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 : Nazia Parween

Roll No. : PTTP220756

Registration Number : ..... Date of Examination : 14/8/23

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☐

Test - 3

Code : TC705

RCA Batch 2023

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

Q.1 अप्रत्याशित कर (विंडफॉल टैक्स) से आप क्या समझते हैं? क्या आपको लगता है कि अप्रत्याशित करों से संपदा का प्रभावी ढंग से पुनर्वितरण हो सकता है और अधिक आर्थिक समानता को बढ़ावा मिल सकता है?

(150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Windfall tax? Do you think that windfall taxes can effectively redistribute wealth and promote greater economic equality? (Answer in 150 words) 10 Marks

Windfall tax is imposed on incomes & profits resulting out of an Expected Economic situations, which is not regular for business

Eg Windfall tax on Excess gains made by Petroleum Companies due to cheap Russian Crude import,

Windfall tax means for redistributing wealth & promoting Economic Equality

(i) using windfall tax for providing Social security nets

Eg PM Garib Kalyan Ann yojna.

(ii) Preventing Concentration of wealth monopoly

↳ preventing market failure & promoting free-business policies

(iii) It can be used for Universal basic Income

↳ curbing inequality.

Candidates must not write on this margin

(iv) It can be used to mitigate impact of Covid on vulnerable section as per world bank – Gini Coefficient has risen by 2%.

(v) It can reduce fiscal deficit → becoming under. generational Equality

However, it is a short term measure

way forward → Strengthen Manufacturing → to become jobs for youth

→ PM Rozgar Yojna 400 → Skill Capital reaping demographic dividend

→ Strengthening agriculture sector ↳ 46% people employed

→ Empowering women.

windfall tax can curb inequality in the short term, need is to broad based Economic transformation to achieve inclusive growth in long run.

Candidates must not write on this margin

Q.2 नई मौद्रिक नीति समिति (एमपीसी) व्यवस्था के अंतर्गत मुद्रास्फीति लक्ष्यीकरण को क्रियान्वित करने की कथित सफलताओं और चुनौतियों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss the perceived successes and challenges of implementing inflation targeting under the new Monetary Policy Committee (MPC) regime. (Answer in 150 words) 10 Marks

New Monetary policy regime was introduced in 2015 by amending RBI act 1934.

Aim → Inflation targeting to achieve
↳ Macro-Economic stability
↳ balanced growth

Composition → 3 Members from RBI
↳ 3 from Government

Success in implementing inflation targeting

(i) Generally inflation has remained under tolerable band of 2-6%

(ii) It becoming flexible regime
↳ Low repo rate during Covid 19
↳ Monetary tightening in End of 2022 to curb inflation.

(iii) It has achieved double objective of balancing inflation and promoting growth

(iv) ~~It~~ It has curbed inflation by removing speculations, by forward Effective open mechanism

Candidates must not write on this margin

Challenges

(i) delay on policy rate transmissions
(ii) Compromising inflation target to achieve growth objectives
(iii) Continuous inflation on food-grains highlights misery of common man & challenges of MPC
(iv) Lack of Consensus among members, reduces credibility

However, by and large, it has ~~ensured~~ credible mechanism on targeting inflation, as seen in excessive inflation in Countries like US, UK as Compared to India.

Candidates must not write on this margin

Q.3 भारत में सतत् कृषि को बढ़ावा देने और खाद्य सुरक्षा में सुधार के लिए मोटे अनाज उत्पादन की क्षमता का आकलन कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

Assess the potential of millet production in promoting sustainable agriculture and improving food security in India.
(Answer in 150 words) 10 Marks

Millet is a nutricereal & climate Smart Crop. India is largest producer of Millets and accounts for 40% of Exports.

→ Due to Efforts of India, UN has declared year 2023 as International year of Millets.

Promoting Sustainable agriculture

→ requires less water.
  ↳ Curbs over use of ground water
→ Can tackle climate change → drought resistant
→ Can be grown in rainfed area
→ required less fertilizers & pesticides
→ It Can help in increasing productivity of Land
→ It an promote Sustainable agriculture

Candidates must not write on this margin

Improving food security

→ Cost friendly food
→ Nutri-cereals, have multiple benefits
→ Can curb hidden hunger issue
→ Can tackle malnutrition
  ↳ Global hunger Index – India – 107
→ do not have gluten – health benefits

way forward
- ↳ have awareness about benefits
- ↳ include in PM Poshan Scheme.
- ↳ procured under PDS - Govt

Thus millets have potential to make agriculture climate friendly & tackle nutrition dilemma of India, prosperity healthy country & Environment ⇒

Candidates must not write on this margin

Q.4 जल जीवन मिशन में पेयजल की उपलब्धता और पेयजल तक पहुँच में क्षेत्रीय विषमता को समाप्त करने का सामर्थ्य है। मिशन के महत्त्व पर प्रकाश डालते हुए, वांछित उद्देश्यों की प्राप्ति में अंतर्निहित बाधाओं पर चर्चा कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Jal Jeevan Mission has the potential to end the regional disparity in the availability and accessibility of drinking water. Highlighting the significance of the mission, discuss the underlying impediments in achieving the desired objectives.

(Answer in 150 words) 10 Marks

Jal Jeevan Mission was launched to provide drinking water facilities to Every household in Rural areas by 2024.

