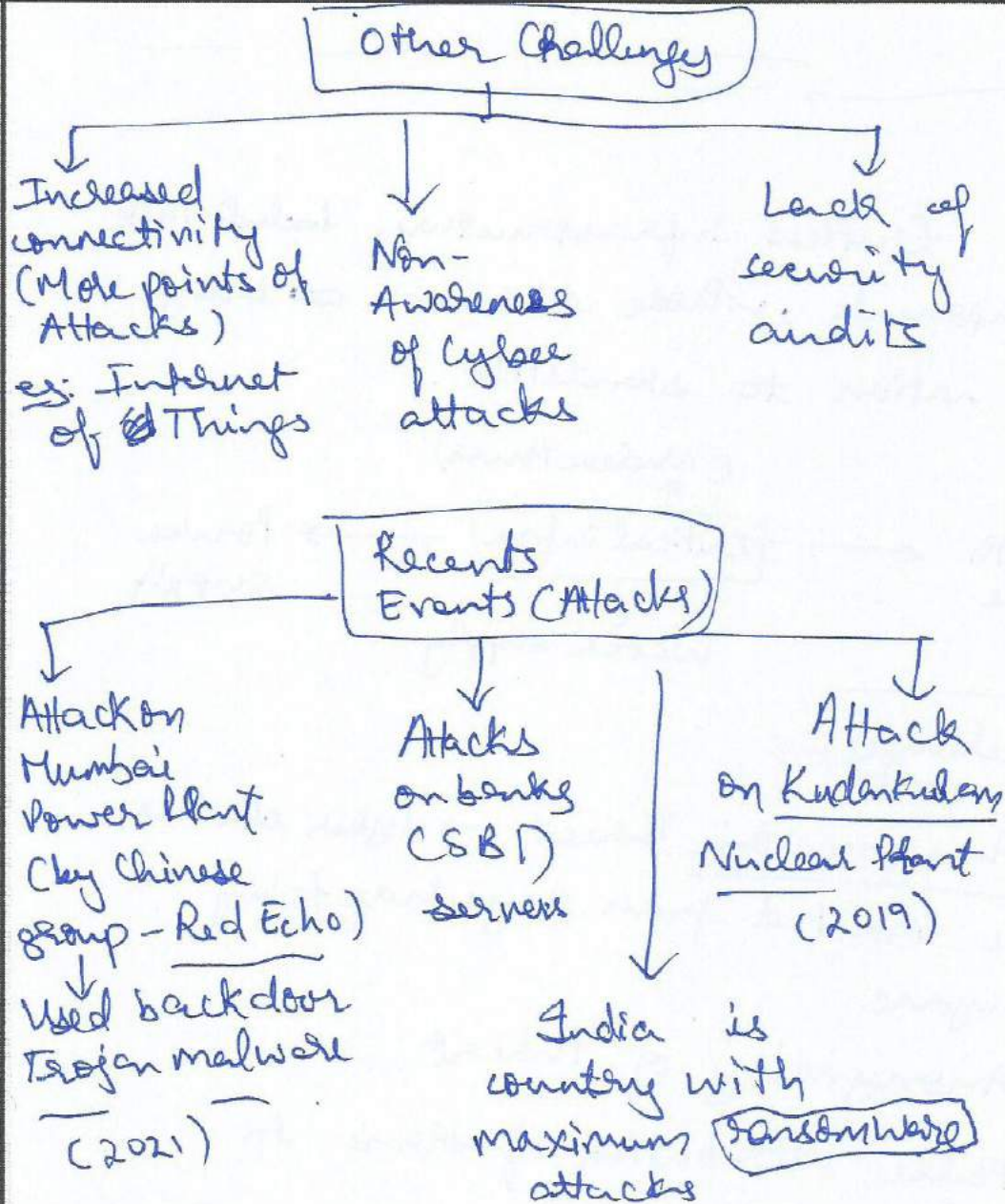
7. Securing India's critical infrastructure from cyber threats remains a key challenge for India. Discuss in the light of recent events. (150 words) 10
- भारत के महत्वपूर्ण बुनियादी ढांचे (क्रिटिकल इन्फ्रास्ट्रक्चर) को साइबर खतरों से सुरक्षित रखना भारत के लिए एक मुख्य चुनौती बनी हुई है। हाल की घटनाओं के आलोक में चर्चा कीजिए।

Critical infrastructure include those components, whose absence ~~can~~ brings a nation to standstill.



Challenges →

- ① Asymmetric Threat → Cyber attack can be mounted from anywhere & by anyone
- ② Anonymity of threat
- ③ False attribution of blame to other states.
- ④ Blurred lines between civilian & military infrastructure
- ⑤ Most civilian infrastructure lacks any cyber security.

