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GENERAL STUDIES (Test Code : 484)Name of Candidate Ananya DasRegistration No. 6378Schedule 07 Sept, 2014Module 177Place RN Time 5:20 pmDate 19/10/2014Classroom ☐ Distance Learning ☐Classroom & Distance Learning ☐**INDEX TABLE**

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
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21	10	
22	10	
23	10	
24	10	
25	10	

Total Marks Obtained

Remarks:

Signature of Examiner

INSTRUCTIONS

- Do furnish the appropriate details in the answer sheet (viz. Name, ID Number and Test Code).
उत्तर-पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक नम्बर आदि।)
- There are TWENTY-FIVE questions printed both in HINDI and in ENGLISH.
इसमें पच्चीस प्रश्न हैं तथा हिन्दी और अंग्रेज़ी दोनों 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 (क्यू.सी.ए.) पुस्तिका के मुख-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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GENERAL STUDIES (Test Code : 484)

Overall Macro comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

All The Best

1. The persistence of communalism as a significant internal security threat, is rooted in the deadly cocktail of identity politics, developmental deficit and systemic deficiency in state capacity to handle such threats. Comment. 10
- एक महत्वपूर्ण आंतरिक सुरक्षा के खतरे के रूप में सम्प्रदायिकता के लगातार बने रहने की जड़ें, पहचानवादी राजनीति, विकास के आभाव और इस तरह के खतरों को संभालने में राज्य की क्षमता में प्रणालीगत कमी इत्यादि के घातक मिश्रण में निहित हैं। टिप्पणी कीजिए।

Ans: India as a multi-religious, multi cultural society faces one of the most serious threats from communalist forces. Communal riots as recently seen in Muzaffarnagar or Kokrajhar greatly damage the secular fabric of the country, and threaten internal security.

This is deeply rooted in the following factors in a major way:

- Identity politics: With vote bank politics catering to the different castes and religions and incitement of different groups against one another, communal tensions grow. People tend to believe that their interests are different and antagonistic to other groups' interests.

In spite of provisions in Representation of People's Act, 1950, Section 153A and 295A of Indian Penal Code penalising such actions, elections often mark communal tensions in the country.

- developmental deficit : Lack of development and employment opportunities lead to disillusionment among youth. This allow many fringe groups to be swayed by communal elements. Different communities vie for limited resources and blame each other for their plight, heightening tensions.

Most communal riots occur in backward and polarised areas for this reason.

Proper development can direct youth towards real and positive concerns. Education can lead to growth of tolerance and extreme polarisation can thus be countered.

- deficiency in state capacity : Police forces and state administration are not suitably equipped to deal with riot. Riot policing doctrines are not well developed and in most cases, central forces and flag marches are used to stabilise the areas.

~~Also~~ Also, community based programmes to improve interaction between communities are not promoted.

and many issues are politicised for electoral gains.

While these factors worsen the situation, an institutional framework like an effective Communal Violence Bill and its implementation, community sensitisation and promotion of toleration can greatly help reduce these problems.

2. (a) Mountain Strike Corps may not be the answer to the Chinese challenge as it may very well lie in another theater. Comment. 5

'पर्वतीय प्रहार सेना' चीनी चुनौतियों का जवाब नहीं हो सकती है, क्योंकि संभवतः इसकी रणभूमि ही भिन्न है। टिप्पणी कीजिए।

Ans: After the incursion in Sualat Beg Oldin in Ladakh, the government decided to consider the establishment of a dedicated Mountain Strike Corps to meet this threat.

However, this may not be the solution as the problem lies primarily in other aspects:

- Indian Army lacks in mountain warfare arms and ammunition and lightweight weapons, which are useful in such terrain.

① While China has greatly increased connectivity in the Eastern and Western sector, India lags far behind in road and rail connectivity.

China has recently proposed to extend rail links to Shigatse (near Sikkim) and Nyingchi (near Arunachal Pradesh).

- More airstrips like the one at Saulat Beg Oldi need to be built for better air support.
- Border development can also help win over local support and gain soft power.
- Strengthening India's economic and diplomatic stature and increasing trade linkages with China will dissuade such incursions.

Thus, instead of adding to the immense expenditure of an already 'man-heavy' Indian army, efforts to modernise weapons and reduce vulnerability should be made.