Significance of Mission

→ providing drinking quality water

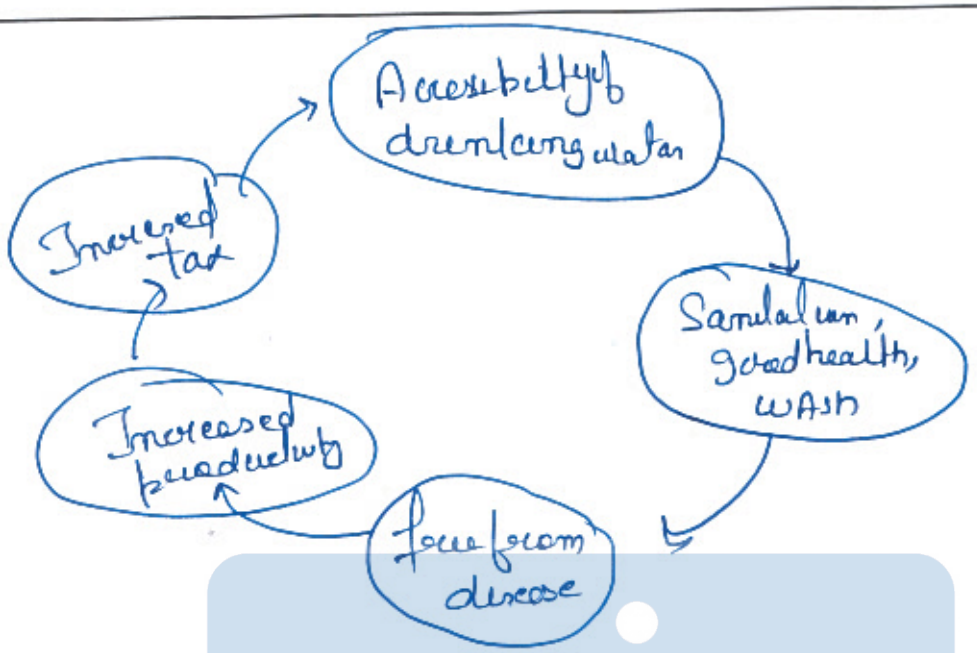
→ women Empowerment → do not have to go far to fetch water

→ recharching ground water through Jan bhagedari

→ tackling cases of dengue, malaria. in due to lack of clean water

→ Can lead to better health & productivity

Candidates must not write on this margin



Challenges

- delay due to regulatory clearance
- Climate change → Erratic availability of water
- Lack of WASH practices

Thus, need to effectively implement the mission & Collaborate with Swach Bharat Abhyan & MGNREGA workforce to achieve SDG targets.

Candidates must not write on this margin

Q.5 बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते हैं? इसके अनुप्रयोगों पर चर्चा कीजिए और यह भारत के ऊर्जा कार्यक्रम में किस प्रकार क्रांतिकारी बदलाव ला सकता है। (150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Battery Energy Storage Systems (BESS)? Discuss its applications and how it can revolutionize the energy program of India. (Answer in 150 words) 10 Marks

Battery Energy storage system has been introduced in Budget (2023-24) to Store Energy produced by renewable Sources like Solar, wind Energy...

Application

- It can store the Excess renewable Energy generated
- It can help portability of Energy
- It can curb the problem of Energy Supply-demand mismatch
- It can power Electronic devices like Electrical home appliances, Electric Cars, etc
- It can encourage investment in renewable sector
- It can reduce the cost of renewable
- It can help achieve paris agreement targets

Candidates must not write on this margin

It Can revolutionize the way Energy is stored, transported and Consumed

It Can limit the Carbon intensity of Economy.

It Can increase profits of discoms.

~~way forward~~ Thus need is to make availability of sufficient lithium to, increase R&D, to further promote Battery Energy Storage System as ~~for~~

Candidates must not write on this margin

Q.6 इसरो के गगनयान मिशन में हुए विकास और उपस्थित चुनौतियों पर संक्षिप्त चर्चा कीजिए। समाज के लिए मिशन के संभावित लाभ क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss in brief developments and challenges in the Gaganyaan mission of ISRO. What are the possible benefits of the mission for the society? (Answer in 150 words) 10 Marks

ISRO is spearheading Gaganyaan mission to carry 3 astronauts to Low Earth Orbit of around 600 km and demonstrate capability to undertake short manned mission.

Developments

→ ISRO has demonstrated recovery Experiments
→ has developed Vyomnaut - robot to Conduct experiments
→ Astronauts are receiving trainings
→ has demonstrated rescue via parachute systems
→ has Successfully Conducted Launch had abort test
→ tested Launch Vehicle LV Mk III
→ Conducting regular tests for missions

Candidates must not write on this margin

Challenges → to minimise impact of gravity
- Successful development of human rated vehicle
- Medical requirements to send to space
- Sourcing food & other amenities for astronauts
- Conducting safe re-entry into Earth's atmosphere after retirement.

Benefits → open door of space tourism
- inter-planetary mission
- Crewed mission to moon
- Spin-off technological benefits

Thus, need to undertake all safety precautions & global collaborations (US, Russia) to make Gaganyaan a new feather on the cap of achievements of ISRO & India.

Candidates must not write on this margin

Q.7 "जलवायु परिवर्तन और प्रदूषण से निपटने की हमारी खोज में हरित हाइड्रोजन एक सरल और जादुई समाधान हो सकता है"। भारत के राष्ट्रीय हरित हाइड्रोजन मिशन के आलोक में कथन का आलोचनात्मक विश्लेषण कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"Green hydrogen can be the silver bullet in our quest to tackle climate change and pollution". Critically analyze the statement in light of India's National Green Hydrogen mission.

(Answer in 150 words) 10 Marks

Green hydrogen Mission was launched on 2022 and was part of Sabtrushi of Indian Budget of 2023-24

Targets of Mission → to develop ability to produce 5mmt of green hydrogen per year by 2030

→ to become global leader in production, usage & export of green hydrogen.