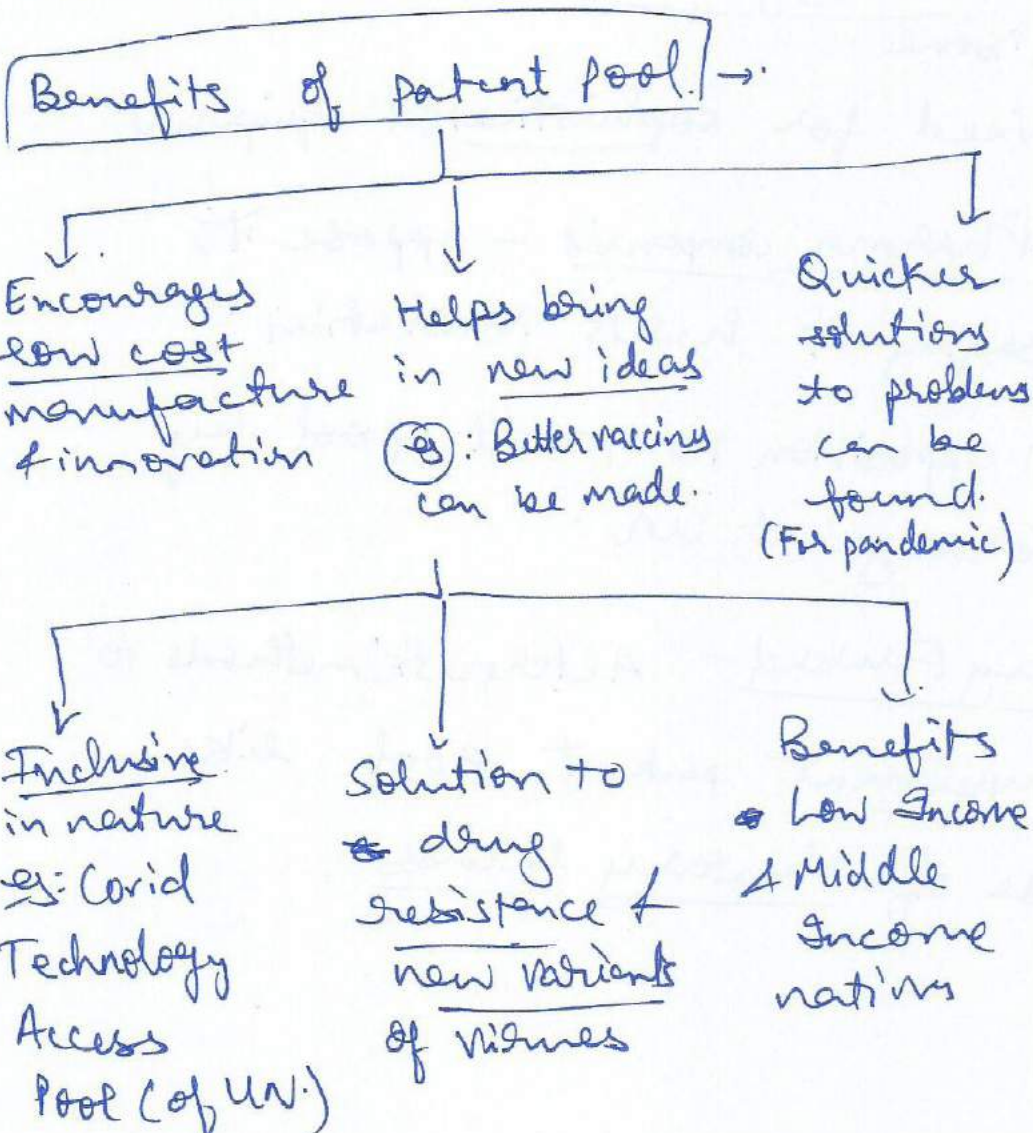


Way Forward - Ensure regular security audits & accede to Budapest Convention (on cyber security).

8. When it comes to promoting competition and innovation, patent pools are a double-edged sword. Discuss. (150 words) 10

जब प्रतिस्पर्धा और नवाचार को बढ़ावा देने की बात आती है, तब पेटेंट पूल इस संदर्भ में दोधारी तलवार हैं। चर्चा कीजिए।

Patent pools are the pooling of knowledge in form of patents by countries / corporations / WHO's :
Recently Costa Rica was 1st to start it.



Challenges →

- ① Lack of incentive for original creators.
- ② Countries lack raw materials to use patents -
- ③ Technology transfer remains an issue -
- ④ Need for sophisticated equipment
- ⑤ Pharma companies - oppose it, saying it hurts innovations.
- eg: Opposition to patent pool by Norway at UN.

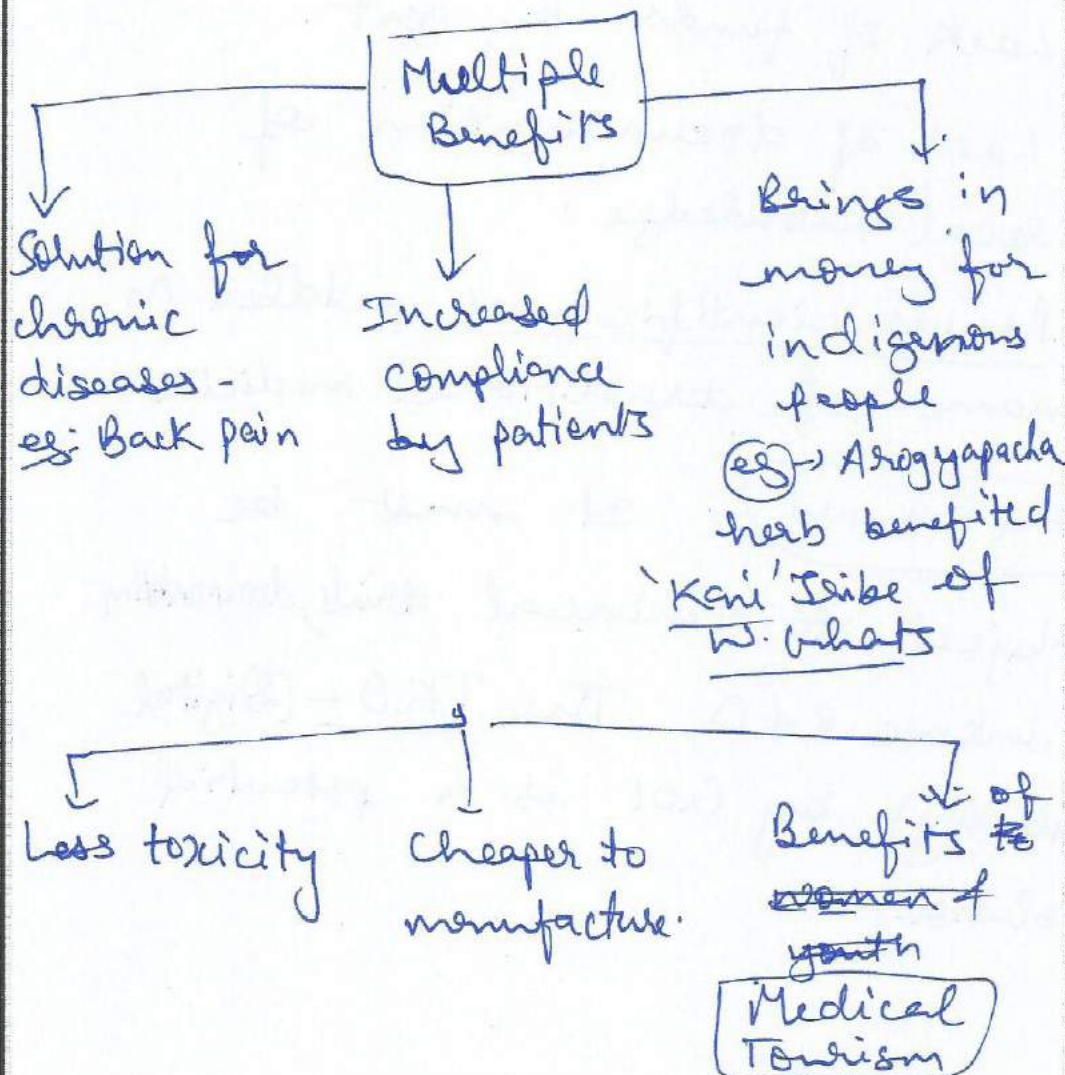
Way Forward - Alternate methods to supplement patent pool like use of voluntary licenses.

9. In spite of multiple benefits and growing acceptance of traditional medicine, it faces several hurdles in adoption at a large scale. Discuss.

(150 words) 10

पारंपरिक चिकित्सा के विविध लाभों और बढ़ती हुई स्वीकृति के बावजूद, यह बड़े पैमाने पर अपने अंगीकरण में अनेक बाधाओं का सामना कर रही है। चर्चा कीजिए।

Traditional medicine includes Ayurveda, Unani, Siddha, Sowa Rigpa and several indigenous systems.