2. (b) What is the difference between a Frontier, Boundary and Border?
सीमान्त, सीमा एवं सीमारेखा के बीच क्या अन्तर है?

5

3. Write short notes on:
(a) National Cyber Co-ordination Center.
राष्ट्रीय साइबर समन्वय केन्द्र

5

3. (b) National Critical Information Infrastructure Protection Centre.

5

राष्ट्रीय क्रांतिक सूचना अधोसंरचना संरक्षण केंद्र

National Critical Information Infrastructure Protection Centre (NCIIPC) is a nodal centre for protecting critical and strategic assets like

- atomic power plants databases
- strategic military databases
- information of critical energy installations.

or any other databases or infrastructure which are of strategic importance.

It is the first line of defence for cyber attacks as envisaged by the National Cyber Security Policy, 2013.

4. Differentiate between cyber warfare, cybercrime, cyber terrorism and cyber espionage with examples. 10

साइबर युद्ध, साइबर अपराध, साइबर आतंकवाद एवं साइबर जासूसी के मध्य सोदाहरण अंतर स्पष्ट कीजिए।

Cyber warfare refers to the conflict in cyberspace between nations to take out critical infrastructure and sensitive information. For example: Stux-Net or FLAME virus used by US on Iranian nuclear reactors.

Cybercrime is generally perpetrated by individual black hat hackers, non-state ~~or state~~ actors for crimes like identity fraud, phishing or pharming.

For example: crimes of credit card frauds, spams or false information.

Cyber Terrorism refers to actions by Terrorist organisations to spread fear or to harm government institution or other critical infrastructure for political gains.

Cyber espionage refers to primarily state sponsored spying of other nations' web usage patterns, metadata, information flow for their own ends. For example: The PRISM surveillance programme by National Security Agency (NSA) of USA on several nations including Brazil, Germany, India, Iran etc.

However, this distinction often gets blurred as activities of cyber crime like credit card theft may be used to finance terrorist organisations which may carry out cyber terrorism, or states may sponsor terrorists to carry out such operations. With the rise of non

state actors, the cyberspace has thus become more complex and while internet freedom is necessary it should be regulated for everyone's interests

5. What are the linkages between terrorism and organized crime? Explain their relevance and effect in the context of India. 10

आतंकवाद और संगठित अपराध के बीच क्या सम्बन्ध है? भारत के सन्दर्भ में उनकी प्रासंगिकता और प्रभाव की व्याख्या कीजिए।

Ans: • Terrorism refers to the generation of fear and perpetration of violence to achieve political ends. On the other hand, organised crime is not as political in nature.

• Organised crime involves crimes like drug and human trafficking, counterfeit currency circulation etc for the purpose of profit.

Terrorist organisations often employ these methods too but as means to their end.

• However, the linkages between the two can develop as :-

(i) Organised crime may require political protection of Terrorist organisations

(ii) Terrorist organisations may need organised crime for revenues

For example: Opium trading remains the most prominent cash source for Taliban.

(iii) Both may thus develop in-house capabilities for organised crime

and Terrorism and converge into organisations performing both such functions, often referred to as the CRIME - TERROR CONTINUUM

If such structures subvert traditional political establishments, it leads to the creation of failed states.

Relevance and ^{effect in} context of India :

- Counterfeit currency circulation has often been a major source of finance for terrorist organisations, aided from across the border.
- Drug trafficking is a major source of revenue especially in terrorist groups in the North East due to its proximity to the 'Golden Triangle' hotspot of drug trade.
- According to NIA reports, 15% of funds for Hizb-ul-Mujahideen in ~~the~~ ^{Jammu and Kashmir} come from organised crime.
- Human trafficking is also a major problem especially in North East India which finances terror operations.
- Extortions and kidnappings are also used by terrorists to finance their proceedings and fund raising.

Thus, the crime - terror continuum is also prominent in India and is made worse due to the porous borders, lack of enforcement and aid from external actors.

6. FICN poses a serious threat to India's financial sovereignty. Briefly discuss its effect on the economy. What measures have been taken to curb it? Suggest a few measures that are still required. 10

FICN भारत की वित्तीय संप्रभुता के लिए एक गंभीर खतरा बन गया है। संक्षेप में अर्थव्यवस्था पर उसके प्रभाव की चर्चा कीजिए। इस पर अंकुश लगाने के लिए क्या कदम उठाए गए हैं? इस पर उठाये जाने वाले उपायों को सुझाएँ जिनकी अभी भी आवश्यकता है।

Fake Indian Currency Notes (FICN) are a major threat to the economy as:-

- (1) It leads to an artificial increase in money supply leading to inflation
- (2) It reduces the acceptability of the currency.
- (3) It undermines the integrity of the unit of exchange.