Can be a silver bullet to tackle Climate change & pollution

(i) It Can lower Emission of green house gases

(ii) help in achieving INDC target & Carbon neutrality by 2070

(iii) It Can reduce dependence of fossil fuel imports.

Candidates must not write on this margin

iv) It can decarbonise indian Economy leading to green & clean Economy.
by curbing vehicular pollution.

v) Mission can help to generate green Employment

Challenges → Lack of technology
→ Lack of indigenous Electrolyser
→ lack of funds
→ Lack of trained personnel
→ fossil fuel Contribute ~52% Energy

Power, with adequate Standards, Capacity building, Mission can achieve targets and helps produce 40% electricity from renewable sources by 2030

Candidates must not write on this margin

Q.8 हाल ही में जोशीमठ, उत्तराखंड में आई आपदा के आलोक में, हिमालय क्षेत्र में आपदा प्रबंधन और पर्यावरण संरक्षण के लिए मुख्य सबक क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

What are the key lessons for disaster management and environmental conservation in the Himalayan region, in light of the recent disaster in Joshimath, Uttarakhand? (Answer in 150 words) 10 Marks

Joshimath disaster saw land subsidence, showing fragile ecosystem and given innumerable lessons to balance Environment, Ecology & development in himalyan region

Lessons learnt

(I) It reminded about Seismically active nature of himalyas

(II) It given fresh insight into presence of loose sands in himalyas that make it land slide prone.

(III) It teached lesson to not to interfere with fragile ~~ecosystem~~ Ecosystem of himalyan.

(IV) It was a signal to stop heavy Constructions like hydro power projects, highways

(V) It presented to curb unsustainable tourism and promote Ecosystem

Candidates must not write on this margin

(vi) Along Environmental Conservation with help of traditional knowledge
Eg: Kedarnath storms with landslide disasters

(vii) Giving importance important to maintain natural drainage of Himalayan & Slop Conservation.

(viii) Highlighted people Land use planning in peninsular Ecosystem.

Way Forward → follow HC Mishra Committee recommendation
→ use satellite image - GIS to monitor changes & take early steps
→ to curb anthropogenic activities like Unsustainable tourism & infra structure projects

Thus, Global risk report (WEF) has rightly said there can be no Economy without Ecology.

Candidates must not write on this margin

Q.9 "पंजाब में हालिया कट्टरपंथी रुझानों से पता चलता है कि खालिस्तान का मुद्दा अभी भी उबल रहा है।" हालिया घटनाक्रम के संबंध में कथन पर चर्चा कीजिए और इससे निपटने के उपाय सुझाएँ।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"The recent radical trends in Punjab show that the Khalistan issue is still simmering." Discuss the statement with respect to recent developments and suggest measures to handle it.

(Answer in 150 words) 10 Marks

Recent arrest of Canada-returned Sidhu (a Khalistan preacher) and attack on police stations to free arrested members show Khalistan issue is still simmering.

Another development:
- attack of Indian Embassy in UK & other Countries
- Khalistan rallies in Canada, UK
- threat of life to Indian diplomats

Measures to handle it

(i) Counter propaganda about instability in Punjab

(ii) Seeking collaboration of foreign governments to curb Extremism abroad
   - UK pledged fund to curb Khalistan Extremism in UK

(iii) Curbing drug trafficking to cut financing of Extremist

Candidates must not write on this margin

(iv) Safeguarding international border with Pakistan

(v) Curbing threat of drones transporting arm, money drugs onto India via technology

(vi) Checking Extremist activity in Cyberspace

(vii) Curbing fake news & propaganda
(eg) blocking you tube and-India channels

(viii) Development & Job to Punjab youths

This holistic measures are required to curb Khalistan issue.

NEXT IAS

Candidates must not write on this margin

Q.10 ड्रोन संचालन में आसानी और साथ ही इसके संचालक की अनामिता, भारत की सीमा सुरक्षा की चुनौतियों में वृद्धि करती है। विस्तारपूर्वक वर्णन कीजिए और सीमावर्ती क्षेत्रों में ड्रोन समस्या से निपटने के लिए सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The anonymity and ease of drone operation contribute to the challenges of India's border security. Elaborate and give suggestions to tackle the drone problem in border areas.

(Answer in 150 words) 10 Marks

India is facing challenges from drone like firearms & drug transport across its border. Recent army post was also attacked by drone on Jek.

Challenge to border security
- → Low cost
- → Low risk
- → difficult to locate
- → huge damage
- → Security threat
- → Anonymity.

Suggestion →

(I) Guarding border via Satellite & GIS technology

(II) Strengthening border security by CIBM → Eg Electronic Surveil-

(III) R&D in anti-drone technology

Candidates must not write on this margin

(iv) Involving female sector for development of offensive technology

(v) enhancing Surveillance system from Israel & US

(vi) Community participation for tackling menace of drones.

(vii) Developing international collaboration to curb terrorist network, financing & drug menace.

Thus, holistic approach, Capability development, Community participation can help curb drone menance & strengthe security.

Candidates must not write on this margin

Q.11 विद्युत संशोधन विधेयक, 2022 उपभोक्ताओं, डिस्कॉम के साथ–साथ पर्यावरण के लिए कई लाभ प्रस्तुत करता है। सविस्तार वर्णन कीजिए। साथ ही इसकी कमियों को भी सूचीबद्ध कीजिए और उन्हें दूर करने के लिए कुछ उपायों का भी सुझाव दीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

Electricity Amendment Bill, 2022 brings several advantages for consumers, DISCOMs as well as the environment. Elaborate. Also, list out its shortcomings and suggest some measures to overcome them.
(Answer in 250 words) 15 Marks

Electricity Amendment bill 2022 was introduced to make power sector robust, debt-free, sustainable in wake of ₹ 2.5 trillion debt accumulation on the sector.