Hurdles in adoption → (at scale)

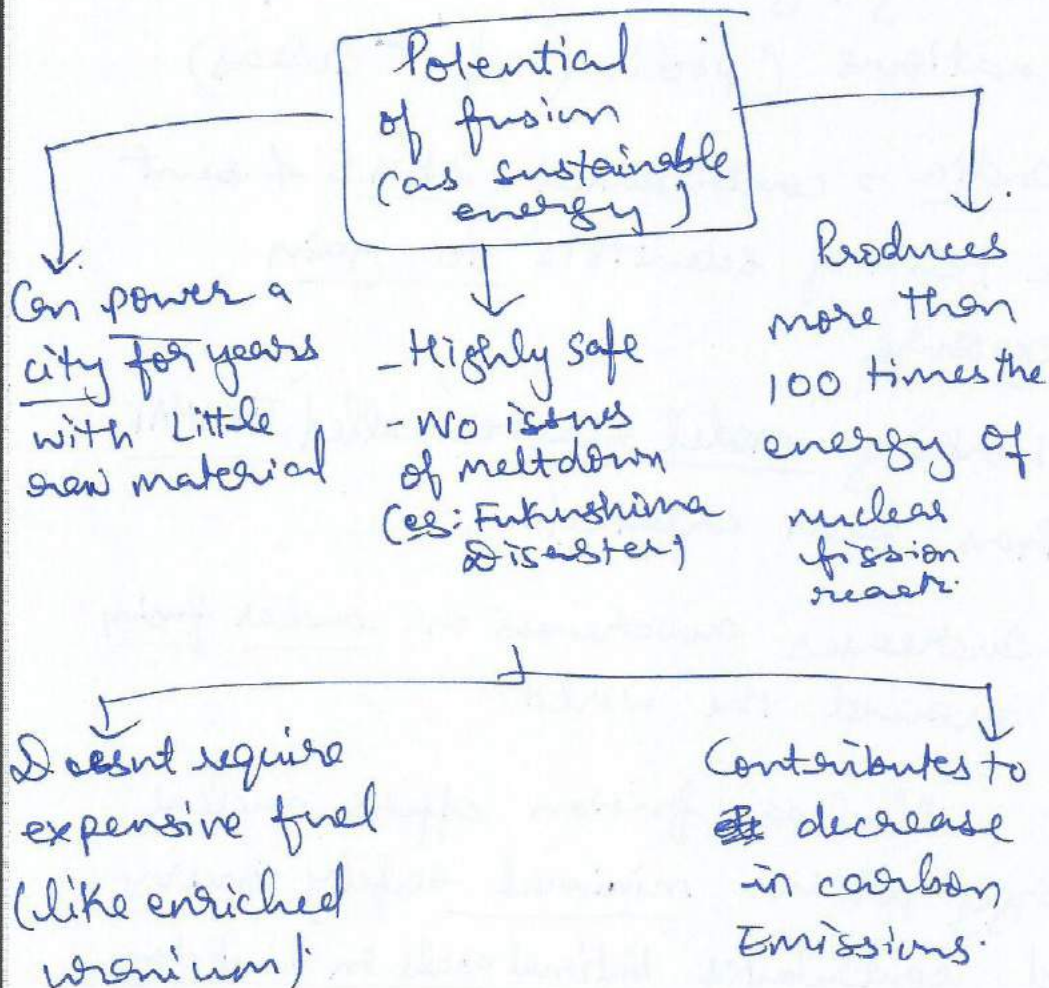
- ① Lack of scientific validation
(clinical trials not done)
- ② Issues of patentability.
- ③ Opposition by indigenous & instances
of biopiracy.
- ④ Lack of funds by govt.
- ⑤ Lack of documentation of
local knowledge.
- ⑥ Pseudo scientific cures peddled in
name of traditional medicine.

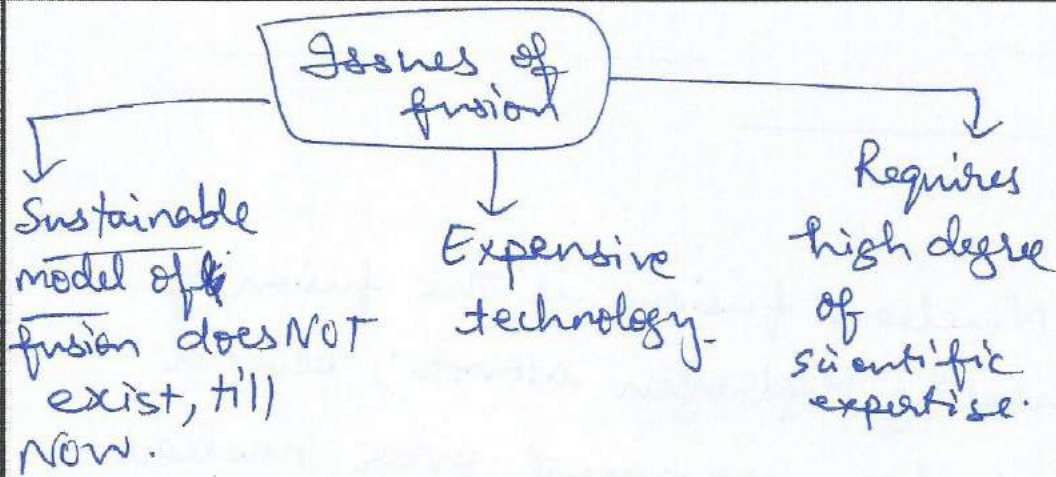
Way Forward → It must be
subject to clinical trials, documentation
& intense R&D. The TKDL (Digital
library), by Govt is a potential
solution.

10. Discuss the potential of nuclear fusion in providing sustainable energy. Analyse the role played by the International Thermonuclear Experimental Reactor in achieving this potential. (150 words) 10

संधारणीय ऊर्जा प्रदान करने में परमाणु संलयन की क्षमता की विवेचना कीजिए। इस क्षमता को साकार करने में अंतर्राष्ट्रीय ताप-नाभिकीय प्रायोगिक रिएक्टर द्वारा निभाई गई भूमिका का विश्लेषण कीजिए।

Nuclear fusion is the fusion of mostly Hydrogen atoms; being a marked improvement over nuclear fission, in terms of energy, safety etc.





