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GENERAL STUDIES (TEST CODE : 1025)

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Medium Eng./Hindi	ENGLISH	Registration Number	143707
Center	ORN	Date	19/9/17

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	12.5	
2	12.5	
3	12.5	
4	12.5	
5	12.5	
6	12.5	
7	12.5	
8	12.5	
9	12.5	
10	12.5	
11	12.5	
12	12.5	
13	12.5	
14	12.5	
15	12.5	
16	12.5	
17	12.5	
18	12.5	
19	12.5	
20	12.5	

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।

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EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

Answer all the questions in NOT MORE THAN 200 WORDS each. Content of the answers is more important than its length. All questions carry equal marks.

12.5X20=250

1. The dual use nature of space technology enables its utilisation for civilian as well as military purposes. In this context, examine the need for a Space Security Policy in India.

अंतरिक्ष प्रौद्योगिकी के दोहरे उपयोग की प्रकृति नागरिक एवं साथ ही सैन्य प्रयोजनों के लिए इसके उपयोग को सक्षम बनाती है। इस संदर्भ में, भारत में अंतरिक्ष सुरक्षा नीति की आवश्यकता का परीक्षण कीजिए।

Space technology refers to the use of space for research and development that leads to the overall benefit of mankind.

Space technology has dual use -

- i) Civilian application.
- ii) Military application.

Space is considered as the 4th dimension of warfare after land, water and air.

Many international conventions

have prohibited the use of outer space for warfare such as the Treaty on peaceful use of outer space.

But satellite technology is increasingly being used to assist the military operations on ground.

During war times, it is possible that hostile nations may target the satellites to disrupt the functions of military on ground.

So, a robust space security policy would always be a necessity.

Other reasons could include -

- capability of nations to hack satellite communication.

- proliferation of space debris.
- evaluation of stranded astronauts
from space stations.
- Non-conventional threats.

Way forward:

A robust and dynamic Space security policy would help India in tackling any event without dealing in a ad-hoc manner.

2. What are the issues associated with coastal security in India? In this context, discuss whether a Central Marine Police Force can help in addressing these issues.

भारत में तटीय सुरक्षा से संबंधित मुद्दे क्या हैं? इस संदर्भ में, चर्चा कीजिए कि क्या एक केंद्रीय समुद्री पुलिस बल (सेंट्रल मरीन पुलिस फोर्स) इन समस्याओं को हल करने में सहायता कर सकता है?

Coastal security refers to guarding the coasts of India upto 200nm, with the help of police and military establishments.

Coastal security has become a concern after the Mumbai serial blasts attack and 26/11 attack.

Utility of a central marine police force would be as follows:

- provide additional support to coastal police and coast guard.
- fill in the existing gaps in the security establishment in terms of

manpower, technology and coordination.

- provide extra support in HADR missions, etc.

The existing issues in coastal security includes -

- lack of coordination between various forces such as coastal police, coast guard and Indian navy.
- Climate change and irregular events such as tsunami, cyclone, etc.
- lack of personnel and commitment and unwillingness to go to sea.
- improper usage of technology, etc.
- fisherman issues.

These issues can be overcome by a central force, but it will also face resistance in form of -

- opposition from state governments.
- opposition from existing machinery.
- lack of cooperation among the forces.

Way forward :

A mechanism for coordination among various forces has to be evolved.

The forces should overcome narrow parochial concerns and work for national integrity.

3. Cyber terrorism holds serious potential to paralyze economic and financial institutions in India. What are the issues and challenges w.r.t. India's cyber security? What initiatives has the Govt taken to address the same?

साइबर आतंकवाद भारत में आर्थिक एवं वित्तीय संस्थाओं को शक्तिहीन करने संबंधी गंभीर क्षमता रखता है। भारत की साइबर सुरक्षा से संबद्ध मुद्दे और चुनौतियाँ क्या हैं? इनका समाधान करने के लिए भारत सरकार ने कौन-सी पहलें की हैं?