(4) It can be loss making for businesses.

Measures taken to curb it :-

- Security features in currency notes such as water marks, holographic bands etc to enable identification
- Creating public awareness about FICN.
- Controlling 'choke-points' like major international airports, border areas etc.
- Section 489a to 489e of India Penal Code penalise FICN deals suggestions of required measures.

Despite these safeguards, FICN continues to permeate the economy. Some measures which can help deal with these are :-

- More research into security features which are easily observable by users but difficult to replicate.
- Sealing of porous borders
- Promotion of smaller denomination notes.
- More steps by RBI and government to ensure public awareness.

7. It is the absence of a National Immigration Policy that is at the root of India's inability to deal with the menace of illegal migration and resulting threat to India's internal security. Discuss. 10

राष्ट्रीय अप्रवास नीति का अभाव ही भारत द्वारा अवैध प्रवास से निपटने में अक्षमता की जड़ है, जो भारत की आंतरिक सुरक्षा के लिए एक खतरा है, चर्चा कीजिए।

Illegal immigration has been called the most serious threat to internal security by National Security Advisor, Ajit Doval.

The absence of a National Immigration Policy makes it difficult to monitor, identify and thus repatriate illegal immigrants.

Need for a National Immigration Policy

- India's long porous borders and difficult terrain in border areas make ^{illegal} immigration difficult to detect. There is a need to build institutional and an infrastructural framework for this.

- Illegal immigration causes change in demography.

- It alienates the domestic population and can often lead to tensions. For example → Change in ownership of land patterns in Bodoland in favour of alleged illegal immigrants is believed to be the reason behind the violence in Kokrajhar and Chirang districts.

- It can lead to the movement of drugs, counterfeit currency and human trafficking too.
 - The areas where it is most intense - in the areas bordering Bangladesh, Terror networks operate which can use it to their advantage.
 - Terrorist organisations from other countries may get safe haven in India through illegal immigration.
- For example : The Bardhaman blasts in West Bengal are believed to be the handiwork of Bangladeshi insurgents who were working against the Awami League government there.
- It poses a risk to internal security through the above ways and thus should be dealt with as a priority.

India with its limited resources, high population and heterogeneous society can face grave security challenges as there is no framework to effectively deal with problem.

Strong political will and administration are necessary to frame a coherent policy for this threat at the

earliest -

8. What are the threats posed by communication networks to internal security of India? 10

संचार संजालों द्वारा भारत की आन्तरिक सुरक्षा को उत्पन्न होने वाले खतरे कौन से हैं?

Major threats posed by communication networks in India are:-

- (1) With greater internet connectivity, social media has emerged as a major threat in destroying peace and stability. It can be used for:-
- spreading ^{terrorist} propaganda among youth
 - radicalisation of youth
 - recruitment of youth through chatrooms and social networks
 - posting derogatory messages to stoke religious sentiments of particular communities which can lead to communal tensions

- (2) Greater integration of communication technology has led to the creation of virtual training camps for terrorist organisations for making bombs, carrying out attacks etc
- (3) It leads to greater coordination between terrorists while carrying out attacks.
- (4) It opens up possibilities for espionage of key government institutions and strategic installations
- (5) There has been scepticism about the monopoly of Chinese majors like ZTE, Huawei over the internet sector especially in 3G technology.
- (6) Recruitment videos of international terrorist groups like ISIS or Al Qaeda's call for jihad are now broadcast easily over the internet.

However, communication networks can be used to owe advantage despite these limitations. India needs to take steps like increasing cyber security, preventing compromise of telecom networks and use of social media

for constructive purposes to meet
these threats.

9. Only a cooperative security architecture can provide long-term stability and mutual reassurance in the Indo-Pacific region. Comment. 10

केवल एक सहकारी या सहयोगी सुरक्षा ढांचा ही भारत और प्रशांत क्षेत्र में दीर्घकालिक स्थिरता और पारस्परिक विश्वास प्रदान कर सकते हैं। टिप्पणी कीजिए।

The Indo-Pacific region has gradually become the theatre of great power politics and territorial demands of China, Japan, Philippines, Vietnam, Malaysia, Singapore and Brunei and common security concerns too. Japan and Philippines are involved in security agreements with the US, which indirectly involves it in conflicts in East and South China Sea. Thus, with two major nuclear powers involved, direct confrontation is not an option.