Role played by ITER on fusion

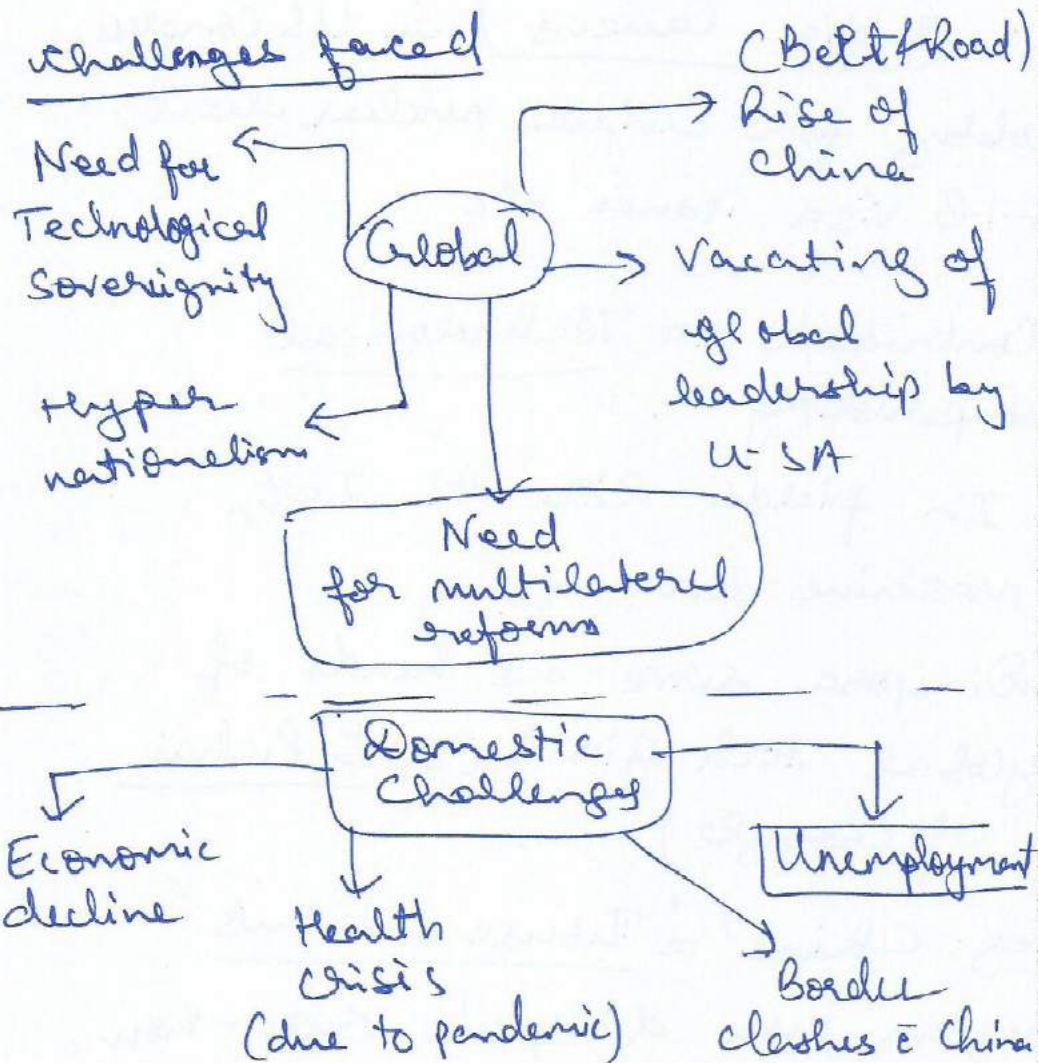
- Coming together of several nations (pooling of ideas)
- India → contributed 2 bn \$ & sent a team of scientists to gain experience
- Working 'model reactor' called 'TOKAMAK' has been created.
- Increases awareness on nuclear fusion around the world.

Nuclear fusion offers nuclear energy with minimal safety concerns and contributes National goals on climate change.

11. The role of the diaspora as a strategic asset for India has never been so acutely felt as in the present scenario of global and domestic challenges. Discuss with examples. (250 words) 15

भारत के लिए रणनीतिक परिसंपत्ति के रूप में डायस्पोरा (प्रवासी) की भूमिका को कभी भी इतनी तीव्रता से महसूस नहीं किया गया जितना वैश्विक और घरेलू चुनौतियों के वर्तमान परिदृश्य में किया जा रहा है। सोदाहरण चर्चा कीजिए।

Diaspora refers to persons of Indian origin (PIO) & NRI's. They act as carriers of Indian culture & amplify its soft power.



Diaspora's role as strategic asset →

① Magnify India's soft power

- ↳ via Bollywood
- ↳ carriers of Yoga
- ↳ soap opera.

② Lobby for Indian interests

eg: India Caucus in US Congress
lobby for civilian nuclear deal,
H-1-B visa issues etc

③ Contribute to Technological

- ↳ superiority
- ↳ In fields like AI, Iot,
machine learning
- ↳ Diaspora serve as heads of
global tech giants (eg: S. Pichai
of Google)
- ↳ eg: China's 'Thousand Talents'
program uses diaspora's know-how

(d) Occupy positions of political power.

↳ eg 1: UK has 3 Indian-origin Ministers

↳ eg 2: Former PM of Mauritius is of Indian origin.

(e) Act as sources of investment into Indian economy.

↳ eg: In education sector
↳ R & D field.

(f) Contribute to governance

eg: RBI governor (ex) was an NRI

Thus diaspora represent a force multiplier of Indian interests in multipolar world

12. Elaborating the new strategic possibilities opening up in the Gulf region, examine the challenges that need to be addressed to recalibrate India's ties with the region. (250 words) 15

खाड़ी क्षेत्र में उदित हो रही नई रणनीतिक संभावनाओं का सविस्तार वर्णन करते हुए, उन चुनौतियों का परीक्षण कीजिए, जिन्हें इस क्षेत्र के साथ भारत के संबंधों को पुनर्निर्धारित करने के लिए दूर करने की आवश्यकता है।

Gulf region represents 'extended neighbourhood' of India, & is important for energy security.

New strategic Possibilities →

(a) Eroding of USA's security
→ blanket →

↳ Ensures shift to multipolarity
↳ India can fill vacuum as 'Net security provider'.

(b) Warming of relations with
→ Israel

↳ as per Abraham Accords (UAE-Israel)
↳ ∴ India need not carry out a balancing act between the two

(c) Need to secure sea lines
→ of communication (SLOC)
↳ Works well with India's
focus on Indian Ocean.

(d) → New deposits of gas discovered
in Gulf region.

(e) Falling of oil prices.