Cyber space has emerged as the
5th dimension of warfare after land,
water, air and space.

Recently, there has been an
increase in cyber attacks across the
globe.

It is evident from -

- Petya attack
- WannaCry ransomware attack.
- SBI debit cards hacking.
- leak of US presidential election
communications, etc.

It has a huge potential to

to disrupt financial institutions
because -

- many transactions happen online.
- data is stored in digital format.
- presence of hostile neighbours - Pakistan and China.
- emergence of non-state actors.

Issues and challenges:

- Non-indigenisation of digital hardware $\Rightarrow$ possibility of in-built malware during foreign procurement.
- lack of awareness regarding the consequences.
- lack of strong regulatory mechanism.
- lack of stand-alone data facility.

Initiatives taken by Govt:

- establishment of CERT-In.

- declaring key domains of Critical Information Infrastructure (CII)
- Creation of National CII Protection Centre.
- National Cyber Security Policy.

Way forward:

We should go for more indigenisation.
Should not provide opportunity for
hostile takeover. Should sensitise people
through awareness drives.

4. Critically examine the feasibility of fencing the Indo-Myanmar border as a strategy to contain insurgency given the existing Free Movement Regime (FMR) between the two countries.

उग्रवाद को नियंत्रित करने की रणनीति के रूप में भारत-म्यांमार सीमा पर बाड़ लगाने संबंधी व्यवहार्यता का, दोनों देशों के बीच मौजूदा मुक्त आवागमन व्यवस्था (Free Movement Regime) के परिप्रेक्ष्य में आलोचनात्मक परीक्षण कीजिए।

The Indo-Myanmar border though demarcated is difficult to fence due to the rough terrain of the region.

The Free Movement Regime (FMR) allows tribals such as Nagas and Kuki's to travel up to 16 kms on the other side without any visa requirement.

Need to fence borders:

The open borders enable insurgent groups such as NSCN-IM to use Myanmar as hiding grounds.

It has led to increase in smuggling,

drug trafficking, arms and human trafficking, etc.

- helped push in fake Indian Currency Notes from Pakistan.
- illegal migration from Myanmar.

But facing resistance due to -

- improper and tough terrain.
- tribal population who have relations on both sides of border.
- lack of road connectivity.
- lack of mobile networks.
- lack of development in the region.

Way forward:

Though there are resistances, it is the need of the hour to fence

the borders in the light of growing
unrest in Rakhine state which
may spillover into India. Use of
modern technology in terms of laser
fencing and CCTV camera traps can
be employed to check illegal activities.

5. What do you understand by 'lone wolf attacks'? In the wake of increasing lone wolf attacks across the globe, assess India's vulnerability to such attacks. Also, suggest measures that can prevent such attacks.

'लोन वुल्फ हमलों' से आप क्या समझते हैं? विश्व भर में बढ़ते लोन वुल्फ हमलों को देखते हुए इस प्रकार के हमलों के प्रति भारत की सुभेद्यता का आकलन कीजिए। साथ ही, इस प्रकार के हमलों के रोकथाम हेतु उपाय सुझाइए।

lone wolf attacks refer to the extremist terror attack caused by an individual who is otherwise not associated with any terror organisation.

Recently, such attacks were witnessed in -

- Orlando night club attack - USA.
- Nice attack in France.
- Attack near UK Parliament, etc.

India's vulnerability to attacks:

- Growing population and discontent of minorities offer breeding grounds for lone wolves.

- Growing access to social media, which serves as a platform for indoctrination.
- appeal by ISIS and Al-Qaeda to engage individuals for such attacks.
- lack of robust regulatory mechanism for social media.
- poor coordination among intelligence agencies.

Measures to prevent attacks:

- requirement for domestic content management by social media companies.
- promoting fraternity and confidence among minorities.
- Regulation of social media in National interest.
- Improved coordination among various

Security focus .

- gaining international cooperation to curb terrorism .

Way forward :

The government should engage with all stakeholders domestically and internationally . Should build capacity to face any adverse event by evolving a standard SOP.