Advantages to Consumers.

1. It gives them choice to choose discom operators
2. It gives them freedom to demand renewable Energy from operators
3. Efficient and robust electricity sector will increase Ease of living of Consumers.
4. Competition on sector will lead to optimal charges, benefiting Consumers

Advantages to Discoms

① Provision of timely and graded

Candidates must not write on this margin

revision of tariff rates will curb debts due to reduced populism of not hiking rates

(ii) Reduced Aggregate Technical & Commercial losses will make business sustainable

(iii) Central regulator will bring transparency and level-playing field

Advantages to Environment

(i) Procurement of sourcing renewable Energy by discoms will curb environmental pollution pollution

(ii) It can reduce levels of CO_2, CH_4 & dust in air.

However, Some shortcomings remains

1. It is akin to bewailed ~~telecom~~ electricity sector to has led to protest by farmers, small businesses.
2. Earlier reforms like UDAY has failed to make discoms profitable.

Candidates must not write on this margin

3. Bill does not do enough to tackle Security / Cyber challenges

Eg Cyber attacks on Power grids

4. Dispute redressal mechanism not robust

Measures to overcome them

- Revision of timely tariffs
- reducing ATEC by increasing operational Efficiency
- Interoperability / Connectivity of grid with renewable Energy to make discoms sustainable
- Smart meter & feeder to make discoms profitable

Thus, needs to provide affordable, reliable, accessible Electricity as well as promoting Environment to achieve SDG goals.

=

Candidates must not write on this margin

Q.12 भारतीय प्रतिभूति एवं विनिमय बोर्ड (सेबी) शेयर बाजार के नियमन और निवेशकों के हितों की सुरक्षा में महत्त्वपूर्ण भूमिका निभाता है। दिये गए कथन के आलोक में, सेबी के समक्ष आने वाली चुनौतियों पर प्रकाश डालिए और इस संबंध में सुधारों का सुझाव दीजिये। (250 शब्दों में उत्तर दीजिए) 15 अंक

Securities and Exchange Board of India (SEBI) plays an important role in the regulation of the share market and safeguarding the interests of investors. In the light of given statement, highlight the challenges faced by the SEBI and suggest reforms in this regard. (Answer in 250 words) 15 Marks

SEBI is the regulator of share market & protects the interest of shareholders. Its role came into light on wake of Hindenburg report alleging mal-practices by Adani group of firms.

Role of SEBI

(i) It brings transparency in share market operations
↳ timely disclosure of material information

(ii) Protects interest of shareholders who are small
↳ awareness campaigns

(iii) Curbs malpractices -
↳ like curbing insider trading

(iv) Deepens financial market
↳ Leading to Economic growth.

Candidates must not write on this margin

Challenges faced by SEBI

(i) It's function is hampered due to growing technology and interconnectedness of financial system
↳ digital payments

(ii) It is also facing challenges to regulate transactions of by corporates due to presence of tax havens, Money laundering networks – transnational problems

(iii) Crony Capitalism – leading to Corporate-political nexus, resulting in Corruption & Securitising interest of Shareholder.
Eg) Co-locating case & NSE chief- ~~Rama~~ Chitra Ramakrishnan

(iv) It is plagued by issues of land, function-functionaries

Reforms in SEBI

(i) Bringing transparency in operation

(ii) Adopting pro-business policy to protect interest of all shareholders

Candidates must not write on this margin

(iv) Effective & timely check on audits & disclosure by by corporates

(vi) forming Committee to look, loopholes on the working of SEBI

(v) Using technology to make operations more transparent

(vi) Ensuring timely training to personnel & adequate financing

(vii) Adopting best practices as US Regulations

(viii) Curbing corruption.

Thus, for making India a $5 trillion Economy, financial sector will be a major pillar, which depends on the SEBI's Capability to protect interest of Shareholders.

Candidates must not write on this margin

Q.13 भारतीय अर्थव्यवस्था में एक प्रमुख योगदानकर्ता होने के बावजूद, कृषि क्षेत्र कई बाधाओं से ग्रस्त है जो इसकी वृद्धि और विकास में बाधा डालते हैं। इन बाधाओं पर काबू पाने में प्रौद्योगिकी की भूमिका पर चर्चा कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

Despite being a major contributor to the Indian economy, the agriculture sector is plagued by several constraints that impede its growth and development. Discuss the role of technology in overcoming these constraints.

(Answer in 250 words) 15 Marks

"Future belongs to Country not with Gun but with grains"

Agriculture sector Contributes 16-17% of GVA (Economic Survey) and Employs ~46% of population (NSO Survey). but Suicide of farmers points to Crisis in sector. Technology Can help over-Come these Constraints

Constraints in agriculture sector

- low productivity ($\frac{1}{3}^{rd}$ of China)
- lack of investments (86% farmers are small and marginalized)
- Climate change (~50% area rainfed)
- price volatality. (tomato - 300/kg, Some time thrown on roads)
- youth not interested
  - lack of demographic advantage to agriculture

Candidates must not write on this margin

Role of Technology in overcoming these

(1) **Pre-harvest** → Micro-irrigation, technology (from Israel) can help in efficient utilization of fertilizers, pesticides & water
↳ increasing yield

→ **Biotechnology** → Bio-pesticides, bio-fertilizers, bio sensors can lead to climate smart agriculture, increasing yield
↳ climate change can decrease 10-15% yield

→ **Artificial intelligence** → can develop precision agriculture, by predicting time of sowing, harvesting, alert of pest attacks

(II) **Drones** – can help in monitoring crops, spraying fertilizers, crop insurance.