Challenges needed to be resolved

for better ties →

→ Rise of new powers in Gulf

Turkey China Russia

May hurt India's strategic
interests

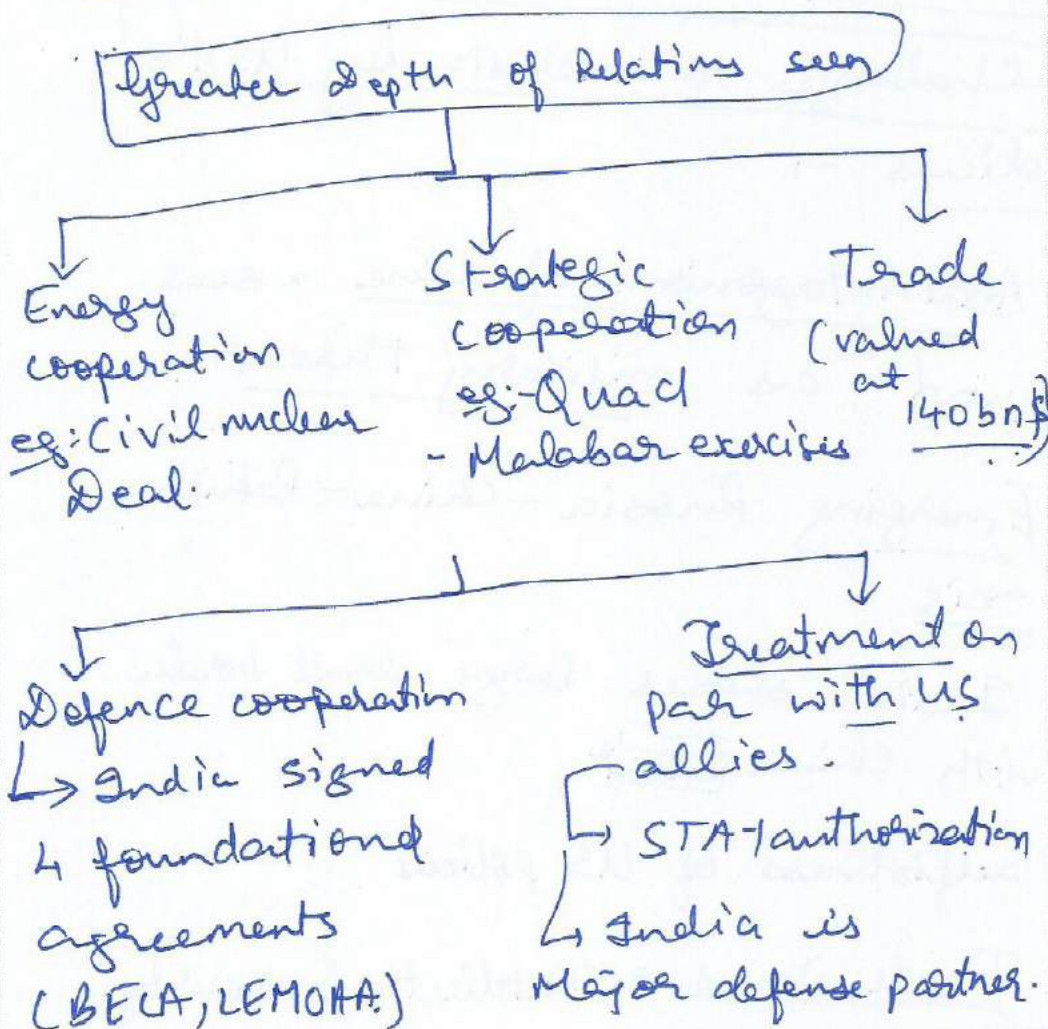
→ Poor execution of India projects
(caused Iran to remove India
from Farzad-B gas project).

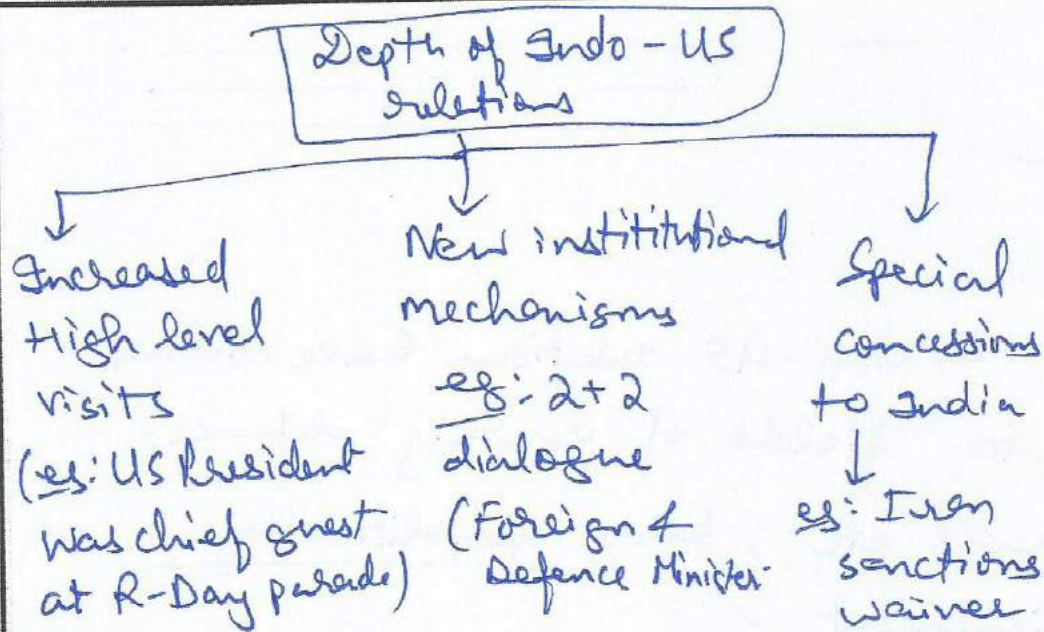
- Loss of jobs for Indian diaspora (due to recession.)
 - Pakistan's close ties with Gulf nations (may be hindrance for India).
 - Depleted economic power of India (can't provide security)
 - Poor implementation of Look West policy.
 - Lack of institutional dialogue with Gulf nations.
(like India - Asean Summit)
 - Interference by China
(25 yr cooperation with Iran).
- ~~It is~~ We must leverage historical links, along with speedy project execution & partnerships with like minded countries for recalibration.

13. While India-US relations have acquired greater depth in the last two decades, the policies of Washington even in this era continue to pose challenges to New Delhi's strategic interests. Discuss with adequate examples. (250 words) 15

जहाँ विगत दो दशकों में भारत-संयुक्त राज्य अमेरिका संबंधों में और अधिक गहराई आई है, वहीं इस दौर में भी वाशिंगटन की नीतियाँ नई दिल्ली के सामरिक हितों के समक्ष चुनौतियाँ प्रस्तुत करती रहती हैं। पर्याप्त उदाहरणों के साथ चर्चा कीजिए।

India-US relations have diversified into fields of energy, defence, trade etc, being geopolitically significant.





Challenges to interests by USA's

Policies →

- Acute Antagonism of China → see Quad as military threat
- Emerging Russia - China - Pakistan axis
- India shares large land border with China ~~(cont)~~
- Selfishness of US policies
- Trade issues → Intellectual property

investigations initiated by
USA against India (Sec 301)-
(USTR).

→ Narrowing of India's geopolitical
Horizons

(as India gets branded as
US ally).

→ Loss of strategic autonomy

(eg): In case of Taliban takeover,
(in Afghanistan), Indian actions of
evacuation, were solely guided
by US withdrawal.

→ Continuing disputes with USA
at WTO.

eg: Solar technology issue.

Way Forward → India must diversify
its relations with other balancing
powers (Russia, Turkey etc), & carrying
out self strengthening to ensure
strategic autonomy.