6. What are the factors that lead to generation of black money in India? Discuss the role played by India both domestically and internationally to neutralise the menace of money laundering and black money.

भारत में काले धन के सृजन की परिस्थितियों को उत्पन्न करने वाले कारक क्या हैं? घरेलू और अंतरराष्ट्रीय दोनों स्तरों पर मनी लॉन्ड्रिंग तथा काले धन के खतरे को निष्प्रभावी करने में भारत की भूमिका की चर्चा कीजिए।

Black money refers to the illegitimate money generated through illegal activities and by deliberately not accounting or not bringing it into the banking system.

Factors leading to generation of black money :

- lack of motivation to pay tax.
- high tax rates leading to evasion.
- narrow tax base of less than 1% of population.
- illegal activities such as smuggling, drugs, arms trafficking.
- money laundering.

Role played by India domestically :

- demonetisation .
- promotion to digital technology to bring all money under the formal system .
- Benami property act .
- Gold bond scheme .
- BHIM app - UPI interface .
- Income disclosure schemes .
- rationalisation of tax structure .

Role played by India internationally :

- Financial Action Tax Force .
- entering into revised Double Taxation Avoidance Agreement with Cyprus, Mauritius and Singapore .
- Base Erosion and Profit Shifting (BEPS) prevention action with other nations .

- Information exchange agreements with countries like switzerland.
- Promoting ease of doing business in terms of rational taxes and reduced delays to encourage legal investments.

Way forward :

Money laundering and black money menace has to be dealt with stringently. It has many other effects in curbing terrorism and other illegal activities. Govt should continue efforts domestically and internationally.

7. The national security of the country cannot be strengthened until we focus on intelligence sharing and ensure greater coordination among agencies. Elaborate. Also, highlight the steps being taken by the government to strengthen its intelligence network.

जब तक हम विभिन्न एजेंसियों के मध्य आसूचना साझाकरण (इंटेलिजेंस शेयरिंग) एवं बेहतर समन्वय पर ध्यान केंद्रित नहीं करेंगे, देश की राष्ट्रीय सुरक्षा को सुदृढ़ नहीं किया जा सकता। विस्तारपूर्वक बताइए। साथ ही, सरकार द्वारा अपने आसूचना नेटवर्क को मजबूत बनाने के लिए उठाए गए कदमों पर भी प्रकाश डालिए।

National security is of prime concern for any sovereign nation. It is facilitated with the help of security and intelligence agencies.

But there have been some problems in these agencies reaching their potential: such as :

- lack of coordination among the multiple agencies.
- lack of support from state governments - as 'police' and 'law and order' are state subjects.
- unwillingness of intelligence agencies

to share their information with others.

- agencies being used by the centre to further its motives in political dimensions.
- lack of resources in terms of funds, personnel and latest technology.

Steps taken by government to strengthen intelligence:

- establishment of National Technical Research Organisation (NTRO) under the NSA.
- Splitting R&AW for external intelligence from IB.
- Providing impetus to NATGRID.
- Promoting use of latest technology for greater cooperation in real time.

- Taking state governments into
confidence.

Way forward :

Effective intelligence would go a
long way in preventing attacks such
as 26/11 and wars such as 1962 with
China. Greater coordination and
cooperation is the need of the hour.

8. In what ways is the approach of "Act East" Policy different from "Look East" Policy? Suggest certain priority areas on which India should focus upon to fulfill its ambitious geostrategic and economic goals in the region.

"लुक-ईस्ट" नीति की तुलना में "एक्ट ईस्ट" नीति का दृष्टिकोण किस प्रकार भिन्न है? इस क्षेत्र में अपने महत्वाकांक्षी भू-रणनीतिक और आर्थिक लक्ष्यों को पूरा करने के लिए कुछ ऐसे प्राथमिकता क्षेत्रों का सुझाव दीजिए जिन पर भारत को अपना ध्यान केन्द्रित करना चाहिए।

Act East Policy (AEP) is the functional upgradation of the look East Policy (LEP) under the government of PM Modi.