(III) **Post-harvest** – using block chain technology to manage inventory in warehouses

(IV) **Price discovery** → E-Nams → prevents market assymetry and distress selling

(V) **Grievance redressal** → with help of kisan call centres

Candidates must not write on this margin

(VI) Kushi UDAAN → for branding & Exporting horticultural products

(VII) Satellite technology → to monitor weather & field activities

Eg → CHAMAN, CAPE programmes

(VIII) DBT → to curb leakages in payments

Challenges remain → Small & medium farmers
↳ Lack of land consolidation
→ digital divide – specially in rural areas
- Farmers only 6% are aware of MSP before sowing season
→ feminisation of agriculture – but only 14% have land holding – limits use of technology

Way forward → Crop diversification – Horticulture, Beekeeping
→ promoting Animal husbandry
→ bridging digital divide
↳ Bharat net
→ reform in agriculture sector
↳ Marketing, MSP, etc

Thus, broad-based transformation with help of technology in agriculture is required to meet aspirations of Amrit Kaal.

Candidates must not write on this margin

Q.14 पर्यावरण एवं प्राकृतिक संसाधनों पर सिंचाई के प्रभाव का मूल्यांकन कीजिए, और कृषि में सिंचाई पद्धतियों की संधारणीयता और समता सुनिश्चित करने के लिए उपाय सुझाएँ। (250 शब्दों में उत्तर दीजिए) 15 अंक

Evaluate the impact of irrigation on the environment and natural resources, and suggest measures to ensure the sustainability and equity of irrigation practices in agriculture.
(Answer in 250 words) 15 Marks

Irrigation is lifeline of agriculture sector, when monsoon rain fails, it provides Enough water for growth of Crops

data → only 52% land is irrigated

Method → Canals in North India.
→ Tank irrigation in South India

Impact of Irrigation →
(I) on Environment → Extraction of ground-water leading to falling water table
↳ agriculture largest user of ground water

(II) Excess use has led to soil salinization & falling productivity.

(III) over use of water & fertilizers leading to Eutrophication & algal bloom

(IV) It releases Methane – a green house due to Submergence of rice fields

(V)

Candidates must not write on this margin

on Natural resources

(i) It is leading to desertification of land, due to over-irrigation

(ii) It has increased air pollution - due to release of methane gas

(iii) use of fertilizers due to availability of irrigation leading to ~~so~~ anti-microbial resistance on pests.

(iv) Cultivation of water guzzling crops in rainfed area.

Measures to Ensure sustainability & Equity

(i) promoting use of Sprinkler irrigation for efficiency.

(ii) Canals suffers from evaporation, so can install floating Solar panels on them to Ensure sustainability.

(iii) forming water-user association for using ~~river~~ irrigation water - it can lead to equity.

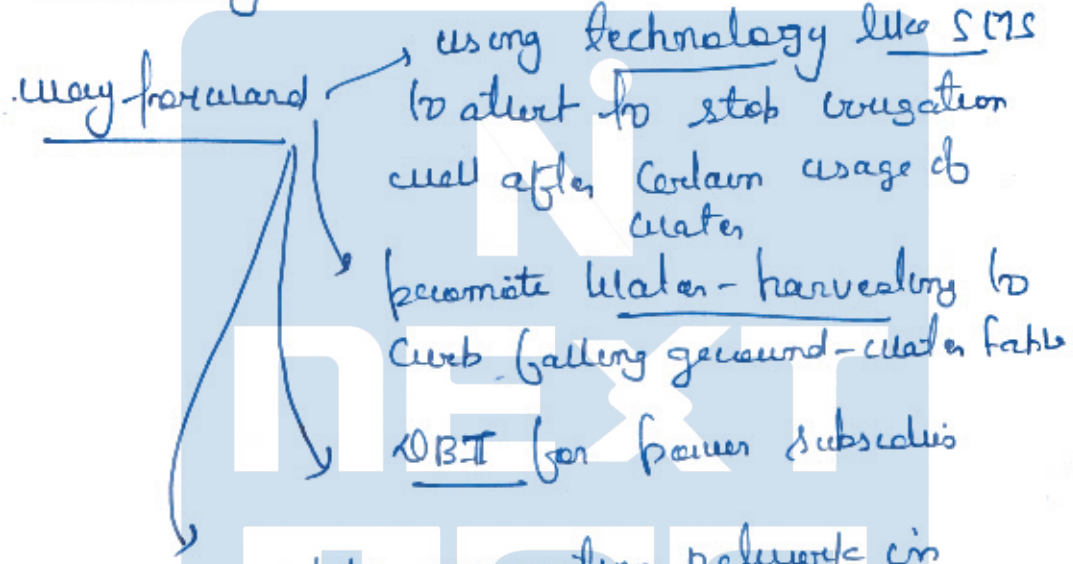
(iv) Instead of Subsidized irrigation power, DBT can be adopted, to curb

Candidates must not write on this margin

overuse and promote Sustainability

(v) using schemes like Pradhan Mantri Krishi Sinchayi yojna for Sustainability & Equity

(vi) Promoting Crops as per - agro-climatic Suitability.