A major security architecture is the need of the hour as territorial claims in this region will continue to occur as:

- this region is rich in oil reserves
- it accounts for 10% of fisheries production.
- colonial possessions and traditional rights often become the basis of claims eg: Senkaku/Diaoyu island dispute between China and Japan

So, to prevent recurring disputes a

code of conduct and cooperative security structure is needed which maintains equitable claims and freedom of navigation of seas

In the western part of the Indian Pacific has concerns which are common to the entire region:

- piracy issues especially near Somalian waters. As most of this region depends on oil supplies from Middle East, this is a major problem.
- cyclones and tsunamis which often strike the Bay of Bengal require technical and logistical cooperation.
- cooperation is also required in protecting interests of low lying areas like Maldives and Seychelles in case of sea level rise.

Thus, long term gains can be achieved through cooperation and not conflict

10. Recently concluded Hague Nuclear Security Summit called for strengthening of international "nuclear security architecture" and "nuclear security culture". In this context, highlight the achievements of the Hague Nuclear Summit and discuss the future of nuclear security with its effect on India. 10
- हाल ही में संपन्न हेग परमाणु सुरक्षा शिखर सम्मेलन ने अंतर्राष्ट्रीय "परमाणु सुरक्षा संरचना" और "परमाणु सुरक्षा संस्कृति" को मजबूत बनाने के का आह्वान किया गया। इस संदर्भ में, हेग परमाणु शिखर सम्मेलन की उपलब्धियों पर प्रकाश डालें और भारत पर उसके प्रभाव के साथ परमाणु सुरक्षा के भविष्य पर चर्चा करें।

Achievements of the Hague Nuclear Summit :

- strengthening of nuclear supply controls like nuclear supplies group and for dual-use weapons under Wassenaar Arrangement
- controlling the nuclear black market especially in South Asia
- Taking concerted steps to prevent access of nuclear weapons to non

state actors.

- Increasing compliance to IAEA safeguards in nuclear installations

Nuclear security concerns in India:

Though India is not a signatory to the Non Proliferation Treaty (NPT), 1968, it has opened its civilian nuclear installations for IAEA inspections.

India has put a unilateral moratorium on nuclear testing and is only focussing on civilian nuclear use.

The ratification of the Additional Protocol of IAEA demonstrates India's commitment to rule-based 'nuclear security architecture'.

11. In the light of recently held BIMSTEC Summit 2014, examine the role of BIMSTEC in India's quest for trans-border connectivity with south-east Asian countries. 10

हाल ही में आयोजित बिम्सटेक सम्मेलन 2014 के प्रकाश में, दक्षिण-पूर्व एशियाई देशों के साथ भारत की सीमा पार सम्बद्धता के प्रयास के संदर्भ में बिम्सटेक की भूमिका की जांच करें।

The BIMSTEC summit, 2014 held in Nay Pyi Taw, Myanmar made important inroads in increasing connectivity with South East Asia and India, while some projects had been conceived earlier, and were reaffirmed to in the summit, some new steps were also taken :-

- (1) A multimodal transport system from Chennai to Bangkok through Dawei, Myanmar.
- (2) An India - Myanmar - Thailand trilateral highway project.
- (3) The Bangladesh - China - India - Myanmar (BCIM) corridor to increase onland connectivity.
- (4) The Kaladan Multimodal Transport system to connect Howrah to Sittwe, Myanmar by sea and further to Tamu - Kalewa highway.
- (5) Development of Andaman Islands as a trans-shipment hub.

These initiatives are of great economic and strategic importance to India as :-

- they would provide an impetus to trade in North East India.
- help in increasing sea connectivity to the BIMSTEC countries.
- help in neutralising Chinese influence across countries like Myanmar, Laos, Thailand etc.

However, these initiatives have remained mere proposals till now and bureaucratic delays abound. While finances are available from Asian Development Bank, unnecessary delays can undermine India's commitment to this very strategic region.

