NEXT IAS

NEXT IAS (Head Office) : 27-B, Pusa Road, Metro Pillar no. 118, Near Karol Bagh Metro, New Delhi-110060
Bhopal Centre: Plot No. 46, ZONE-2, M.P. Nagar, Bhopal-462011
Ph: 8081300200, 8827664612 | E-mail : mts@nextias.com | **Web:** www.nextias.com

(To be filled by candidate)

Name of Candidate : Aryan Sharma

NEXT IAS Roll No.: GSPM23B13100 **Date of Examination :** 27/08/2023

Exam Centre : Old Rajinder Nagar ☑ Bhopal ☐ Online ☐

Test Code : TC057

Time Taken : _____

Program : FLT ☐ FLT+ ☐ SLT ☐ SLT+ ☑

MAIN TEST SERIES 2023
(TEST-11)

GENERAL INSTRUCTIONS

This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet.

Candidates must read the instructions on this page and the following pages carefully before attempting the paper.

Candidates should attempt the questions strictly in accordance with the instructions specified in the question paper and in the space prescribed under each question in the booklet. Any answer written outside the space allotted may not be given credit.

Question paper will be provided separately and can be taken by the candidates after conclusion of the exam.

.....

SUBJECT/PAPER
GENERAL STUDIES

Invigilator's Sign. : .....

[To be filled by the STUDENT]

Student's Queries for the Evaluator (if any write them below)

[To be filled by the EXAMINER]

Evaluator's response

(For filling by Examiners only)

Evaluator Code :

Q.No	Pg No.	Maximum Marks		Marks	Total
1	1				
2	3				
3	5				
4	7				
5	9				
6	11				
7	13				
8	15				
9	17				
10	19				
11	21				
12	24				
13	27				
14	30				
15	33				
16	36				
17	39				
18	42				
19	45				
20	48				
Grand Total					

Signature

MACRO COMMENTS

IMPORTANT INSTRUCTIONS

CANDIDATES SHOULD READ THE UNDERMENTIONED INSTRUCTIONS CAREFULLY. VIOLATION OF ANY OF THE INSTRUCTIONS MAY LEAD TO PENALTY.

DONT'S

1. Do not write your name or registration no. anywhere inside this Question-cum-Answer Booklet.
2. Do not write anything other than the actual answers to the questions anywhere inside your QCA Booklet.
3. Do not tear off any leaves from your QCA Booklet, if you find any page missing do not fail to notify the supervisor/ invigilator.
4. Do not leave behind your QCA Booklet on your table unattended, it should be handed over to the invigilator after conclusion of the exam.

DO'S

1. Read the Instructions on the cover page and strictly follow them.
2. Write your registration number and other particulars, in the space provided on the cover of QCA Booklet.
3. Write legibly and neatly. Do not write in bad/illegible handwritings.
4. For rough notes or calculation, the last two blank pages of this booklet should be used. The rough notes should be crossed through afterwards.
5. If you wish to cancel any work, draw your pen through it or write "Cancelled" across it, otherwise it may be evaluated.
6. Handover your QCA Booklet personally to the invigilator before leaving the examination hall.

Candidates must not write on this margin

1. उपभोक्ता मूल्य सूचकांक (CPI) एवं थोक मूल्य सूचकांक (WPI) के बीच अंतर स्पष्ट कीजिए। क्या आपको लगता है कि WPI की तुलना में CPI मुद्रास्फीति का बेहतर माप है? सिद्ध कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Differentiate between Consumer Price Index (CPI) and Wholesale Price Index (WPI). Do you think that CPI is a better measure of inflation as compared to WPI? Substantiate.

(Answer in 150 words) 10 Marks.

Inflation is general increase in average prices of items over the time which is measured broadly under two categories in India - CPI (Consumer Price Index) and WPI (Wholesale price Index)

Differences between CPI and WPI :

CPI	WPI
1) Measures retail inflation ie at consumer level	1) Measure wholesale inflation ie at producer & trader level.
2) Includes services	2) Does not include services.
3) Higher weightage for items consumed daily.	3) More weightage for food & fuel.
4) Estimated by MoSPI	4) Estimated by office of Economic Advisor.
5) Effects the consumers more	5) Less effect on consumers.

Candidates must not write on this margin

Is CPI a better measure than WPI ?

Yes :- 1) Since CPI includes services also it represents more holistic view.

2) WPI fluctuates from 14% to −4% (Jan '2022 to July '23) whereas CPI remained from 8% to 4% in same period thus more stable.

3) Consumer could relate more to CPI than WPI.

No :- 1) WPI have more goods & services in its basket, thus shows better values.

2) In WPI, diesel and petrol prices are well accounted and given more weightage which represents better picture of Inflation, as India's inflation is more driven by food & fuel prices.

Since both CPI and WPI have lacunaes, a better Producers Price Index (PPI) could be the solution for it

Candidates must not write on this margin

2. रोजगारविहीन संवृद्धि भारत के विकास पथ का एक अंतर्निहित लक्षण है। भारत में उच्च बेरोजगारी दर के पीछे प्रमुख कारण क्या हैं? भारत में समग्र रोजगार वृद्धि दर में सुधार हेतु उपचारात्मक उपाय सुझाइए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Jobless growth is an inherent feature of India's growth trajectory. What are the major reasons behind the high unemployment rate in India? Suggest remedial measures to improve the overall employment growth rate in India.

(Answer in 150 words) 10 Marks

Jobless growth is a feature seen when GDP of country grows at a rate greater than rate of employement growth. It creates a pool of unemployed workforce detrimental for country's growth.

Major reasons behind employemet rate being low:

1) CMIE reports 8.3% unemployement in July 2023 due to

a) Lack of manufacturing growth absorbing only 25% of workforce where agriculture taking 43% of it.

b) Services sector contributing to 53% of GDP but employing only 32% of people.

c) Disguised unemployement in agriculture employing 43% to workforce and 16% to GDP growth.

d) MSME sector contributing to 30% of GDP but employs

Candidates must not write on this margin

only 11.2 crore people even after >6 cr MSME's thus a very low ratio employed.

e) ASSOCHAM survey report only 4% of workforce is skilled due to weak academia – industry linkage giving a huge pool of unemployed youth

f) Lack of jobs creation in sectors like video streaming and gaming when the youth is engaged.

g) Less jobs for aged and disabled people.