AEP has additional dimensions over LEP such as defense and security cooperation, combating terrorism, space technology, etc.

AEP also focuses on the areas far east such as Pacific Island nations.

The geo-political centre of gravity has shifted from the middle east to the Indo-Pacific region in recent times. So, AEP is of great significance.

Priority areas for India :

- Greater engagement with ASEAN nations for economic and security cooperation.
- Cooperation with Australia for nuclear energy security.
- Promoting freedom of navigation and overflight in South China Sea.
- Cooperation with Myanmar, Thailand and Vietnam for off-shore oil exploration.
- Space technology cooperation.
- Early finalisation of RCEP agreement.
- Military exercises such as AUSINDEX with countries of east.
- Containing influences of growing China and countering the 'string of pearls'.

Way forward :

India and east Asia, particularly ASEAN share greater synergy in terms of 3Cs - Culture, Commerce and Connectivity. The Govt should work for greater people-to-people contact to enhance complementarities.

9. In recent years there has been an increasing convergence between Russia and China on several global issues. What are its implications for India? What steps should be taken by India to protect its national interests?

हाल के वर्षों में रूस और चीन के बीच कई वैश्विक मुद्दों पर समाभिरूपता (कन्वर्जेंस) में निरंतर बढ़ोतरी देखी गयी है। भारत के लिए इसके क्या निहितार्थ हैं? भारत द्वारा अपने राष्ट्रीय हितों की रक्षा करने के लिए कौन-से कदम उठाए जाने चाहिए?

The relations between Russia and China have seen many ups and downs. In recent times, Western sanctions on Russia after the Criminean issue has forced Russia to go for greater engagements with China.

Implications for India :

The China - Russia nexus has naturally brought Russia closer to Pakistan, which is against India's interest.

Russia supports BRI of China, thus indirectly taking a stand on POK issue.

Russia has conducted military

exercise with Pakistan and is also going for sales of military equipments.

Russia has always helped India to counter Chinese influences in the region, which is doubtful now.

Steps to be taken by India :

India should clearly communicate its discomfort to Russia.

India should assure Russia that relations with the west are mutually exclusive.

India should also go for greater cooperation with European nations such as UK, France and Germany.

India should diversify defence procurement to reduce overdependence on Russia.

Way forward :

India should keep reminding Russia that "one old friend is better than two new ones" as held by PM Modi. China may anytime bring back the border dispute with Russia to the forefront. India is always a reliable natural partner.

10. After remaining peripheral to India's foreign policy priorities, the Indian Ocean has received some attention in recent years. Nonetheless, given the significance it holds, involvement of actors with diverse interests and existing challenges, it is imperative that India redoubles its efforts in shaping the future of the region. Discuss.

दीर्घकाल तक भारत की विदेश नीति की प्राथमिकताओं में हाशिये पर रहने के उपरान्त, हिंद महासागर ने हाल के वर्षों में कुछ ध्यान आकर्षित किया है। इसके अंतर्निहित महत्व, विभिन्न हितों वाले देशों के शामिल होने और मौजूदा चुनौतियों को दृष्टिगत रखते हुए, यह आवश्यक है कि भारत इस क्षेत्र के भविष्य को आकार प्रदान करने में अपने प्रयासों को और अधिक बढ़ाए। चर्चा कीजिए।

Indian Ocean has received unprecedented attention in recent years. This is due to the apparent shift of gravity of global politics from the middle east region to the Indo-Pacific.

Significance of Indian Ocean:

- Over 90% of India's trade and 90% of oil supply passes through it.
- Major sea lines of communication pass through the ocean.
- India's peninsular position gives a strategic advantage over other nations.

- Emerging concept of 'Blue-water economy'.
- Abundance of marine resources in Indian ocean.

Challenges faced :

- Growing presence of China - Coos Island (Myanmar), Chittagong port, Hambantota (Sri Lanka).
- Piracy near Somalia coast and Gulf of Malacca.
- Need for connectivity with Africa and South East Asia.
- Terrorists using sea to enter India as seen in 26/11 attack.