12. As the global economic power shifts to the east, maintaining prosperity and stability across the diverse Indian Ocean region has become imperative. Comment. Also examine the role of IOR-ARC in furthering this objective. 10
- जैसे-जैसे वैश्विक आर्थिक शक्ति पूर्व की ओर स्थानांतरित हो रही है, विविधतापूर्ण हिंद महासागर क्षेत्र में समृद्धि और स्थिरता बनाए रखना अनिवार्य हो गया है। टिप्पणी करें। इसके अलावा इस उद्देश्य को आगे बढ़ाने में आईओआर-एआरसी की भूमिका की जांच करें।

The Indian Ocean Rim-Association for Regional Cooperation (IOR-ARC) represents a grouping of numerous littoral countries bordering Indian Ocean in Asia and Africa, including India, with decline in the economic power of the West and growth of the East, this association assumes

special significance as :-

- Indian Ocean is rich in resources with petroleum reserves in sedimentary basins and rich fisheries.
- It includes the oil-rich Middle East, mineral rich East Africa as well as peninsular India.
- Diverse economies including the SE Asian advanced economies as well as least developed African nations form a part. This can help in bridging the gap through economic cooperation and technological transfer.
- India can play a prominent, if not dominant, role and use this forum to gain greater access to relatively new markets of Africa.
- greater people-to-people contacts can further improve trade connections.
- cooperation in areas like environment and climate change.

- for economic stability, security and freedom of navigation of seas is paramount.

IOR-ARC can play a major role in piracy control through concerted efforts off the somalian peninsula.

With SAARC being an unviable grouping over the past decades and ASEAN as a ground of chinese dominance, IOR-ARC can emerge as a suitable alternative for increasing Asian and African cooperation in Indian Ocean.

13. India's relationship with Central Asia is based on a unique model of political, economic, cultural and developmental partnership. Elaborate on the issues and prospects related to enhancing India – Central Asia engagement. 10
- मध्य एशिया के साथ भारत के रिश्ते राजनीतिक, आर्थिक, सांस्कृतिक और विकास संबंधी साझेदारी के एक अनूठे मॉडल पर आधारित हैं। मध्य एशिया-भारत के मध्य संबंधों को बढ़ाने से संबंधित समस्याओं और संभावनाओं पर प्रकाश डालें।

India's relationship with Central Asia grew firmly after the disintegration of USSR in 1991 and emergence of the central Asian republics (CAR)

Political engagement exists between the two nations through the 'India - Central Asia dialogue'.

India and the CAR have strong diplomatic relations. With pullout of troops from Afghanistan, political cooperation remains very important. Economic engagement is the most important aspect:

- Indian oil companies have picked up stakes in oilfields in Kazakhstan, Uzbekistan ~~at~~ and Turkmenistan.
- A Turkmenistan - Afghanistan - Pakistan - India (TAPI) pipeline has been proposed for transporting natural gas.
- India has also entered into contracts with Kazakhstan and

Mongolia ~~four~~ sourcing uranium to India for its civilian nuclear purposes.

Cultural engagement has been historically high between CAR and India from the times of the overland Silk Route.

Greater people-to-people programmes and student ~~and~~ scholarships are promoted.

Development partnership has become particularly important as India seeks to diversify its oil sources and has thus made many investments in CAR.

However, the CAR are viewed by China as its own backyard and thus India's involvement has remained less than the desired level due to overwhelming Chinese presence.

The allotment of Kashagan oil field in Caspian Sea to China over India despite a previous agreement shows the extent of this influence.

However, this cooperation with

CAK is important not only for the above mentioned reasons but also for security concerns ~~of~~ especially for controlling Terrorism and instability.

14. Highlight the contribution of the Indian Diaspora to reforms in India. Also describe how their achievements contribute to India's image. 10

भारत में सुधारों के लिए विदेशों में बसे भारतीयों के योगदान पर प्रकाश डालें। इसके अलावा उनकी उपलब्धियाँ भारत की छवि के लिए कैसे योगदान करती हैं। वर्णन करें।

contribution of Indian diaspora to reforms in India are highlighted below:-

- Investment ^{by the diaspora} in software sector and the IT/ITES industry made India a world leader in ^{information} technology.
- Remittances received from the diaspora serve as a very important source of revenue which provide funds for reform enactments.

- Investment from the diaspora has helped in job creation across sectors.
- The Indian diaspora, especially in the west, has grown as a prominent and affluent section with considerable political influence. This has led to favourable disposition of foreign governments towards India.