Thus, to make agriculture remunerable, sustainability & Equity in irrigation is utmost important, along with diversification, marketing reforms, correct MSP regime, to make Agriculture future ready

Candidates must not write on this margin

Q.15 परमाणु ऊर्जा और अंतरिक्ष प्रौद्योगिकी के क्षेत्र में क्रमशः डॉ. होमी जहाँगीर भाभा और डॉ. विक्रम अंबालाल साराभाई के योगदान से भारत को रणनीतिक रूप से किस प्रकार लाभ हुआ? (250 शब्दों में उत्तर दीजिए) 15 अंक

How India benefitted strategically from the contributions of Dr. Homi Jehangir Bhabha and Dr. Vikram Ambalal Sarabhai in the fields of atomic energy and space technology respectively?
(Answer in 250 words) 15 Marks

India today is a responsible nuclear nation and a major space power. In these achievements great Scientist like Dr. H. J. Bhabha & Dr. V. Sarabhai had made immense contribution.

Contributions of Homi J Bhabha

(I) He spearheaded India's nuclear programme for both defence & Civilian use

(II) He clearly enunciated role of nuclear power to maintain strategic hegemony & counter security threats

(III) He played important role in forming Atomic Energy Commission

(IV) He represented India at international platforms for nuclear disarmament, safety and curbing threats

Candidates must not write on this margin

(v) He has given Nuclear 3-stage programme for development of nuclear energy

(vi) He envisioned thorium as fuel for nuclear technology development

(vii) His early demise in plane crash was a setback to Indias nuclear ambition

Dr. Vikram Sarabhai & role on Space Technology

(i) He spearheaded Department of Space in its infant stage and provided leadership

(ii) He helped in development of Rohini sounding rocket

(iii) Immense role in launching first satellite Aryabhatta

(iv) His efforts to develop Space programme of India resulted in setting rocket launches from Thumba space station

Candidates must not write on this margin

(v) He also played role in using reactor system for defence of India.

Following their legacy

(i) India today is a nuclear weapon state, achieved strategic deterrence by nuclear triad & using nuclear energy for fighting climate change

(ii) India's space sector has launched Mars Mission, Moon Mission Chandrayaan 3, Gaganyaan is in pipeline along with Mission to Sun (Aditya L1)

Need is to further augment nuclear & space capabilities to make India a global leader by 2047.

=

Candidates must not write on this margin

Q.16 जेनरेटिव एआई निकट भविष्य में नवाचार की सीमाओं को आगे बढ़ाने का सामर्थ्य रखता है, फिर भी इसका सामाजिक प्रभाव पर्याप्त चुनौतियाँ खड़ी करता है। सविस्तार उत्तर दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Genreative AI holds the potential to push the boundaries of innovation in the near future, yet its societal impact raises substantial challenges. Elaborate. (Answer in 250 words) 15 Marks

Generative AI is the use of Artificial intelligence for Creating original and new content based on Artificial neural network system

Eg → Chat GPT (Open AI)
→ BARD (Google)
→ DALLE.

Potential to push boundaries near future

(i) It can reduce the time and resources required to generate new content

(ii) It can transform the entertainment landscape
Eg New Songs.

(iii) It can help in research & academic work

(iv) It can help in generation of immense amount of information in few minutes

Candidates must not write on this margin

(v) It Can revolutionize social sphere
Ex used Generative AI for Justice

(vi) It Can help in boosting innovation by collating and analysing huge data on internet.

(vii) It Can give Creative solution to Everyday problems leading to breakthrough in Innovation.

Social impact and challenges

(i) It Can Create the issue of infringement and Copyright disputes
Ex making new song by collating 4 existing songs

(ii) Creating fake, propaganda video. Can lead to violence and law & order issue.

(iii) misuse technologies like deep fake & generative AI can lead to identity theft & misrepresentation

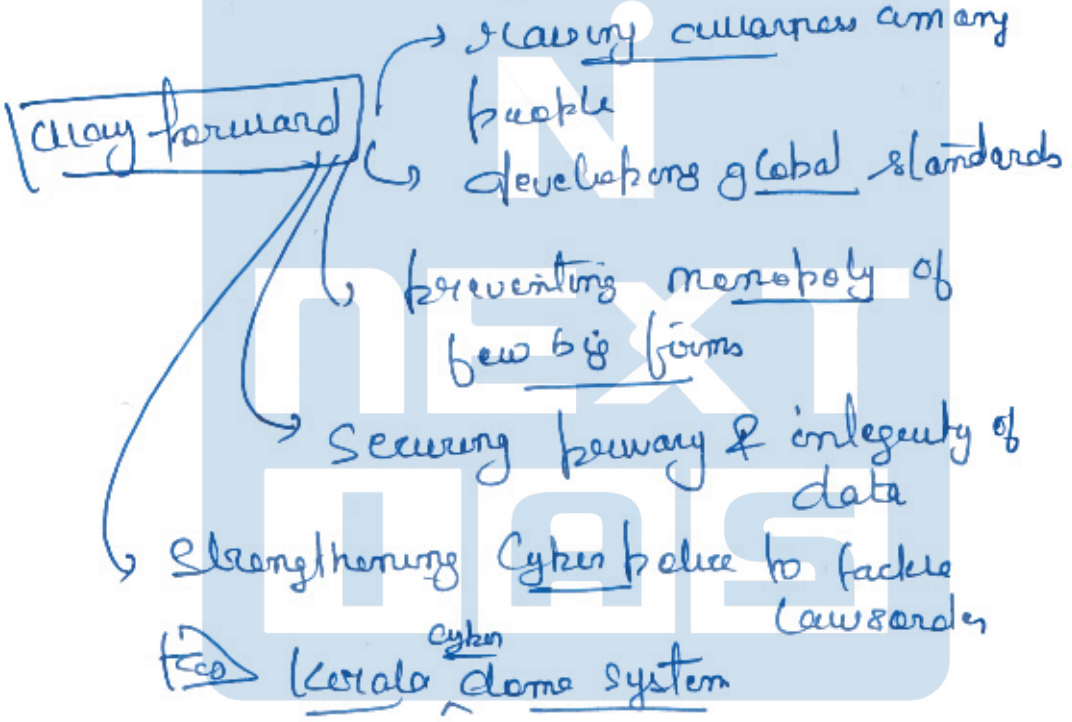
(iv) It is prone to be biased, as it depends on data, which might be biased

Candidates must not write on this margin

(v) It can lead to racial profiling and other unethical issues

(vi) It can be destructive socially
For ex: giving means to do suicide

(vii) misuse like cheating, copy, paste is aggravated by Generative AI.