How to redouble efforts :

- Greater multilateral cooperation - IORA,

BIMSTEC, etc SAGAR, etc.

- Enhancing capability of Indian Navy.
- International cooperation to end piracy and terrorism.
- Support freedom of navigation and garner support to UNCHOS.

Way forward :

Indian ocean is also called "India's ocean". So it is imperative for us to establish control in our own backyard.

11. What are the objectives and key achievements of the United Nations Commission on International Trade Law (UNCITRAL)? Also, highlighting India's association with the Commission, identify its influence on various domestic legal regimes.

अंतरराष्ट्रीय व्यापार कानून पर संयुक्त राष्ट्र आयोग (यूनाइटेड नेशन कमीशन ऑन इंटरनेशनल ट्रेड लॉ: UNCITRAL) के उद्देश्य और प्रमुख उपलब्धियां क्या हैं? साथ ही, इस आयोग के साथ भारत की संबद्धता पर प्रकाश डालते हुए विभिन्न घरेलू विधिक व्यवस्थाओं पर इसके प्रभाव की पहचान कीजिए।

The UNCITRAL recently celebrated 75 years of its establishment. It is an important body under the UN group which deals with International Trade.

Objectives of UNCITRAL :

To enable a free trade regime among nations.

To settle disputes emerging out of trade between nations.

Promote IPR rules and innovation in the field of trade law.

It's achievements include conclusion
of many international conventions
in trade law such as :

UN convention on International Trade.

Convention on Trade in Goods and
Services, etc.

In Indian context, India has been
associated with UNCITRAL since
independence.

Indian members are regularly
elected to top positions in UNCITRAL.

UNCITRAL has influenced various
domestic laws such as ,

Factory council act.

Phytosanitary measures.

Export control measures .

Quality control measures, etc .

12. What are the issues and challenges faced by Indian migrants in the Gulf countries? Enumerate the steps taken by the Indian government to address these.

खाडी देशों में भारतीय प्रवासियों द्वारा सामना किए जाने वाले मुद्दे एवं चुनौतियाँ क्या हैं? इनसे निपटने के लिए भारत सरकार द्वारा उठाए गए कदमों को सूचीबद्ध कीजिए।

The Indian diaspora in the Gulf nations form the largest expatriate community in the region. The amount for almost 7 million people in the region.

Issues and challenges faced :

- Poor working conditions.
- Compulsory submission of passport to contractors for jobs.
- Poor housing and livelihood options.
- Political unrest in the region - Yemen.
- Conflict between nations - Saudi Arabia against Qatar - reducing inter-state movement.

Steps taken by Govt:

- Opening of diplomatic missions to support diaspora community.
- Timely Humanitarian Assistance and Disaster relief operations - as seen in the case of Yemen - Operation Rahat.
- Pravasi Bharatiya Bima Scheme - for insurance coverage.
- Pravasi Bharatiya Divas - to promote diaspora cooperation.
- Project Mausum - to promote cultural ties.
- Govt also provides diplomatic pressure to resolve conflict among nations through dialogue.

Way forward :

The diaspora in Gulf are an important asset - they help in earning significant forex. Their prosperity is in the greater interest of the nation.

13. The recent breakthrough in the Civil Nuclear field is a sign of India-Japan relations moving beyond the calculations of complementarities and cooperation. Analyse in view of the multiple factors shaping India-Japan relations.

नागरिक परमाणु क्षेत्र में हाल ही में प्राप्त सफलता भारत-जापान संबंधों का अन्योन्याश्रितताओं (अनुपूरक) और सहयोग से परे जाने का चिह्न है। भारत-जापान संबंधों को आकार प्रदान करने वाले विविध कारकों का विश्लेषण कीजिए।

India and Japan relations has seen many ups and downs. Japan has been a large contributor to the development of India. But relations deteriorated after Pokhran test in 1998.