Their achievements has greatly contributed to India's image;

- Large number of Technocrats in US and Europe have helped developed India's image as a software major.
- Workers in the Gulf and Middle East have often been commended for their expertise and dedication.
- Business leaders like Satya Nadella, Indra Nooyi bolster India's image. These developments have greatly aided in increasing India's stature and soft power globally.

15. To what extent can BRICS serve as a principled voice of the global South? What are the challenges it is likely to face in its quest to achieve its stated objectives? Can IBSA play a complementary role from India's perspective to achieve its aims? 10

किस हद तक ब्रिक्स (बीआरआईसीएस) वैश्विक दक्षिण के एक सैद्धांतिक आवाज के रूप में कार्य कर सकता है? अपने उद्घोषित उद्देश्यों को प्राप्त करने के प्रयासों में इसे किन चुनौतियों का सामना करना पड़ सकता है? क्या भारत के दृष्टिकोण से इसके उद्देश्यों को प्राप्त करने में इबसा (आईबीएसए) एक पूरक भूमिका निभा सकता है?

BRICS is an attempt to promote a multipolar world and to voice the concerns of the global South. It can play a positive role as :-

- It represents a major part of the world's population and world GDP.
- Two emerging powers - India and China - remain at its helm.
- It can provide a platform for the global south for bridging the 'democratic deficit' in institutions like IMF and World Bank.
- It can help lead concerns of developing world in WTO negotiations and climate change conferences.

However, it faces many challenges in achievement of its objectives as :-

- Internal tensions remain between members. India-China and Russia-China both have territorial disputes.
- India and China are rivals in the economic sphere despite complementarities.

- BRICS is often described as an 'unnatural grouping' due to the geographical distance of Brazil and South Africa,
- While mechanisms like New Development Bank are novel steps, it would not reduce or eliminate the Bretton Woods Institutions dependence.
- Even China and India do not stand on the same page on all climate change issues like Hydrofluorocarbon (HFC) control.

Thus, to emerge as a successful partnership, BRICS needs to tackle these issues.

In contrast IBSA comprising India, Brazil and South Africa have limited conflicts and more complementarities.

- There are no territorial disputes
- Lack of any trade disputes.

However, there are limitations as:

- Without China and Russia, IBSA cannot effectively lead the global south
- Also, it would not have the economic might to be a viable group and would be reduced to a moral voice.
- China and Russia are permanent members of the UN Security Council and can safeguard global south

concerns there too.

Thus, IBSA too suffers from many limitations and may not represent developing world concerns effectively.

16. While India has persistently refused to sign the NPT and CTBT, it continues to be one of the principal advocates of a global nonproliferation policy. What explains this paradoxical stand of India on the issue of nuclear nonproliferation? 10

जहाँ एक ओर भारत एनपीटी और सीबीटी पर हस्ताक्षर करने से इंकार कर रहा है, वहीं दूसरी ओर वह वैश्विक अप्रसार नीति के प्रमुख पक्षधरों में से एक बना हुआ है। परमाणु प्रसार के मुद्दे पर भारत के इस विरोधाभासी दृष्टिकोण का क्या स्पष्टीकरण है?

India's refusal to sign the NPT and CTBT rest on the belief that these treaties divide the world into 'nuclear haves and have-nots'.

While they allow the nations possessing nuclear powers to continue having them, they prevent other nations from developing them. This leads to the creation of a discriminatory regime.

India's stand on nuclear ^{non} proliferation is 'complete and universal disarmament'. It supports that all nations should dilute and destroy their nuclear warheads as possession by any nation puts the world at risk.

- The Nuclear ^{non} Proliferation Treaty (1968)
- prevented any nation which did not possess nuclear weapons from carrying out tests.
 - prescribed punitive measures for violation including sanctions.

Thus, it was discriminatory in nature.

India also opposed the Comprehensive Test Ban Treaty, 1996 as though it banned atmospheric and environmental tests; it did not ban zero yield tests. Nuclear weapon states already had enough data from multiple tests and could thus run tests on computer simulation (known as zero yield tests).

This worked against non-nuclear states. Thus, India's

stand on nuclear disarmament is based on equality and universal peace.