Remedial measures

- Infrastructure sector can contribute to job creation
- Better education and health to increase human resource capacity.
- As envisaged in NEP 2020 AI curriculum in schools so that youth is ready to take up new jobs
- Development of fisheries and animal husbandry so that people move away from agriculture.
- Manufacturing sector growth will be the panacea as it absorb huge people due to being labour intensive

f) Demographic dividend must be ushered in for India being seen as developed economy by 2047 through employing more youth.

Candidates must not write on this margin

3. यूरिया को NBS योजना के तहत लाया जाना भारत में उर्वरक सब्सिडी से संबंधित सभी मुद्दों के साथ–साथ कृषि की पर्यावरणीय समस्याओं के लिए रामबाण के रूप में देखा जा रहा है। यूरिया प्रबंधन से संबंधित मुद्दों पर प्रकाश डालते हुए भारत में टिकाऊ रूप से यूरिया के उपयोग में आवश्यक सुधारों हेतु सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Bringing urea under the NBS Scheme is seen as the panacea for all the issues related to fertiliser subsidies in India as well as for the environmental problems of agriculture. Highlighting the issues related to urea management, suggest reforms are required to improve the usage of urea in a sustainable manner in India.

(Answer in 150 words) 10 Marks.

₹ 1.75 Lakh Crore is the amount of subsidy for all fertilizer in India (Budget 2023-24) out of which ₹ 1-3 Lakh crore goes towards Urea only.

Urea subsidy vis-a-vis NBS scheme:

* Urea is subsidied directly whereas under NBS subsidy given is indirect and on the proportion of components such as sulphur, nitrogen present in the fertilizer.

Issues related to urea management:-

* Direct subsidy amounts to very low cost of urea for farmers which leads to indiscriminate use over DAP and others.

Candidates must not write on this margin

* Industrial diversion, though somewhat Controlled by Neem-coated urea
* Less efficiency in transfer from soil to roots.
* Benefits do not reach farmers directly as the shops are not automated leading to middleman taking up profits.
* Nitrogen use efficiency (NUE) → 48% (1951) to 35% (2022)

Reforms required

- Training to farmers for efficient use.
- DBT must be ensured effectively
- Crop diversification so that crops require less fertilizers
- Shift towards new forms such as Golden urea (sulphur coated)
- Eventually shifting to NBS as radical shift may be less making for farmers
- Liquid Nano urea & Neem coated must be promoted more

Agriculture is suffering due to wrong crop choice as per climate of the place, leading to more fertilizer use, so farmers must get trained & incentivised for this leading to better agricultural returns and less fertilizer usage.

Candidates must not write on this margin

4. भारत की खाद्य सुरक्षा को न केवल घरेलू कारकों बल्कि वैश्विक कारकों से भी चुनौतियों का सामना करना पड़ता है। टिप्पणी कीजिए। भारत की खाद्य सुरक्षा को सुदृढ़ बनाने वाले कुछ उपायों की चर्चा कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

India's food security faces challenges from not just domestic factors but also global factors. Comment. Discuss some ways to strengthen India's food security. (Answer in 150 words) 10 Marks.

In a developing country, instances of 80% hidden hunger reported by UNESCO and 19% wasting, 32% stunting indicators are alarming and represents status of food insecurity.

Domestic Factors → challenge to India's food security

① 2.3% agricultural productivity against 3.2% of World Bank's global average.

② Climate change → Heat waves → Failure in wheat crops in March (Decrease in wheat production)

③ Rice wheat cropping system led to reduction in millets (28% area in 1947 to 13% today) and pulses (20% to 16%) which provides the cause for hidden hunger.

④ Failure of animal husbandary sector → less milk production.

⑤ Lack of food processing.

⑥ 40% losses reported by FAO (farm to fork)

Candidates must not write on this margin

Global Factors → India's food insecurity

(1) Russia – Ukraine war led to decrease in fertilizer which contributed to less crop production especially oilseeds.

(2) Increasing pressure from WTO on direct subsidies offered.

(3) Reluctance of countries when India blocks the export of commodities like wheat and par-boiled rice

(4) Increasing protectionist policies and India's agriculture sector scrutinised for Green house gas emission (Rice fields)



: India which produces 330 MT grains and 342 MT horticulture requires better facilities to stop losses and enhance food security.

Candidates must not write on this margin

5. हाल ही में भारत नासा के नेतृत्व वाले आर्टेमिस समझौते पर हस्ताक्षर करने वाला 27वाँ देश बन गया है। भारत में अंतरिक्ष अन्वेषण कार्यक्रमों के संदर्भ में इस समझौते के निहितार्थों का आलोचनात्मक विश्लेषण कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Recently, India became the 27th signatory to the Artemis Accord led by NASA. Critically analyse its implications for the space exploration programmes in India. (Answer in 150 words) 10 Marks.

Artemis Accord, an USA led initiative which governs the outerspace so that resources could be shared equitably and reserach is sustainable.

Positive for India by joining this :-

(1) Most helpful for Gaganyaan mission for human space flight learning from USA and Japan.

(2) Equitable ~~power~~ resource sharing provision will help to analyse the resources potential which could prove helpful for India in critical mineral derived technology.

(3) Provision for debris management will ensure India is a partner in space sustainibility.

(4) Space mining will be helpful for domestic electronics

Candidates must not write on this margin

manufacturing sector.

(5) India will emerge as global player in space realising its target of increasing 10%. participation in global space economy from current 2%.

Possible negetive implications:

(1) China and ~~USA~~ Russia could see India's more tilt towards USA

(2) 27 participants in accord will lead to less dialogue and discussion which hamper its objectives.

(3) Mistrust on USA in fields where technology sharing is required has not been good in past as observed in 2005 Civil Nuclear deal.

(4) May hamper India's own progress as India needs to share also whatever resources Chandrayaan-3 will bring.

Space is an emerging sector, India needs to build itself self resilliant and more stronger as shown in soft landing of Chandrayaan-3.