In recent times, due to the growth in stature and responsibility of India in the region, both nations have gone for enhanced cooperation.

Earlier relations were transactional.

Today the relations are beyond complementarities as seen in the recent Civil Nuclear cooperation deal, despite

India not being a signatory to
NPT.

This can be attributed to the
following reasons:

- reduced presence of USA in the region, which served as a nuclear and security umbrella to Japan.
- growing influence of China and assertion in South-China Sea.
- growing threat from North Korea.
- ageing demography of Japan.
- willingness of Japan to diversify its security partners to counter threats.

Significance of cooperation with India:

- India could act as a net security provider in the region.

- Greater economic cooperation as
seen in DMIC, CBIC, Mumbai -
Ahmedabad bullet train, etc.

Way forward :

India and Japan could work
together in the greater interest of
the region. They can also support
each other for UNSC membership.

14. The Commonwealth grouping has been accused of talking about ideals that it does not uphold and wasting the resources of governments. Critically analyse the statement and comment on the relevance of the Commonwealth grouping in present times.

राष्ट्रमंडल समूह पर उन आदर्शों के संबंध में चर्चा करने जिनका स्वयं इसके द्वारा अनुसमर्थन नहीं किया जाता एवं सरकारों के संसाधनों का अपव्यय करने के आरोप लगते रहे हैं। इस कथन का आलोचनात्मक विश्लेषण कीजिए एवं वर्तमान समय में राष्ट्रमंडल समूह की प्रासंगिकता पर टिप्पणी कीजिए।

The commonwealth group of
nations include the former colonies
of Britain and other countries
willing to engage in cooperation.

Positive aspects of the group:

- Helps promote cooperation between
the developing third world nations.
- Helps identify common issues and
threats.
- Helps promote ideals of fraternity,
sovereignty and international cooperation.
- Promotes cultural cooperation in the

form of commonwealth games, cultural exchange, etc.

Drawbacks :

- There is no concrete outcome of cooperation.
- Countries have differing goals and ideologies, which are inherently contradictory.
- The European nations are no more great powers and do not help the third world countries much.

Relevance of commonwealth :

- It has lost relevance with the emergence of regional fora such as SAARC, ASEAN, AU, etc.
- The UN system and NAM also overshadow its utility.

- But, it is relevant to remind
the nations to not fall prey to
the clutches of neo-colonialism.

Way forward :

The commonwealth grouping can
go for greater cooperation by including
other major powers of the world. It
could also help voice concern of
the LDCs.

15. ISRO has successfully flight tested the Reusable Launch Vehicle-Technology Demonstrator (RLV-TD). Discuss the significance of RLV and bring out the differences between RLVs and conventional Launch Vehicles (LVs). What are the challenges in successful execution of RLVs?

इसरो (ISRO) ने पुनः प्रयोज्य प्रक्षेपण वाहन-तकनीक प्रदर्शक (रियूजेबल लॉन्च व्हीकल-टेक्नोलॉजी डेमॉन्स्ट्रेटर: RLV-TD) की उड़ान का सफलतापूर्वक परीक्षण किया। RLV के महत्व पर चर्चा कीजिए तथा RLVs एवं पारंपरिक प्रक्षेपण वाहनों (लॉन्च व्हीकल: LVs) के बीच अंतर स्पष्ट कीजिए। RLVs के सफल कार्य-निष्पादन में क्या चुनौतियां हैं?

Reusable Launch Vehicle (RLV)

refers to the state of the art technology through which, a spacecraft can be launched and the launch vehicle after placing the craft in orbit, re-enters the atmosphere and lands on a designated site.

Significance of RLVs:

- reduces cost of launches.
- helps earn more forex for India.
- reduced impact on the environment.
- can use the available man power to construct other future missions.

- makes India a leader in space technology.

Difference between RLV and conventional LV :

- conventional LVs lose utility and burn out after placing satellite in orbit.
- It also takes a longer time to construct, thus delaying missions.
- RLV, just needs fuel refill and minor overhauling, making it ready for subsequent launches.
- RLV also has inbuilt landing technology and is shaped like an aircraft.
- LV does not land and is shaped like a conventional rocket.