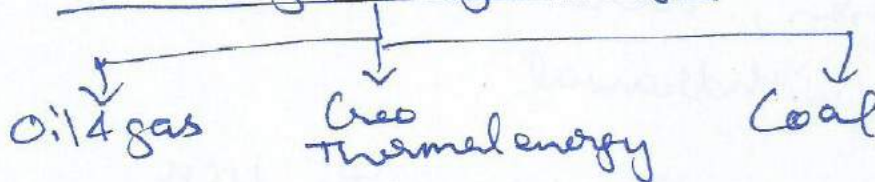
14. Why does India need an Arctic policy? In this context, also highlight the key aspects of the recently released draft of India's Arctic Policy Roadmap For Sustainable Engagement. (250 words) 15

भारत को आर्कटिक नीति की आवश्यकता क्यों है? इस संदर्भ में, हाल ही में जारी संधारणीय संलग्नता के लिए भारत की आर्कटिक नीति रोडमैप के प्रारूप के प्रमुख पहलुओं पर भी प्रकाश डालिए।

Arctic as a region represents new geo-political and geo-economic prospects for India, in terms of energy, connectivity etc.

Need for Arctic Policy →

→ Ensuring Energy Security



→ Presence of rare earths & other strategic minerals

→ New ~~ESS~~ Connectivity avenues opening up to Europe:

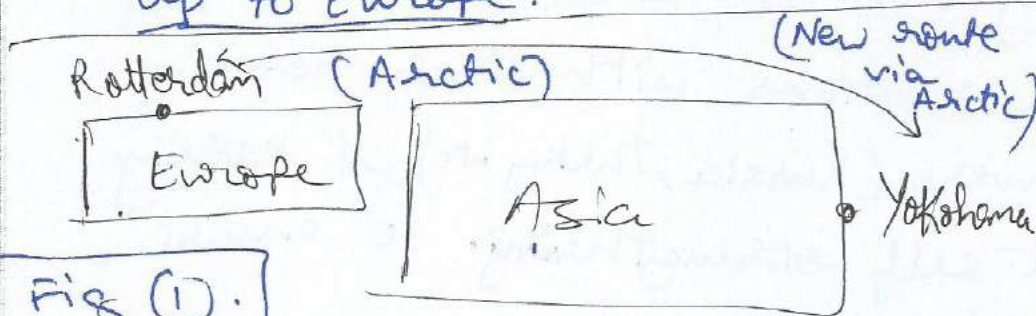


Fig (1).

- Need for first mover advantage
- Climate change - Melting of Arctic ice is a main driver of sea level rise
- Research & Developments opportunities for Indian scientists.
- Aggressive Chinese posturing (via Silk Road) can extend to Arctic
- Indian investments in Arctic
eg: ONGC - Rosneft project in Sakhalin Island

Key Feature of Arctic Policy!

(roadmap)

- ~~Ind~~ Peaceful intentions of India are articulated.
- Need for international cooperation

on Arctic

→ Stress on role for UN, &
rules based international order.

→ Working with Arctic Council.

→ Respect for national boundaries
& sovereignty.

→ Arctic as a 'Global Commons'

India must act quickly
to capitalise on opportunities in
Arctic.

15. In defence technology, India has 'Indianised' well, 'Indigenized' satisfactorily but is yet nowhere near becoming "Indian" in terms of being self-reliant. Comment. (250 words) 15

रक्षा प्रौद्योगिकी के क्षेत्र में, भारत ने अच्छी तरह से 'भारतीयकरण' और संतोषजनक रूप से 'स्वदेशीकरण' किया है, लेकिन आत्मनिर्भर होने के संदर्भ में अभी तक "भारतीय" बनने के आसपास भी नहीं है। टिप्पणी कीजिए।

Defence technology is a core component of national security, hence the need for self sufficiency.

Performance of India in defence technology →

① Successful 'Indianising' is seen

Several projects (guns, missiles, clothing) are now manufactured in India

eg: Ordnance Factory Board make small arms, clothing etc

→ Joint ventures have been successful


eg: Brahmos Missile (Indo-Russian)

Venture) has taken off well,
with 3 variants.

→ Defence exports have rise
sharply in last 5 yrs
(to around 5 bn \$)

→ Arms imports have decreased
(77% (2010) to 56% (today))

(b) State of indigenisation has
been satisfactory.

Effect  clauses have
been ~~en~~ enforced
successfully.

eg: New Aircraft Carrier has high indigenisation

eg: Rafale deal mandated 30% indigenisation

Defence Procurement procedure gives special preference to IDDM (indigenously made)

India has even exported Brahmos missile to Philippines

Problems in being self-reliant →

- India lacks design capabilities
- Most offset clauses go unrealised
- As per CAR report only,
5000 cr of 60,000 cr promised
offset was realised.
- Private domestic players, still not given priority.
- Reluctance of OEM (Foreign companies), to in technology transfer.
- Failure of Indian products in meeting Army specifications.

Way Forward → A clear Defence procurement procedure must be framed, along with incentives for technology transfer.

16. External influence in internal security challenges is often exacerbated by failure of domestic political and administrative system in coping with the internal conflicts. Comment. Also, mention the ways to tackle external threats to internal security. (250 words) 15

आंतरिक सुरक्षा चुनौतियों में बाह्य प्रभाव आंतरिक संघर्षों का मुकाबला करने में घरेलू राजनीतिक और प्रशासनिक प्रणाली की विफलता से प्रायः बढ़ जाता है। टिप्पणी कीजिए। साथ ही, आंतरिक सुरक्षा के प्रति बाह्य खतरों से निपटने के उपायों का भी उल्लेख कीजिए।

External actors such as ~~foreign~~ foreign states & terrorist groups tend to exploit internal weaknesses

Failures of domestic system and its links to external influence:

Poor law & order provides breeding ground for terror groups
eg: China-backed insurgents (PLA) in Manipur.

Developmental deficits lead to frustration among people.

Neglect by Centre & State leads to 'alienation'

Human rights abuses committed by security forces

- ↓
- Such situation are exploited by external actors
 - They pump manpower & give ideological training to locals
 - eg: Pakistan capitalised on Kashmiri frustration, against rigged elections in Kashmir (in 1987).

Ways to tackle external threats -

- Winning hearts & minds of people.
- eg: Operation 'Sadbhavana' in Kashmir by Army.
- Correcting development deficit: by ensuring roads, water, power etc.
- Countering Over Ground workers -