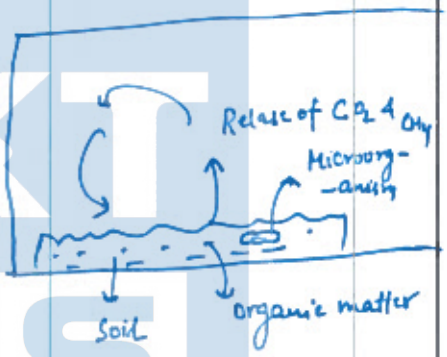
Candidates must not write on this margin

6. मिट्टी में कार्बनिक पदार्थ का अपघटन कार्बन चक्र में किस प्रकार योगदान देता है, और इस प्रक्रिया को प्रभावित करने वाले प्रमुख कारक क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

How does the decomposition of organic matter in the soil contribute to the carbon cycle, and what are the key factors that influence this process? (Answer in 150 words) 10 Marks.

FAO recently released a reported on organic Content in Global soil and present concerns over fast depleting rate of organic content. In this content role of decomposition of organic matter in soil is must to enhance it.

Decomposition of organic matter → Carbon Cycle:



* Organic matter decomposes by the action of microorganisms and release CO_2 and CH_4 in the atmosphere which is further taken by plants for photosynthesis and relates oxygen used by humans & animals and further releasing CO_2, thus completing the cycle.

* If decomposition of organic matter stops it will not only hamper carbon cycle but will

Candidates must not write on this margin

increase waste also.

Key Factors influencing this :–

① **Temperature** :– With the rise in temperature, microbial action also increases leading to further increase in CO_2 and CH_4 release.

② **Humidity** :– more humid hampers the decay but very less humidity is also not much conducive, so efficiency is best at medium level eg :– In Black soil of Maharshtra.

③ **Soil properties** :– If soil is rich in deposits such as alluvial & black release is optimum & it also further contributes to rise in soil efficiency.

④ **Climate change** → furthering GW → and increased emission.

Release of organic matter must be controlled by proper separation of solid waste from municipalities.

Candidates must not write on this margin

7. जलवायु परिवर्तन पर शमन और अनुकूलन रणनीति न केवल भविष्य के उत्सर्जन को कम करने से संबंधित है, बल्कि इसमें वायुमंडल में पहले से उत्सर्जित कार्बन को सक्रिय रूप से हटाना भी शामिल है। इस संदर्भ में आप कार्बन संकलन, उपयोग और भण्डारण (CCUS) की अवधारणा से क्या समझते हैं? इससे संबंधित अंतर्राष्ट्रीय समुदाय की प्रगति पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

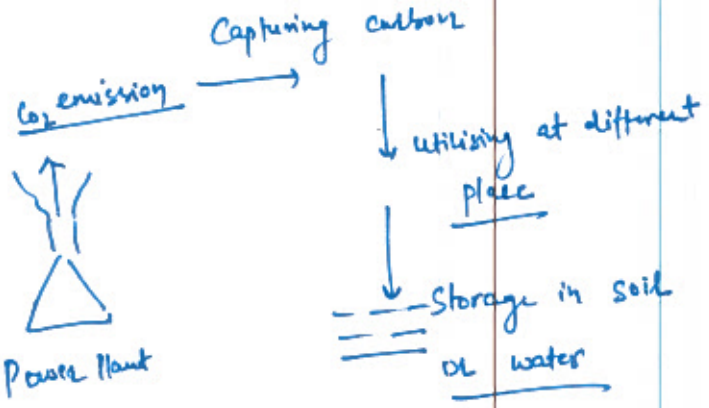
Climate change mitigation and adaptation strategy is not only about reducing future emissions but also involves active removal of already released carbon into the atmosphere. In this context what do you understand by the concept of Carbon Capture, Utilisation and Storage (CCUS) and discuss the progress of the international community in this regard. (Answer in 150 words) 10 Marks.

IPCC 6th Assesment report says that to reach the goal of limiting 1.5°C temperature above Pre Industrial level there is a need to cut emissions by 43% by 2030.

Climate change mitigation & adaptation strategy:

* Mitigation means not letting emission released or reducing them whereas adaptation means that strategies such that it affects lives and economy less.

Carbon Capture and Utilisation Storage (CCUS):



Candidates must not write on this margin

CCUS is a strategy which calls for lesser emissions using surface absorbant or flue gas desulfirsation technology which absorbs the carboy dioxide emitted from any power plant thus limiting release into atmosphere.

* As active removal of already present Co_2!

↓

CCUS also calls for Negative Emission Technology (NET) which means absorbing the already present Co_2 and utilising it for further process eg:- Steam reformed refining and then storing the leftover.

Progress of International Community !

1) Realised in 2000's but slower in that decade
2) After Cop-13 (UNFCC) – Warsaw Pact it accelerated.
3) USA and China are poineer in this and EU recently drafted new technology using GM Poplar trees.

To avert the "Trogedy of Global commons" due to climate change technology transfer could serve as pancea in CCUS further development.

Candidates must not write on this margin

8. इमारतों की घटिया डिजाइन, भवन संहिताओं और अग्नि सुरक्षा मानदंडों का घोर उल्लंघनय तथा बढ़ती भीड़भाड़ शहरी क्षेत्रों में आग के उभरते खतरे के लिए जिम्मेदार है। विवेचना कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Poor building design, flagrant violations of building codes and fire safety norms and overcrowding of spaces are responsible for the rising risk of fires in urban areas. Discuss.
(Answer in 150 words) 10 Marks.

Urban fires are increasing at a rate reported by NDMA when incidents of these increased from 100+ to approximately 600 to 700 only in major cities over last decade.

Factors responsible for various risks :

(1) Poor Buiding design :

a) Decreasing green space and more concretisation on terraces.

b) Poor implementation of fire related safety norms

c) Absence of fire extinguishers.

d) Not following Standard operating procedures

(2) **Violations of building codes :-**

a) GRIHA codes implemented by ECBC

Candidates must not write on this margin

are followed only in 23% of homes.

b) Model buildings code released by centre is adopted only in 10 states till date.

c) Poor implementation by district authorities lead to blatant violations of code.

d) Corruption among contractors and officials.

(3) **Overcrowding of Spaces:-**

a) 56% of urban population lives in just 27 cities of India leads to overcrowding & destroying green cover.

b) 11297 per km² is density of Delhi (2011 census) leads to encroachment of water bodies.

c) 3-4°C is the temperature difference between outer spaces of Bengaluru & internal leads to more fire prone.