Challenges in successful execution :

- Transfer of technology from Russia

was withheld for long, due to non-signatory of MTCR.

- more research needs to be done before going for full scale mission.
- development of cryogenic engine took long.

Way forward :

RLV-TD is a great achievement and ISRO should focus on achieving greater heights by enhancing research and international cooperation.

16. Women constitute just 14% of science researchers in India, though they are no longer a minority within higher education when it comes to STEM. Analyse the reasons for this state of affairs and discuss how it can be addressed.

यद्यपि भारत में विज्ञान शोधकर्ताओं की कुल संख्या में महिलाएं केवल 14% ही हैं, किन्तु STEM के संदर्भ में उच्च शिक्षा के अंतर्गत वे अब अल्पसंख्यक नहीं हैं। इस स्थिति के कारणों का विश्लेषण कीजिए और चर्चा कीजिए कि इसका समाधान किस प्रकार किया जा सकता है?

Research education in India is seen as a last frontier for STEM graduates. But, the status of women within those engaged in research is not at par to the status of the west.

This can be due to the following reasons:

- early marriage of women.
- time consuming research may force diversion of attention away from families.
- research generally takes a minimum of 4-5 years for substantial

results. Any maternity breaks in between may deviate the course of research.

- lack of proper encouragement for involvement of women.
- safety provisions for late night research.

Ways to address it :

- scholarships and financial incentives for STEM women graduates.
- providing crèche facilities in the research labs / institutions.
- mentorship assistance during maternity period.
- improving employment opportunities in research organisations such as ISRO, DRDO by providing for minimum reservation.

Way forward :

There are many leading researchers from west such as Ada Yonath (Israel) and Marie Curie who have gone a long way till Nobel awards. There is an emerging culture of women taking up research in India. This has to be boosted by government intervention.

17. What do you understand by Internet Governance? Has the recent development of ICANN becoming free from the US government solved the issues of Internet Governance? What should be the way forward?

इंटरनेट गवर्नेंस से आप क्या समझते हैं? क्या संयुक्त राज्य अमेरिका की सरकार से ICANN के मुक्त होने की हाल ही की घटना ने इंटरनेट गवर्नेंस के मुद्दों का समाधान किया है। आगे की राह क्या होनी चाहिए?

Internet governance refers to
the regulation of the content over
the internet and providing permission
to host websites and other services.

There is no single ^{official} regulator
for Internet governance. But ICANN
created by ~~government~~ USA was seen
as a major regulator.

Previous problems with ICANN :-

- domination of USA.
- every communication of every nation
under the web was accessible to USA.

- undermined sovereignty and freedom of other nations.

This made countries like China to go for a closed internet governance structure without any outside influence.

With the independence of ICANN, the following problems exist:

- Western legacy still prevails.
- The institution is not democratic and the offices are occupied by westerners.
- There is only a symbolic split away from government.

Way forward :

A global multilateral regulator
should be formed under an UN
convention or independently.

States should be free from
interference over the internet.

With emergence of non-conventional
actors, a robust security arrangement
has to be evolved.

18. Increase in the cases of nosocomial infections has emerged as a major concern in India. What are nosocomial infections? What are its causes and why is it a major concern in India? Identify the measures required to combat these infections.

भारत में नोसोकोमियल संक्रमण (nosocomial infections) के मामलों में बढ़ोत्तरी एक प्रमुख चिन्ता के विषय के रूप में उभरी है। नोसोकोमियल संक्रमण क्या हैं? इसके कारण क्या हैं और यह भारत में एक प्रमुख चिन्ता का विषय क्यों है? इन संक्रमणों की रोकथाम करने हेतु उपायों की पहचान कीजिए।

Nosocomial infections are a
serious cause of concern in India.
In recent times, it has led to many
instances of serious treatment and
remains a threat in India.