of groups like Let, Jem in
Kashmir

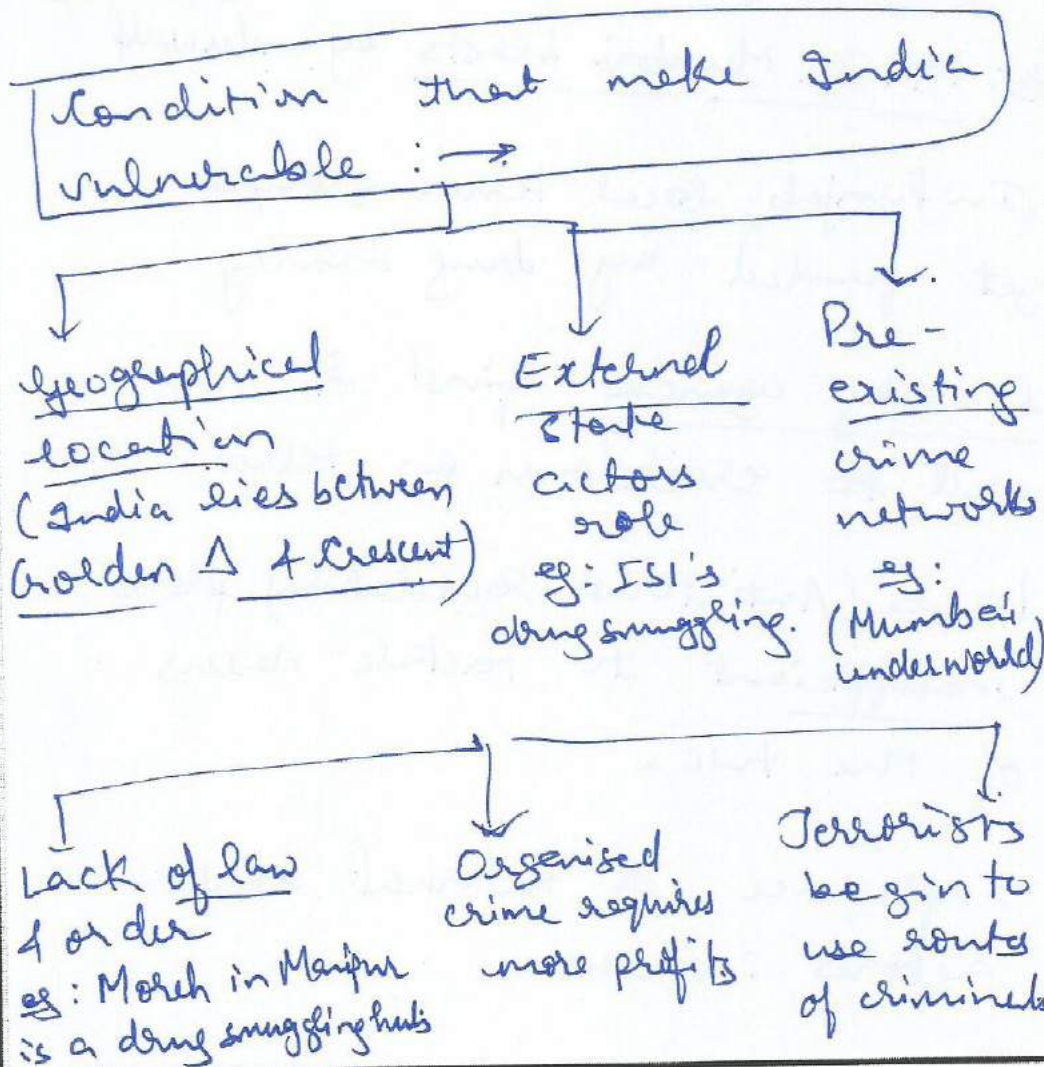
- Crackdown on terror financing networks
eg: NIA investigation on funds
to Kashmiri terrorists (from Gulf)
- International cooperation with
friendly countries
(eg): Blunt launched Operation
All Clear to remove safe
havens.
- Use of locals as 'Eyes & Ears
of security forces.
- Precision strikes against terror
network (with minimal casualties)

Thus careful planning of
operations and winning hearts
of locals is Key.

17. Briefly listing the conditions that make India prone to transnational organised crime and terrorism, discuss the threats that India faces from this nexus. Also, mention the steps that India has taken in this regard.
(250 words) 15

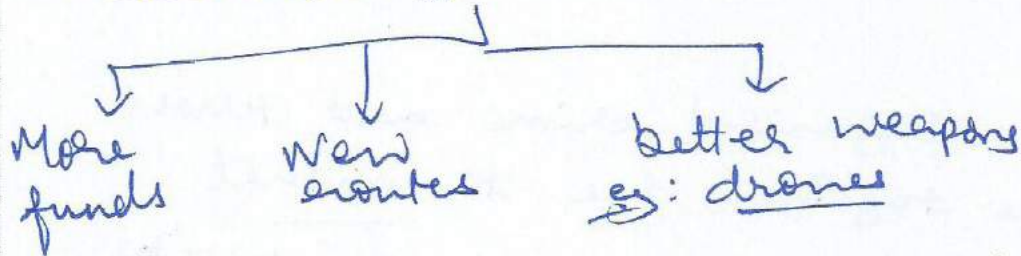
भारत को अंतर्राष्ट्रीय संगठित अपराध और आतंकवाद के प्रति प्रवण बनाने वाली स्थितियों को संक्षेप में सूचीबद्ध करते हुए, इस गठजोड़ के कारण भारत द्वारा सामना किए जाने वाले खतरों की विवेचना कीजिए। साथ ही, इस संबंध में भारत द्वारा उठाए गए कदमों का भी उल्लेख कीजिए।

Organised crime and terror.
come together due to mutual
complementarities, posing a security
threat to India.



Threats faced by India →

→ Terrorists gain access to



→ Criminals begin to use brutal methods for profit.

eg: 1993 Mumbai blasts by underworld

→ In Punjab, local terror groups get funded by drug money

→ Security agencies find it hard to crackdown on terror.

→ Laws (Anti terror legislation) proves insufficient to tackle nexus of the two.

→ Influence of external state actors increases

Steps taken by India -

① Joining conventions → like UN Convention on Transnational Organised crime.

② Joining organisations: India is part of FATF (anti money-laundering agency).

③ Amendment to laws: eg - NIA Act amended to tackle human trafficking & drug smuggling.

④ New monitoring systems → eg: NATGRID, has been established.

⑤ Cooperation with other nations
eg: Operation Sunrise with Myanmar to remove safe havens.

Tackling crime & terror nexus needs holistic approach involving locals, security agencies & state police.

18. Bring out the differences between Surface Web, Deep Web and Dark Web. Also, mention the concerns associated with use of Dark Web and steps taken by India in this context. (250 words) 15

सर्फेस वेब, डीप वेब और डार्क वेब के मध्य अंतर स्पष्ट कीजिए। साथ ही, डार्क वेब के उपयोग से जुड़ी चिंताओं और इस संदर्भ में भारत द्वारा उठाए गए कदमों का भी उल्लेख कीजिए।

The three terms, are different variations of the web.

Surface Web - Websites accessible with regular browsers (eg: Chrome, Firefox etc.)

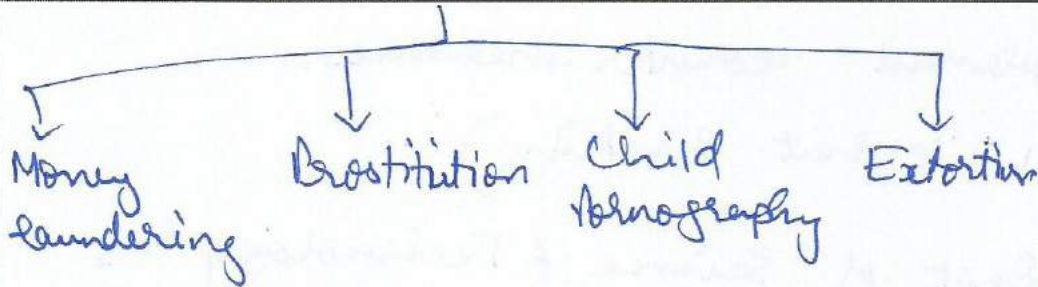
Deep Web → websites not easily accessible & embedded in the Internet.