Urban fires must be controlled by taking a multistakeholder approach & sustainable urban development to realise India achieving SDG 11.

Candidates must not write on this margin

9. भारत–म्यांमार तथा भारत–बांग्लादेश सीमाओं पर होने वाले नृजातीय संघर्ष और सीमा–पार प्रवासन भारत की आंतरिक सुरक्षा को प्रभावित करते हैं। टिप्पणी कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Ethnic conflicts and cross-border migration along India-Myanmar and India-Bangladesh borders impact India's internal security. Comment. (Answer in 150 words) 10 Marks.

India shares approximately 4075 Km border with Bangladesh and above 2000 km with Mynmar which signifies the importance for especially North east region

Ethnic conflicts along both borders :–

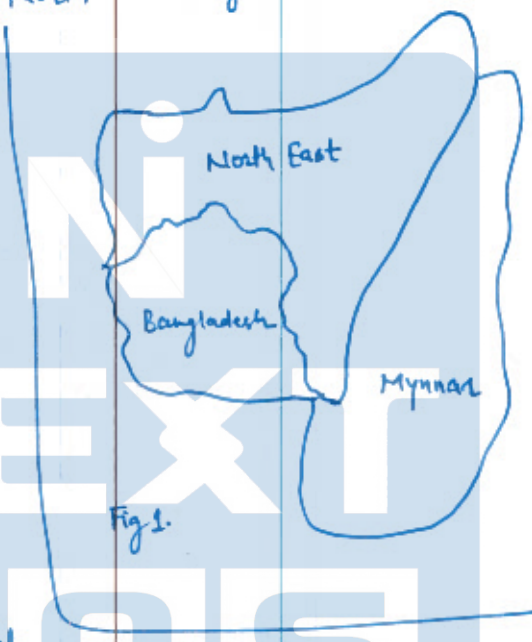


Fig 1.

1) Free movement regime of 14 km with Mynmar has led to easy passage of communities leading to ethnic conflicts among Christian and Hindus.

2) Most of ethnic people coming from Bangladesh are of Muslim religion and creates issue in areas of Assom.

3) Demand of Bodoland (Assom) and Gorkhaland in West Bengal

Candidates must not write on this margin

is due to perceived different ethnic identity

Cross-Border Migration along borders :-

1) Illegal migration along Bangladesh border is also accompanied by drug trafficking and cattle smuggling leading to internal security conflicts in India.

2) UNODC report says heroine cultivation in North region of Mynmar increased after Junta regime which is brought by migrants creating organised crimes in India.

3) Mynmar also serves as safehavens for deviant elements
eg :- Hot pursuit done by India.

4) Rohingya migration severs both borders.

Steps required :
- Implementation of CIBMS
- Better Cordination between CAPF and state police
- Development of border haats.

As PM Modi said that borders are our 1st villages and villages and people residings as strong guards, local community interaction & their help can be taken.

Candidates must not write on this margin

10. धन–शोधन के मामलों की जाँच करने और अभियोग चलाने में कानून प्रवर्तन एजेंसियों के सामने कौन–कौन सी प्रमुख चुनौतियाँ आती हैं तथा उन चुनौतियों को कैसे दूर किया जा सकता है? (150 शब्दों में उत्तर दीजिए) 10 अंक

What are the main challenges faced by law enforcement agencies in investigating and prosecuting cases of money laundering, and how can they be overcome? (Answer in 150 words) 10 Marks.

Money laundering as defined in PMLA 2002 refers to placement, layering and then integration of illegal proceeds into the financial real market.

Main challenges :-

(1) Increased usage of crypto leading to anonymity (1.4 cr users in 2021)

(2) Less capacity of enforcement agencies like ED and CBI (1047 / 70% post vacant in CBI)

(3) Low disposal rate of ED (only 25% cases disposed)

(4) Complex legal procedures in case of seizure of properties of fugitive offenders in 2017 Act.

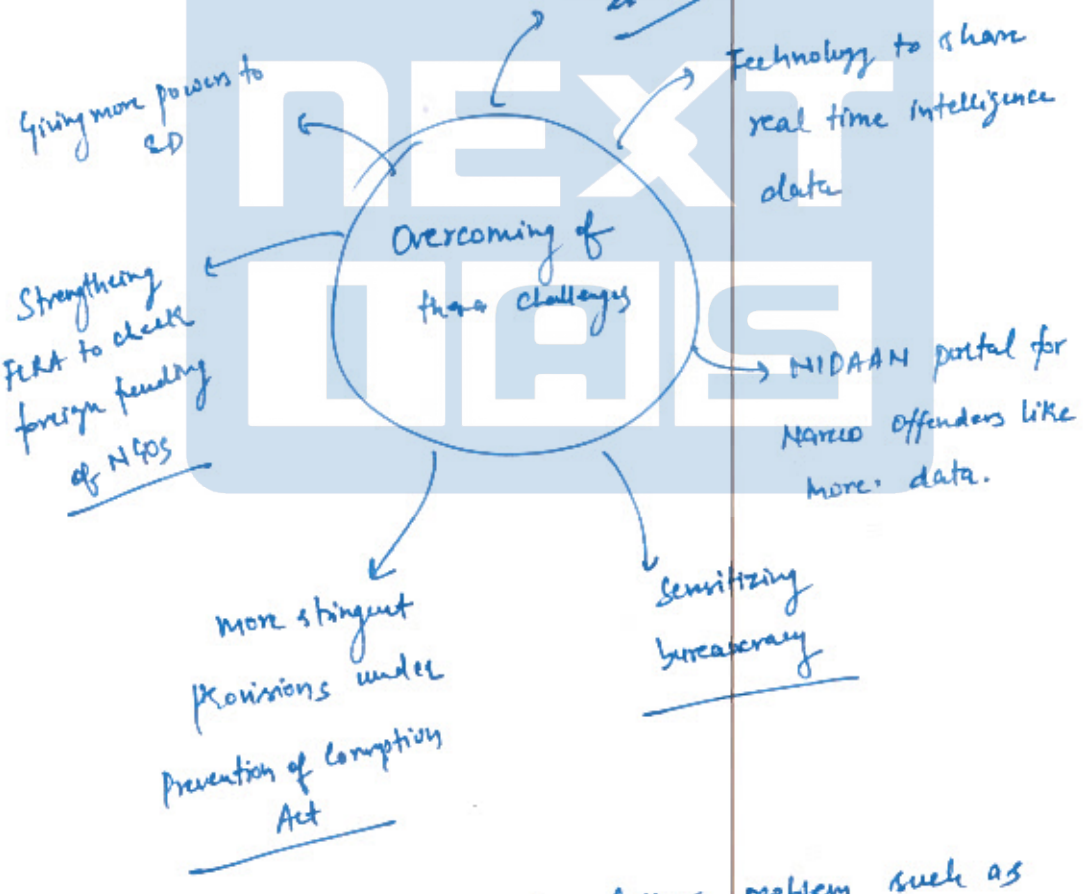
(5) Less technological integration of ED & shocks prone infrastructure.