Thus, Generative AI, as a potential technological breakthrough, is a double-edged sword, need is to develop regulation without curbing potential innovation.

Candidates must not write on this margin

Q.17 नवंबर 2022 में मिस्र में COP27 संयुक्त राष्ट्र जलवायु परिवर्तन सम्मेलन में लॉन्च किये गए "जलवायु के लिए मैंग्रोव गठबंधन" के उद्देश्य को स्पष्ट कीजिए। उष्णकटिबंधीय देशों की तटीय पारिस्थितिकी को बनाए रखने में मैंग्रोव के महत्त्व पर विस्तार से प्रकाश डालिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Explain the purpose of the "Mangrove Alliance for Climate" launched at the COP27 UN Climate Change Conference in Egypt in November 2022. Elaborate on the importance of mangroves in maintaining the coastal ecology of tropical nations. (Answer in 250 words) 15 Marks

COP is the highest decision making body in UNFCCC. It launched "Mangrove Alliance for climate" at Sharm AL Sheikh, in Egypt at 27th meeting.

Purpose of Mangrove Alliance for climate

(i) Ensure regeneration and protection of Mangrove Ecosystem

(ii) Effective steps to Curb diversion & degradation of Mangroves by 2030

(iii) Sharing of technology, Know-how, best practices to secure mangroves

(iv) using traditional knowledge

(v) using Mangroves to protect coastal Ecosystem and use it as a hedge against climate change.

Candidates must not write on this margin

Role of Mangroves in maintaining Coastal Ecology of tropical nations.

(i) It provides a breeding ground for vast biodiversity.
Eg Sundarban Mangroves.

(ii) It helps to filter out pollution by sedimentation.
It acts as kidney system of Earth

(iii) It helps in recharge of aquifers

(iv) It protects Coastal people and Ecology during cyclone & Tsunamis
Eg Sundarbans protected during Amphan in west Bengal

(v) It gives shelter to vulnerable & Exotic species.
Eg Cat fish.

(vi) It causes poaching & threat to wildlife
Eg Royal bengal tigers.

Candidates must not write on this margin

Threats → due to Encroachment
→ Industrialization – Leading to pollution
→ Urbanization – Exploitation of mangroves
→ over-harvesting of resources.
→ Introduction of Exotic species

way forward → increase fund to protect mangroves
→ remove Encroachments
→ Effective land use planning.
→ Community participation - for optimal use of resources.
→ implementing Mishti Scheme (Budget 2023-24)

Thus, mangroves has multiple benefits and lies at Cross Roads of marine and life on land. Global collaboration is need of hour to restore mangroves around the world

=

Candidates must not write on this margin

Q.18 आपदा प्रतिरोधी बुनियादी ढाँचे के लिए गठबंधन का गठन भारत में आपदा प्रबंधन दृष्टिकोण को और अधिक मजबूती प्रदान करता है। टिप्पणी कीजिए। भारत में आपदाओं से निपटने के लिए एक नई रणनीति की आवश्यकता के औचित्य सिद्ध कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

The Formation of the Coalition for Disaster Resilient Infrastructure brings more robustness to the Disaster Management approach in India. Comment and justify the need for a new strategy to tackle Disasters in India. (Answer in 250 words) 15 Marks

Coalition of Disaster resilient infrastructure (CDRI) launched by India to adopt technological design to make infra-structure resilient and curb loss of hard earned development gains.

CDRI - bringing robustness to disaster Management approach : Justification of new strategy

(i) Reactive to Pro active approach to tackle disasters.



(ii) It can help to mitigate loss of life by earthquag resilient buildings

(iii) It Can help Related Critical infrastructure like Power-grids, Schools, hospitals, etc.

Candidates must not write on this margin

(iv) It can minimize huge financial losses due to destruction of infrastructure as disaster has become Calender Event

(v) It can lead to inclusion of risk mitigation in development plans as per yokohama strategy

(vi) It can save more vulnerable people

(vii) It help in understanding risk better and strengthening risk governance as per Sendai framework

(viii) It can raise awareness about Climate change and increase Community participation, leading to robustness to disaster management approach as per 2nd ARC recommendations

(ix) It can embed resilience by Vulnerability mapping & zoning of risk to infrastructure by impending disasters

Candidates must not write on this margin

Short Comings → Lack of support of finance & technology from developed Countries

→ It has remained non-starter - not much work done.

Way forward → nudging developed Countries for finance & technology as per Paris deal

→ recognising Loss & damage fund as per COP27

→ using CSR & private sector

Thus, new strategy was needed to mitigate climate change impact and achieve SDG 9 & 10 of Resilient infrastructure and Equitable growth

Candidates must not write on this margin

Q.19 महत्त्वपूर्ण बुनियादी ढाँचे (क्रिटिकल इंफ्रास्ट्रक्चर) और प्रमुख निगमों को लक्षित करने वाले रैंसमवेयर हमलों में हुई हालिया वृद्धि ने मजबूत साइबर सुरक्षा उपायों और नीतियों की तत्काल आवश्यकता पर प्रकाश डाला है। इस प्रवृत्ति में योगदान देने वाले प्रमुख कारकों पर चर्चा करते हुए, विभिन्न क्षेत्रों पर इन हमलों के प्रभाव का विश्लेषण कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

The recent rise in ransomware attacks targeting critical infrastructure and major corporations has highlighted the urgent need for stronger cybersecurity measures and policies. Discussing the key factors contributing to this trend, analyze the impact of these attacks on various sectors.