Dark Web → Websites accessible via web browsers like 'Tor'.

- often the hub of illegal activity

Concerns associated with use of Dark Web -

① Hub of illegal activities -



(b) Threat to National Security

↳ Several terror groups carry out radicalisation via Dark web

→ Terror finance carried out.

⊛ → ~~For~~ Security agencies cannot track criminals on it.

(c) Cyberattacks → occur via Dark web.

(d) → Serves as platforms for exchange of ideas between criminals

Steps taken by India -

* → Recruitment of hackers to

implement counter measures.

(White hat hacking)

② Dept of Science & Technology has
started pilot projects on Dark
Web

③ Government hackers are granted
legal immunity for activities
carried out

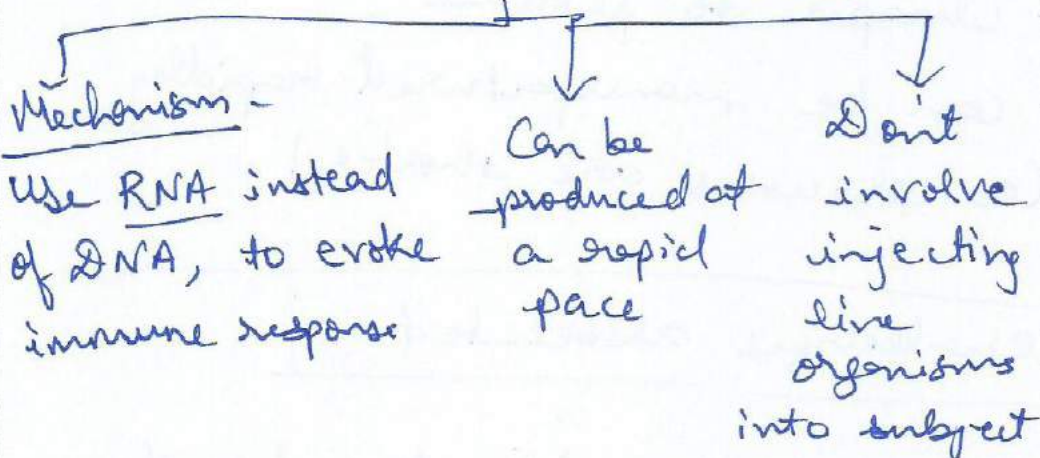
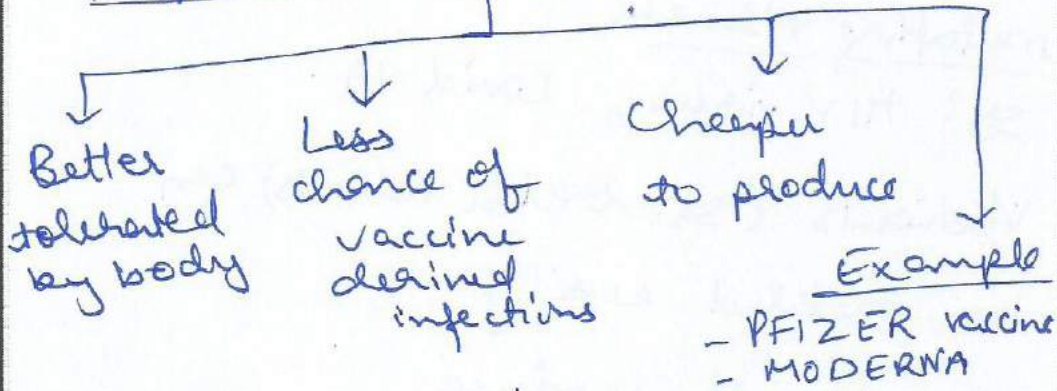
Dark web represent a national
security challenge. Counter measures
must be taken by international
cooperation. India must soon
accede to Budapest Convention.

19. How are Messenger RNA (mRNA) based vaccines different from conventional vaccines? Discuss the benefits and challenges associated with the mRNA vaccines. (250 words) 15

मैसेंजर आर.एन.ए. (mRNA) आधारित टीके पारंपरिक टीकों से कैसे अलग हैं? mRNA टीकों से जुड़े लाभों और चुनौतियों की विवेचना कीजिए।

mRNA vaccines promise advantages such as less antigenicity, ease of production and so on.

Difference from conventional vaccines.



→ Much harder to store than conventional vaccines.

Benefits -

- Evoke a better immune response
- Less Dangerous - as mRNA vaccines only inject RNA, which is well tolerated
- Better suited to tackle rapidly mutating viruses
eg: HIV virus, Covid-19.
- Variants (eg: Delta Variants) can be tackled easily
- Cheaper to produce
- Can be manufactured rapidly (as processes are shorter).

Challenges associated

- Storage - require temperature of -70°C (being heat sensitive)

- Less suited to India → as we lack a well functioning cold chain.
- Information asymmetry - as several risks of mRNA vaccines, are still to be discovered.
- Expensive (being a new technology)
- Technology exists with more developed countries.
- Reports of adverse side effects
eg: Death with PFIZER vaccine.

mRNA vaccine are a breakthrough, promising better vaccine efficacy.

20. Humans were always far better at inventing technology than using it wisely. Discuss with relevant examples. (250 words) 15

मानव सदैव प्रौद्योगिकी का बुद्धिमत्तापूर्ण उपयोग करने के बजाए उसका आविष्कार करने में कहीं अधिक बेहतर रहा है। प्रासंगिक उदाहरणों के साथ चर्चा कीजिए।

Technology refers to any innovation, which makes our life easier.

9. Revolutionary inventions made by humans:

- ↳ Mobility: Invention of automobile, airplane etc
- ↳ Health → vaccines, stem cells, antibiotics
- Electricity, - Internet

~~the~~ Issues in use of technology

- Misuse → of revolutionary inventions
- eg: Internet has been used for cyber bullying.

→ Overuse: (eg): Antibiotics have been overused, causing antibiotic resistance.

→ Threats to environment →

eg: Thermal power generation is the main driver of climate change.

→ Lack of inclusivity:

Technology & its access has divided us into haves and have NOTs.

eg: Access to Covid vaccine → where African countries were able to vaccinate only 20% of population.

→ Addiction → seen in case of social media.

→ Volatility in markets

eg: Cryptocurrencies (Bitcoin etc),
have fluctuated wildly in terms
of prices.

→ Use for violence

eg: Chemical weapons & Nuclear
weapons have been misused, to take
human lives.

Way Forward = The draft Science,
Technology & Innovation Policy,
2020, stress on inclusivity &
transparency in use of technology