Candidates must not write on this margin

(6) Increasing financial crimes as reported by RBI (up by 24% in 2021 to 2022).

(7) Increasing funding for terrorism and drug trafficking through laundered money, which makes it difficult to track

(8) Hawala transactions



(9) Money laundering leads to further problem such as terrorism & drug trafficking, so check is a must.

Candidates must not write on this margin

11. निम्न कर उत्प्लावकता प्रायः उच्च घाटे और ऋण में तब्दील हो जाती है। क्या उच्च प्रत्यक्ष कर दर लागू करके भारत में समग्र कर–जीडीपी अनुपात में सुधार किया जा सकता है? भारत की समग्र कर संरचना में सुधार के लिए अन्य कौन–कौन से कदम उठाए जा सकते हैं?
(250 शब्दों में उत्तर दीजिए) 15 अंक

Low tax buoyancy often translates into higher deficits and debt. Can a higher direct tax rate improve the overall tax-to-GDP ratio in India? What other steps can be undertaken to revamp the overall tax structure in India?
(Answer in 250 words) 15 Marks.

Though India recorded a tax buoyancy of 1.51 (highest ever) in this year but in the past it has fluctuated and been a concern of high deficits and debt.

Low Tax Buoancy to higher deficits – Relation :–

Low Tax Buoancy → Tax collected increase is less wrt change in tax rate → So government revenue reduces and expenditure increases → leading to higher deficits and debt

59% for centre and 29.5% for state (Economic Survey)

Higher direct tax rate improve overall tax to GDP ratio?

A. Yes : → because higher the taxes more will

Candidates must not write on this margin

be the revenue source of government and thus increasing tax to GDP ration.

* Higher taxes also leads to inflation, thus increasing prices and contributing to revenue growth.

No !- → Since, higher tax corresponds to lower private investment thus leading to economy being slowed down and less revenue generation.

→ Higher tax rates, more burdened are poor (since 5 Crore files tax in range of less than 5 Lakh slab but only 2.7 Lakh above 10L) so correspondingly government could not generate much revenue.

⊙ So Increasing tax rate can not be as much effective to increase Tax to GDP ration, rather steps like :-

① Structural reforms like Direct Tax Assessment ie Faceless appeal have contributed to growth in tax revenue.

Candidates must not write on this margin

* Better Fiscal consolidation by improving tax compliance norms and incentivising people to pay taxes

* Better corporate tax reforms by improving Ease of Doing business and reforms like Insolvency and Bankruptcy Code so that companies don't fear of starting business and in turn leading to tax generation.

* Better reforms for MSME sector as they contribute 30% to GDP and helps in manufacturing sector where tax rate generation could be higher.

Amrit Kaal presents an opportunity for better tax reforms, but behavioral change at the end of citizens to pay taxes will also be required for this.

Candidates must not write on this margin

12. स्टार्टअप तेजी से बदलती आधुनिक अर्थव्यवस्था के प्रेरक इंजन हैं। भारतीय स्टार्टअप अपनी क्षमता का उपयोग करने में क्यों विफल रहे हैं? भारत में स्टार्टअप्स की लाभप्रदता और प्रदर्शन में सुधार हेतु कौन–कौन से कदम उठाए जा सकते हैं? (250 शब्दों में उत्तर दीजिए) 15 अंक

Startups are the driving engines of the fast-changing modern economy. Why have Indian startups failed to realise their potential? What steps can be undertaken to improve the profitability and performance of startups in India? (Answer in 250 words) 15 Marks.

my Gov. in portal shows registered Indian startups at 80,000+ and 107 unicorns, which shows the startups increasing pace.

Startups as driving engines:

1) Employs the youth population mostly.
2) Creative and innovative thinking promoting knowledge economy.
3) Potential to grow at significant faster rate.

Failure of Indian startups to realise their potential:

1) Stand-up India scheme :— Though it has helped many, but since there was reservation in case of women as head it lead to many fraudlent registrations just for

Candidates must not write on this margin

sake of benefits.

2) **COVID-19 crisis :** could be the most important factor as it has approximately hit every sector & mostly the MSME sector which was unable to pay its loan back & got closed

3) Financial & managerial issues - as initially, growth rate was high less financial prudence was shown in the management eg Vedanta

4) **Less Diversification :-** Due to increased digital penetration, more sectors focused were ed-tech and fin-tech where the competition grew & later led to failure while sectors like skill development and space registered a low growth.

5) Competion Comission of India failed to check the merger when big companies overtook small startups

eg: Amazon overtook.

Candidates must not write on this margin

Steps that can be undertaken :-

(1) ECLGS which provides Collateral free loan of 2 crore in MSME sector must be continued as the whole sector have not fully revived.

(2) More incentivisation must be done in R&D sector, space, nuclear where growth potential is high

eg: Agnikul in space.

(3) Better compliance laws to check regular financial audits of startups.

(4) International collaboration to learn best practises.

India @ 100 must be led by innovation and digitisation and for that to happen Indian startups would be the Key.

Candidates must not write on this margin

13. भारत के आयात बिल में खाद्य तेलों का आयात एक बड़ा हिस्सा है। इस संदर्भ में हाल ही में शुरू किए गए खाद्य तेल एवं तेल पाम पर राष्ट्रीय मिशन (NMEO-OP) के महत्त्व का मूल्यांकन कीजिए। भारत में बढ़ते पाम तेल उत्पादन से संबंधित पर्यावरणीय चिंताएँ क्या हैं?
(250 शब्दों में उत्तर दीजिए) 15 अंक

Import of edible oils forms a major part of India's import bill. In this context, evaluate the importance of the recently launched National Mission on Edible Oils and Oil Palm (NMEO-OP). What are the environmental concerns related to increasing palm oil production in India?
(Answer in 250 words) 15 Marks.