(Answer in 250 words) 15 Marks

Ransomware is a malware, a kind of Cyber security threat, that leads to denial to Computer & network access and demand money (ransom) to grant access.

Report by CERT In → In 2022 ransomware attacks has increased by more than 60,000 as Compared to 2021.

→ Eg Recent Ransomware attack on AIIMS Servers: highlights growing threat

Key factor Contributing to this trend

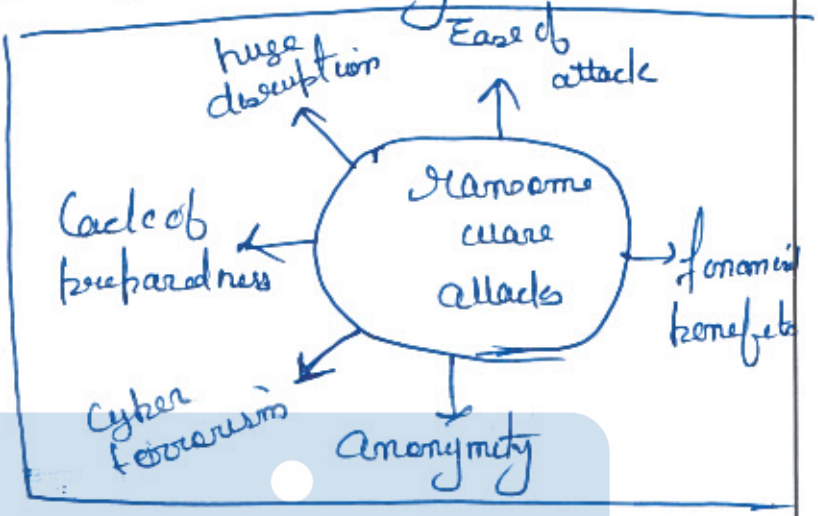
(i) Increased online users after Covid 19 and its impact

(ii) Lack of Cyber hygiene among people
Eg using outdated / cracked software.

Candidates must not write on this margin

(iii) Lack of digital literacy

(iv) Cyber-attacks are used by Countries as form of new ground of warfare



(Eg) alleged Chinese State sponsored attackers targeting power grids in India

(v) Lack of Safety audits and Cyber Security checks makes them Easy targets

(Eg) AIIMS Cyber attack investigation was not updated (Committee report)

(vi) dependent on Imported hardware.
↳ increases Vulnerability.

(vii) Impact on various sectors

(i) Critical infrastructure attacks leads to disruption of basic services like power, Communication, health, attacks

(ii) attacks on Economic sector like business leads to Losses (Eg) $4bn loss in 2020

Candidates must not write on this margin

(III) Social sector → It can lead to disturbing social fabric, by communities fighting one another due to mistrust.

(IV) Defence → It can jeopardize defence of country. stealing defence secrets

(V) It can impact nuclear deterrence of country
↳ attack on Kundankulam nuclear plants

(VI) It can impact global image
↳ unable to curb cyber threats

Way forward → awareness → digital Saksharta Abhiyan

→ Cyber hygience - Botnet cleaning centre

→ Strengthening CERT In to protect critical infrastructure

→ Global Cooperation

Thus Cyber Security holds immense importance in wake of government becoming digital India, Knowledge based Economy, m-Governance, etc

Candidates must not write on this margin

Q.20 सीमा सुरक्षा के संदर्भ में, तटीय और स्थलीय सीमाओं के प्रभावी और कुशल प्रबंधन को सुनिश्चित करने के लिए विभिन्न सुरक्षा एजेंसियों के बीच सहयोग और समन्वय को कैसे बेहतर बनाया जा सकता है?

(250 शब्दों में उत्तर दीजिए) 15 अंक

In the context of border security, how can cooperation and coordination between different security agencies be improved to ensure effective and efficient management of coastal and terrestrial borders?

(Answer in 250 words) 15 Marks

India huge landmass & maritime extend necessitates Cooperation between various agencies to protect borders from all kinds of threats.

Current issues → Lack of Coordination
→ Lack of funds, functionaries
→ delay in sharing intelligence
→ Multiplicity of agencies
→ diverse border - Coast, deserts, glaciers, dense forest, etc.

Always to enhancing Coordination between various security agencies for border & Coastal security

① fast information collection, processing, dissemination among various agencies

② Strengthening NATGRID

Candidates must not write on this margin

(II) Planning, implementing & allocating resources, financial & manpower by taking inputs from all services

(III) Building network to share & bring IB, NSA, NSC and other intelligence network on a same platform.

(IV) Building a national security doctrine strategy clearly delineating roles & responsibility, curbing overlap and achieving coordination among agencies

(V) Using the post of Gen. Chief of defence Services (CDS) to bring leadership of all agencies on one table

(VI) developing integrated theatre Command can help in Coordination

(VII) Building agile and Effective units by Coordinating all.

Candidates must not write on this margin

Case study: Developing Single Command for an strategic theatre and topography just like Single Command on western sector of Chinese army as opposed to BSF, SSF, on Indian Side. Can help in achieving Coordination

Thus, to tackle Challenges of two front war, Good creation among various agencies is need of the hour

Candidates must not write on this margin

Space for Rough Work

NEXT IAS