Its own option to weaponise the nuclear option in 1998 does not dilute its commitment to universal disarmament, of which it remains a vocal supporter. India has been a responsible nuclear power and has imposed a unilateral moratorium on nuclear tests which displays its commitment

17. What is the significance of the proposed BCIM (Bangladesh China India Myanmar) corridor for India? 10

प्रस्तावित बीसीआईएम (बांग्लादेश-चीन-भारत-म्यांमार) कॉरिडोर का भारत के लिए क्या महत्व है?

The proposed BCIM corridor covering Bangladesh - China - India - Myanmar can have the following significance for India :

- Better land connectivity of Kolkata, Kunming (China), Mandalay (Myanmar), Dhaka and Chittagong (Bangladesh) can greatly boost overland trade.
- It connects the hinterland to the ports (Kolkata and Chittagong).
- It will increase people to people contacts.
- It will provide a gateway to north east and boost the development of the region.
- It will play a pivotal role in India's look-east policy.
- It has great potential to boost tourism in India, especially to the north east.

- It can help ~~as~~ an alternative access point to the North East instead of the 'Siliguri Corridor'.

- However, India is also concerned that the BCIM corridor may
- increase Chinese influence in the region.
 - may increase illegal immigration from Bangladesh.
 - may make movement of people, weapons and drug trafficking easier through Myanmar and Bangladesh by terrorists in North East. The liberalisation of trade through the border post of Mohakhali with Myanmar saw similar consequences.

Thus, while BCIM corridor can help increase connectivity, its drawbacks must also be factored in and adequate border protection should be facilitated for security concerns.

18. "The advantages accrued by the recent Supreme Court judgments and Compulsory licensing may be lost by the TRIPS+ safeguards being pushed through FTAs and multilateral trade agreements like TPP". Discuss. 10
- हाल के सर्वोच्च न्यायालय के निर्णय और अनिवार्य लाइसेंस से जो लाभ अर्जित हुए थे, TPP जैसे बहुपक्षीय व्यापार समझौतों एवं मुक्त व्यापार समझौतों के माध्यम से लागू हो रहे TRIPS+ सुरक्षा उपायों के कारण समाप्त हो सकते हैं। चर्चा कीजिए।

TRIPS+ safeguards in FTAs and multilateral agreements can harm the ease of availability of generic drugs made available through permission of Supreme Court.

- Many bilateral FTAs and CEPAs put restrictions on import of generic medicines from India
- Restrictions exist on access to advanced technology to Indian firms from abroad for generics

production.

- Many multilateral trade agreements contain mandatory provisions on IPR conformity which can exclude Indian generic medicines on ground of IPR violation.
- They may include provisions for enactment of domestic legislation to bar use, sale and purchase of generics.

These steps would not only harm Indian pharmaceutical industry by reducing revenue but also by putting curbs on technical knowhow.

19. What is "gene patenting"? Discuss in the light of controversy related to BCRA1 and BCRA2 genes. 10

“जीन पेटेंट” क्या है? बीआरसी 1 और बीआरसी 2 जीन से संबंधित विवाद के आलोक में चर्चा कीजिए।

20. What is the need for IRNSS? How does India plan to achieve coverage with a substantially less number of satellites than GPS? 10

IRNSS की क्या आवश्यकता है? GPS की तुलना में काफी कम संख्या में उपग्रहों के साथ भारत किस प्रकार से कवरेज को प्राप्त करने की योजना बना रहा है?

Need for IRNSS :-

Indian Regional Navigation Satellite System (IRNSS) represents a plan of seven satellites which would provide navigational and positional details of upto 1500 km around India, and will be operational by 2015.

- This will reduce significantly the dependence of American global Positioning System (GPS), especially in times of crisis.
- It can be effectively used in disaster mitigation and prevention.

- It will provide support to the military establishments for guiding missiles around physical barriers and to specific targets, aid in movement of infantry in unfamiliar terrain and help in planning logistics.

Military operations are supported through its restricted encrypted service.

- For civilian purposes, it will help in guidance for air navigation. The augmentation systems like GAGAN can shift to IRNSS instead of GPS. Proper directions to aircraft landing can help reduce dependence on ground staff and ^{air} traffic controllers.

- It can be used for roadways and marine navigation too.

- It can be used by governments especially in municipal level for tracking service delivery. for example water tankers in Hyderabad and buses in Ahmedabad are already tracked through GPS.

- It can be used for phase vector management in electrical grids.