34 million tonne is the annual consumption of edible oils in India, out of which 11 MT is domestic production and 23 MT is imported.

Importance of NMEO-OP :-

* National Mission for Edible Oil - (Oil Palm) aim to increase the product of palm oil to 1 million hectare (muha) area from current 0.6 muha

* Provision of ₹ 10,000 /ha. is there as incentive for farmers.

* Edible oil plantation is at most risk to the pest infestation and required a long gestation period

Candidates must not write on this margin

* So, the initial investment will not yield results that's why ₹10k/ha. is provided for 1st three years of pogramme.

* Since India is moving towards population which will be ageing (25% by 2050) and risk of Non-communicable disease (55% at this time) will also increase, so there is a need to lower the consumption of refined oil (forms 68% of total oil consumption) of India towards edible oil grown naturally - In this context this will play a huge role.

Environmental Concerns regarding to oil palm production in India:-

1) India where average land-holding is 1.06 ha (Agricultural Census 2016), there it is tough as palm oil production require larger fields

Candidates must not write on this margin

2) Fertilizers required for palm oil & other edible oils are relatively higher which will lead to leaching into soil and water bodies.

3) Since, the crops are highly prone to pest, use of pesticides and herbicides can contribute to environ-mental degradation.

4) As seen in ASEAN countries, large amount of deforestation is required to grow oilseeds it will be a huge concerns for us too

Palm oil production has become a necessity for reducing our import bill, but environmental concerns must be addressed before increasing production at large scale.

Candidates must not write on this margin

14. एक सुदृढ़ पशुधन अर्थव्यवस्था कृषकों की आय के एक समानांतर स्रोत के रूप में कार्य कर सकती है। भारत के कृषि क्षेत्र में पशुधन अर्थव्यवस्था की भूमिका पर प्रकाश डालते हुए इसके समक्ष आने वाली चुनौतियों पर चर्चा कीजिए। ऐसे उपाय सुझाइए जो किसानों के समग्र कल्याण में योगदान देने के लिए पशुधन क्षेत्र को सशक्त कर सकें।
(250 शब्दों में उत्तर दीजिए) 15 अंक

A robust livestock economy can act as a parallel source of farmers' income. Highlighting the role of the livestock economy in the agriculture sector in India discuss the challenges faced by the livestock sector in India. Suggest interventions that can strengthen the livestock sector to contribute to the overall well-being of the farmers.
(Answer in 250 words) 15 Marks.

Livestock contributes to 5% of GDP (Economic Survey 2023), and source of livelihood for 80% of rural livelihood.

Role of livestock economy :-

① Act as an external or subsidiary income source.

② Provides insuarance in case of crop failure.

③ Cow dung act as natural fertilizer for crops.

④ Decrease the expenditure of farms by giving inputs for organic farming.

⑤ Fodder crops grown for livestock also helps farmers to substantiate their income.

Candidates must not write on this margin

Challenges faced in livestock:

1) Only 18% of agricultural credit is drawn towards it & enteric fermentation (GHG emission)

2) Only 5% of Gross cropped area used for fodder crops. & diseases such as Lumpy skin

3) Poor technological interventions leading to poor extension services.

4) Lack of artificial insemination programme for increasing breeding capacity.

5) Women constitute 69% of farmers engaged in agriculture but less women specific initiatives.

Though Government have taken missions like Rashtriya Gokul mission, National Action Plan for Disease Control, National Livestock mission

Candidates must not write on this margin

but still some reforms can be taken as:

(1) Increasing agricultural credit and enhancing food processing industry as milk yield in India is 50% of global average only.

(2) Increasing facilities to promote making of milk powder etc.

(3) Enhanced artificial insemination programmes for cross hybriding Indian & outside breeds.

(4) As Shanta Kumar committee advised to increase GCA to 15% for folder crops

Thus, Agriculture can contribute alongside support of livestock sector for making India a 5 trillion economy by 2030

Candidates must not write on this margin

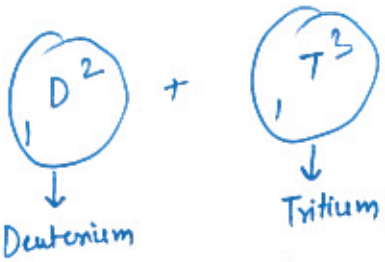
15. परमाणु संलयन को भविष्य का ऊर्जा स्रोत माना गया है, जिसमें स्वच्छ, सुरक्षित और वस्तुतः असीमित ऊर्जा प्रदान करने की क्षमता है। परमाणु संलयन के पीछे के वैज्ञानिक सिद्धांतों और व्यावहारिक अनुप्रयोगों के लिए इस तकनीक के उपयोग में आने वाली चुनौतियों और अवसरों पर चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Nuclear fusion has been hailed as the energy source of the future, with the potential to provide clean, safe, and virtually limitless energy. Discuss the scientific principles behind nuclear fusion and the challenges and opportunities in harnessing this technology for practical applications.
(Answer in 250 words) 15 Marks.

Nuclear fusion is defined as form of energy generated when two smaller atoms combine (of Hydrogen) and in this process generates large amount of energy and that too without any significant waste.