Causes include :

Improper medication and diagnosis.

Rampant usage of anti-bacterial
drugs.

Delayed treatments, etc.

Why a concern in India :

- huge population
- lack of rural healthcare.
- lack of proper sanitation.
- lack of quality drinking water.
- ease of spread into neighbouring nations.

Measures required :

- proper diagnosis.
- timely medication.
- sufficient treatment.
- proper prescription of anti-biotics.
- enhance capacity of primary health centers, etc.

Way forward :

With timely care and diagnoses,
India can get rid of this disease, which
has many socio-economic implications.

19. There is a growing concern that robots, automation and AI will transform the labour markets and lead to massive job loss across the world. Comment. Also mention the steps that can be taken to mitigate the impact of increased automation and AI.

इस विषय में चिंता बढ़ती जा रही है कि रोबोट, ऑटोमेशन (स्वचालन) एवं AI, श्रम बाजार को रूपांतरित कर देंगे और परिणामस्वरूप विश्व भर में बड़े पैमाने पर रोजगारों की हानि होगी। टिप्पणी कीजिए। बढ़ते ऑटोमेशन (स्वचालन) एवं AI के प्रभाव को कम करने हेतु उठाए जा सकने वाले कदमों का भी उल्लेख कीजिए।

In the era of globalisation and technological revolution, there is a proliferation of latest innovations in the form of robots, automation and AI.

Reasons for growing concern of job loss :

- lack of skill sets to be employed in other sectors.
- huge displacement of manual workers.
- cheap availability of technology which could increase productivity.

Though the concern remains regarding job loss, it would be illogical to stop innovating for productivity. Moreover if 1000 manual labourers are laid off somewhere, correspondingly 1000 jobs are created in the innovation industry.

Steps to mitigate impact :

- problem lies in skill development.

Appropriate skills could make the displaced workers complement the new technology.

- Promoting labour intensive sectors like textiles, MSMEs, etc.
- creating alternative livelihood options in other sectors which might not require more skills.

For example, many cab aggregator apps were initially opposed fearing displacement of conventional taxis. Instead it has led to creation of more job opportunities for youth.

Way forward :

Improved efficiency and productivity are no harm anyday. We need to stay evolving in order to fit in the changing times.

20. The importance of IPRs as a marketable financial asset and economic tool needs to be recognised. Elaborate. In this context, analyse how the National Intellectual Property Rights (IPR) Policy intends to lay the future roadmap for intellectual property in India.

बिक्री-योग्य (विपणनयोग्य) वित्तीय परिसंपत्ति एवं आर्थिक उपकरण के तौर पर IPRs के महत्व को मान्यता प्रदान किए जाने की आवश्यकता है। विस्तारपूर्वक बताईए। इस संदर्भ में, विश्लेषण कीजिए कि राष्ट्रीय बौद्धिक सम्पदा अधिकार (IPR) नीति भारत में बौद्धिक सम्पदा का भावी रोडमैप किस प्रकार निर्धारित करना चाहती है?

Intellectual Property Rights refer to the recognition of a person's or a company's intellectual creation and granting the exclusivity for their creation.

IPRs may take the form of patents, copyright, Geographical indicators, etc.

IPRs are a contested concept between the developing and developed countries.

Developing countries like India emphasise more on the public utility of innovation, whereas western capitalist nations like USA, emphasise on profit out of the

novation.

But IPRs have to be recognised as an marketable asset as it serves for greater incentives among the scientific community.

The recent judgement of Hc of Delhi regarding copyright might have served the student community well.

But it may deter the publishers from publishing major works in India.

There is a need for balance between public utility and financial returns.

In this context, the National IPR policy offers following features -

- Time bound recognition of exclusivity, after which it may be open for public use.

- It avoids evergreening of patents and requires substantial improvement to be considered as a new product.
- It goes for compulsory licensing, against western interests.

Way forward:

The IPR policy is TRIPS compliant and India should enhance the capacity of diplomatic corps to negotiate effectively against TRIPS plus.