While GPS is a 32-satellite constellation, IRNSS will use only 7 satellites. This will enable it to cover its proximate neighbourhood efficiently (1500 km).

21. (a) Illustrate the difference between "Science", "Technology" and "Innovation".

5

विज्ञान, तकनीकी और नवोन्मेष को सोदाहरण स्पष्ट कीजिए।

21. (b) Describe the main objectives and salient features of the Science, Technology and Innovation Policy, 2013. 5

विज्ञान तकनीकी और नवोन्मेष नीति 2013 के मुख्य उद्देश्यों की विशेषताओं का वर्णन कीजिए।

22. (a) What is Bluefin-21? Why was it in news recently?

5

ब्लूफिन (Bluefin)-21 क्या है? हाल ही में यह क्यों चर्चा में था।

22. (b) "Black Box" details are considered to be crucial in an investigation of aviation accidents. What are the components that makes a Black Box important for investigations? 5

“ब्लैक बॉक्स” विमान दुर्घटना की जाँच में बहुत महत्वपूर्ण माने जाते हैं। कौन से घटक हैं, जो ब्लैक बॉक्स को जाँच के लिए महत्वपूर्ण बनाते हैं?

Black Box contains records of proceedings in the cockpit and is thus useful for understanding the circumstances of aviation accidents.

Black boxes are sturdy and do not undergo damage. Their signals remains active for a month after the accident.

The disappearance of MH370 witnessed massive efforts to retrieve the black box for these reasons.

23. How does an optical fiber work and what are its advantages over conventional copper wiring? Examine the need of a National Optical Fiber Network. 10

प्रकाशिक तन्तु (optical fibre) किस प्रकार से कार्य करता है और पारंपरिक तांबे के तारों की अपेक्षा इसके क्या लाभ हैं? एक "राष्ट्रीय प्रकाशिक तन्तु संजाल" की आवश्यकता का परीक्षण कीजिए।

Optical fibres work by total internal reflection of the transmitted signals. There is little or zero refraction in the process.



Total internal reflection

Advantages over copper wiring:

- Optical fibres allow complete transmission of waves
- They are lightweight and easy to store.
- There is minimal loss of signal.
- They are affordable and comparable to conventional wire
- They do not undergo corrosion.

Need of a National Optical Fibre Network (NOFN)

- To bridge the 'digital divide' and increase telecom and internet connectivity.

- It can help develop education networks over long distance.
- It can help promote financial inclusion through e-banking. The Pradhan Mantri Jan Dhan Yojana also makes provision for promoting e-transfer and mobile transfer of funds through NOFN.
- Spread of teleconnectivity can help. The spread of Telemedicine wherein medical services can reach distant rural areas.
- NOFN will help provide more effective extension services to farmers through internet, Kisan call centres etc.

24. Discuss antibiotic resistance and its possible implications for public health. Suggest few policy steps that can be taken to tackle it. 10

एंटीबायोटिक प्रतिरोध और जन स्वास्थ्य पर इसके संभव प्रभाव की चर्चा कीजिए। इससे निपटने के लिए कुछ नीतिगत कदमों को सुझाइए।

Antibiotic resistance is the situation when the body stops responding to antibiotics as the micro-organism infecting the body develop resistance towards them.

- They occur when
- antibiotic course is not completed.
 - due to exposure to multiple antibiotics, complex adaptations turn micro-organisms into 'superbugs'.

This is often seen in hospital acquired infections like

New Delhi Superbug or Methicillin Resistant *Staphylococcus aureus* (MRSA) which do not respond to strong antibiotics like carbapenem too.

Implications on public health:

- Drug resistance can lead to evolution of complex strains which may be difficult to tackle.
- Especially in developing countries like India sufficient R and D may not be available
- Proper health facilities may not be available

Policy steps to tackle it:

- To ensure that antibiotics are sold in multiples of standard courses
- To monitor administration of antibiotics through telemedicine and detailed instructions
- To promote research in developing drugs in resistant strain treatments.
- To develop medical infrastructure to tackle a public health crisis

25. (a) What is Genetic Finger Printing? Bring out some of its applications.
जेनेटिक फिंगर प्रिंटिंग क्या है? इसके कुछ अनुप्रयोगों को बताइए।

5

25. (b) What is DNA Bar-coding? Give an account of its applications.

5

डीएनए बार-कोडिंग क्या है? इसके अनुप्रयोगों का विवरण दीजिए।