Scientific Principles behind Nuclear fusion :-

1) When 2 small atoms combine, they exchange electrons which leads to energy generation



(Istopes of Hydrogen)

$\rightarrow {}_{2}He^{4} + e^{-} + H_2O.$

Helium — Electron

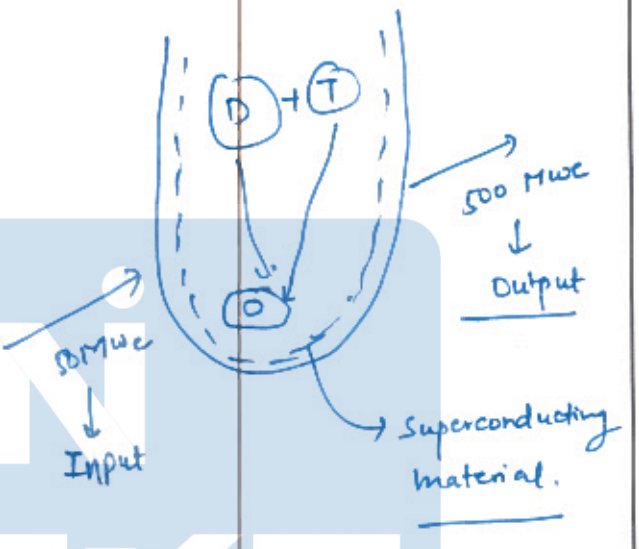
2) When smaller atoms fuse together, a larger atom is formed but this whole reaction

Candidates must not write on this margin

requires enormous heat and that too sustained for approximately 300 seconds (currently only 120s achieved)

Heat required is 8 times the temperature of the Sun

* Reation takes plale in Tokamak



eg: ADITYA (India)

Artifical Sun (China)

EAST (S. Korea).

Challenges of this Nuclear fusion:

(1) Sastaining such a high temperature for 300s is very tough.

(2) Combination of both elements require them to be in pure form, so their extraction in pure form is difficult

(3) Material required for Superconducting layer is not easily available.

Candidates must not write on this margin

Opportunities of this technology :-

* It will be a game changer technology and pave the way for Net zero emissions.
* Problems of waste generation (coal & thermal), seasonal availibility (renewable) are solvable after its adoption.
* World will see a shift in energy production and consumption patterns.

India in LT-LEDS has set a target to increase 3% of energy by Nuclear by 2032, for this it needs to increase its R&D expenditure from 0.86% of GDP, so that Nuclear fusion could also contribute for this target.

Candidates must not write on this margin

16. भारत में आईपीआर के प्रशासन में कौन–कौन सी कठिनाइयाँ रही हैं? भारत में नवाचार आधारित अर्थव्यवस्था को प्रोत्साहित करने के लिए आईपीआर के प्रशासन में सुधारात्मक उपाय सुझाइए। (250 शब्दों में उत्तर दीजिए) 15 अंक

What have been the difficulties in the administration of IPRs in India? Suggest measures to improve the administration of IPRs in order to encourage an innovation-led economy in India. (Answer in 250 words) 15 Marks.

After the signing of TRIPS Agreement, India enacted IPR & Patents Act, 1970 to ensure that rights of scientific community are preserved.

Difficulties in adminstration of IPRs :-

(1) No proper recognition of rights as origin source is may -a- times not clear more in case of traditional rights.

(2) Stringent IPR Norms for R&D sector in case of manufacturing.

(3) Provisions for allowing generic drugs sale and restricts the scientific community to invest in pharmaceutical sector

Candidates must not write on this margin

④ Lack of provisions for checking the biological resources utilisation and IPRs related to use of living organisms.

⑤ Farmers under PPV FRA (2001) are allowed to use seeds, which creates problems for MNC's as observed in Monsanto case.

Measures to improve :-

① Multistakeholder approach is required so that both indigenous people and companies are not hampered

② To lead an innovation led growth, provision of allowing MNC's to use indigenous resources after Access & Benefit Sharing as observed by Uttrakhand HC in Divya Pharmacy

Candidates must not write on this margin

Case.

(3.) Fostering the needs and use of tribal knowledge in pharma sector can lead to better innovations.

(4) As world moving towards GM-adoption, clear cut provisions related to IPRs of living organism must be ensured.

Innovation led-growth and knowledge-economy will derived India towards a developed nation by 2047 only after IPR rules are streamlined with scientific discoveries.

Candidates must not write on this margin

17. वन्यजीव संरक्षण अधिनियम में हालिया संशोधन जंगली जानवरों और पौधों के अवैध व्यापार को रोकने के लिए एक रूपरेखा प्रदान करते हैं ताकि यह सुनिश्चित किया जा सके कि उनके अस्तित्व को खतरा न हो। इस संबंध में भारत में अवैध वन्यजीव व्यापार के निहितार्थों का उल्लेख कीजिए तथा इस मुद्दे को हल करने के लिए हाल के संशोधनों की प्रभावशीलता का विश्लेषण कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

The recent amendments in the Wildlife Protection Act provide a framework to prevent illegal trade in wild animals and plants to ensure that their survival is not threatened. In this regard, mention the implications of illegal wildlife trade in India and analyse the effectiveness of the recent amendments to address the issue. (Answer in 250 words) 15 Marks.

Wildlife Protection Act has been enacted in 1972 for protection of wild animals and plants and recent ammendment in 2023 make provisions more stringent.

Provisions of changed / ammended act :-

↓

In regard to Illegal trade :

a) Increased penalty and offences.

b) Increased powers of State Wildlife Protection Board officers.

c) Central government is endowed with more powers.

Implications of illegal wildlife trade in India :

* Illegal wildlife trade has multidimensionally

Candidates must not write on this margin

effected India :-

1) Problem of internal security as proceeds are used for organised crimes and other activities.

2) Has become a significant issue of borders especially Bangladesh having riverine borders of 54% of total

3) Invasive species are introduced through illegal trade leading to degradation of environment and threat to faunal life who consumes it.

4) Decrease in revenue for the government as charges are levied on cross border trade.

5) India is being penalised under CITES for there provisions.

Effectiveness of recent ~~act~~ ammendments :-

a) It will pave the way for smother border

Candidates must not write on this margin

control due to increased cordination between security forces and State Wildlife Board.

* Increased penalty offences will defer traffickers from indulging in it.

Challenges still remain as :-

* No guidelines for enhancing monitoring.
* Over centralisation of power in centre will incentives State less towards monitoring.

Though, recent ammendments are a good step but further benefits could come from increasing Colleboration between State and centre as the provisions come under Concurrent list.

Candidates must not write on this margin

18. उन कारकों का विश्लेषण कीजिए जो शहरी क्षेत्रों में बाढ़ की घटनाओं एवं विनाशकारिता को बढ़ाने में योगदान देते हैं तथा उन उपायों का भी विश्लेषण कीजिए जो जोखिम को कम करने और आबादी की सहनशीलता बढ़ाने के लिए अपनाए जा सकते हैं। (250 शब्दों में उत्तर दीजिए) 15 अंक

Analyse the factors that contribute to the increased incidence and severity of floods in urban areas and the measures that can be taken to reduce the risk and enhance the resilience of the population. (Answer in 250 words) 15 Marks.

65% of smart cities of India are prone to floods highlighting the problem which will be more severe in case of non-smart cities.

Factors contributing to increased incidence and severity of floods :-

1) Urbanisation is increasing and as expected by UNFPA it will reach 55% by 2050 thus leading to increased housing demands which leads to encroachment of Natural water bodies such as lakes and wetlands and in turn leading to decreased capacity to absorb. eg:- Chennai Floods

2) Climate weather patterns are increasingly changing and as said by UN World Development Report 2022

Candidates must not write on this margin

86% population of India is prone to Hydro-met disasters, it will be disastrous.

3) Poor drainage facilities. eg: Bengaluru floods.

4) Reduced absorbtion capacity of soil due to indiscriminate deforestation.

5) Increased concretisation.

6) Air pollution leading to more particles in air, helping in cloud formation & localised cloud bursts eg: Uttrakhand floods.

7) Changing river courses eg: Jhelum in Srinagar.

Measures that can be taken:

(A) To reduce risk:

a) Better employement opportunities in rural areas so that less migrant population in cities (2/5 is migrant in Bengaluru)

Candidates must not write on this margin

b) Increasing Nature based solutions thus employing Green Infrastructure. eg: wetlands

c) Less habitations around rivers and lakes so that losses can be reduced.

(B) To increase resilience :-

a) Embankments around the boundary of water bodies

eg:- Yamuna embankments.

b.) Flood warning system after analysing meteorological inputs & water levels (eg: Kolkata Flood EWS

As PM Modi said Urbanisation is not a crisis its an opportunity, To tap this potential sustainable urban development is required to minimise such incidences of urban floods

Candidates must not write on this margin

19. क्या आपको लगता है कि भारत में आसूचना विभाग तथा विधि प्रवर्तन एजेंसियों के पास संगठित अपराध और आतंकवाद के गठजोड़ से प्रभावी ढंग से निपटने के लिए आवश्यक संसाधन और क्षमताएँ हैं?

(250 शब्दों में उत्तर दीजिए) 15 अंक

Do you think that intelligence and law enforcement agencies in India have the necessary resources and capabilities to effectively tackle the link between organised crime and terrorism?

(Answer in 250 words) 15 Marks.

Home Minister in recent speech said that Terrorism is single most biggest threat to economy, human rights and growth and we can't allow it to succeed. In this content, role of intelligence and law enforcement agencies is important.

Necessary resources and capabilities to tackle organised Crime and terrorism linkage :-

1) Bodies like National Investigation Agency have specialised statutory backing and under Section 8 of NIA Act, powers to designate any individual or organisation as terrorist.

2) Enforcement Directorate under PMLA, 2002 and Fugitive Economic offenders Act, 2017 have been give

Candidates must not write on this margin

powers to seize the assets even at foreign lands of fugitive economic offenders.

3) CBI has been empowered to arrest and seize in case of corruption acts. which have sometimes linkage to terrorist organisations.

4) Illegal proceeds generated by the organised crime like drug trafficking are seized by Narcotics Control Bureau under NDPS Act.

5) NIDAAM portal for narcotic offenders which often generate resources for terrorist organisation.

6) 30% taxes on crypto assets in Budget 2022 as organisations like ISIS motivate to fund in crypto.

Areas where intelligence & law enforcement agencies are lacking:-

① Multiplicity of agencies (Mitra Shah committee) often hinders and delays the process.

Candidates must not write on this margin

⊙ Vohra committee (1993) also talked about political interference in case of agencies like CBI & ED often leads to problems which may threaten national security

⊙ Most of agencies often lack human resources as officials are on deputation from IPS and state services.

⊙ Lack of intelligence gathering and often not shared with police organisation due to political biasness.

In this content, government steps such as CCTNS (Crime & Criminal Tracking Network System) could prove effective against terrorism and organised crime linkage, thus respecting & ensuring national security

Candidates must not write on this margin

20. भारत को उभरती आंतरिक एवं बाह्य संचार से संबंधित सुरक्षा चुनौतियों से निपटने और साइबर पारिस्थितिकी तंत्र को अधिक सुरक्षित और संरक्षित बनाने के लिए सूचना प्रौद्योगिकी अधिनियम, 2000 को अद्यतन करने की आवश्यकता है। विवेचना कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

India needs to update its Information Technology Act, of 2000 to deal with emerging internal and external communication security and to make the cyber ecosystem more safe and secure. Discuss. (Answer in 250 words) 15 Marks.

NCRB report says that there are 52,000 crime report related to cyber in 2021 an increase of 38% over 2020.

Emerging Internal and external communication security threats

Internal

- Digital illetracy only 32% in India will lead to more cyber crimes.
- Increasing child pornography incidences
- Increasing crypto users leads to more anonymity
- Deep Fakes.

External

- Fear of external state and non-state actors using cyber technology for terrorism
- Emerging global tensions and reduced harmony among states.
- Rise of unethical hackers over years.
- Use of big data analytics
  eg: Cambridge Analytica 2016.

Candidates must not write on this margin

A need to update IT Act 2000 :-

1) IT Act 2000, lacks provision for cyber crimes & cyber terrorism as it was employed at the time when such attacks are less prevalent.

2) IT Act 2000, considers only simpler technology like internet and money (paper form) but due to rising cryptocurrency like assets, it will not be much effective.

3) Recent attacks on AIIMS computer system and Akira Ransomware → there were no provisions to deal with it in IT Act

4) There is no single authority designated for cyber crime incidences reporting and management.

But mere ~~adaptation~~ updation and ammendment in IT Act, 2000 will not serve the purpose, so new reforms required are :-

Candidates must not write on this margin

① Intrusion detection System like Albert Network Monitoring Technology in USA employed.

② DMARC concept for email authentication.

③ Regular updated and more secure data rules for cyber system

④ Updation of list of critical infrastructures under NCIIPC Act 2009.

⑤ Suraksha Setu Portal as launched in Andhra Pradesh.

⑥ And most importantly, training and educating cyber data operators and general masses is required.

India @ 100 will be driven by technology led solutions and for that to be possible resilient cyber ecosystem is sine-qua-non for India.

Candidates must not write on this margin

Space for Rough Work

NEXT IAS