Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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(To be filled by candidate)

Name of Candidate : Jigyasu Agrawal

NEXT IAS Roll No.: MT23FLTRA004 Date of Examination : 20/08/2023

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☑

Test Code : TC003 Program : FLT ☐ FLT+ ☐

MAIN TEST SERIES 2023
(FULL LENGTH TEST-3)

GENERAL INSTRUCTIONS

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.....

SUBJECT/PAPER
GENERAL STUDIES

Invigilator's Sign. : .....

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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

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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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.
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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 a general term for tax imposed by government on any sector which sees 'windfall gains' (disproportionate gains) due to externalities

(ex) Windfall gain by Oil PSUs due to ~~fall~~/rise in global oil prices. was taxed by GoI.

Can effectively redistribute wealth and promote economic equality

① Increase tax revenue of government (present tax:GDP is low @ ~ 10%)

② Can be spent on welfare of vulnerable

(ex) Health expenditure

③ Reduce inequality (very high Oxfam report) by enhancing expenditure on transfers.

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④ Can be spent on Human capital develop-ment → enhanced skills → better livelihood

(ex) MPI reduced to 13% recently.

But has limitations

① Wasteful expenditure like freebies.

② Revenue expenditure > Capital expenditure (less productive)

③ Can promote populism → loan waivers → Poor repayment culture → Rise in NPAs.

④ Also ~~disinte~~ disincentivise productive use of profits by industries

(ex) Oil PSUs complain they can use revenue for oil exploration.

There are certain merits of utilizing windfall tax to achieve SDG 10, but must be used rationally with stakeholder consultation.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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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

RBI Act, 1934 was amended to provide for Monetary policy committee with inflation target as mandate

MPC regime

Composition	Target
RBI Governor : Chairman 04 governors : 2 member. 3 members nominated by Government	2 % ≤ CPI ≤ 6 %. ↓ else report to government

Perceived successes

① Central Bank sole focus on inflation, while growth to be achieved by fiscal policy.

② Better coordination between monetary & fiscal policy.

③ WPI under control (mostly negative)

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④ Successful in controlling demand side inflation, while providing sufficient liquidity during Covid crisis (V shaped recovery)

But challenges

① Supply side inflation challenges

(ex) Covid crisis, supply chain disruption, Russia Ukraine war.

② Imported inflation → due to rise in oil prices, weakening of Rupee.

③ High food inflation due to heatwave, climate change : (ex) soaring tomato prices.

→ Constantly CPI has been above 5% breaching 6% limit recently.

Thus the need is to use montary policy in tandem with fiscal and supply chain resilience to control inflation.

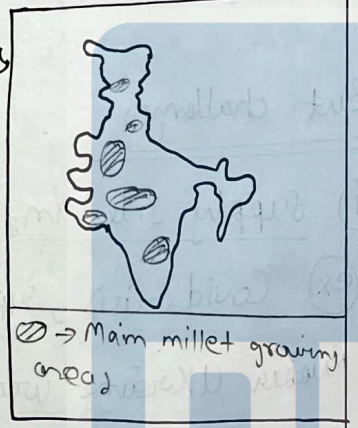
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Q.3 भारत में सतत् कृषि को बढ़ावा देने और खाद्य सुरक्षा में सुधार के लिए मोटे अनाज उत्पादन की क्षमता का आकलन कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

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

Millets are coarse grain crops with substantial climatic, nutritional and health benifits. India is one of largest producer of millets (15MT).



⊘ → Main millet growing area

Potential in promoting sustainable agriculture

① Drought resistant crops → highly water efficient.

② Help in nutrient recycling (consume less NPK).

③ Pest resistant → help rationalise use of pesticides.

④ Rising prices with increasing health conciousness (almost 7% yoy rise in last 5 years)

Candidates must not write on this margin

Potential for food security

① Low glycemic index → good for diabetic patients.

② Grow in rainfed areas, small marginal fields → income and nutritional security

③ Can complement rice and wheat for providing complex carbohydrates, fiber and protein.

But challenges exist

① Very low share in food crops, only 15MT out of 280 MT. (<10% area)

② Low awareness → low consumption.

③ Difficult to process, cook → low popularity

④ Poor ~~crop~~ seed research, hyv seeds are less (poor crop diversity).

In this respect, Budget has declared them Sri Anna. Government has taken steps like RKVY, Millet mission to diversify crops.

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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 is aimed at providing piped drinking water to all rural households, by 2024.

Objectives
- potable drinking water
- water security
- Achieve SDG 6
- Quantity: 55 lpd.

Significance

① End regional disparity due to hydrological & meterological imbalance

(ex) North → flood prone; West & South → drought prone
East

② Health benifits → reduce water borne disease
→ reduce diseases due to water stress.

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③ Social benifit → Reduce burden on women due to fetching water.

④ Promote water conservation at local level: (Harvesting structures).

⑤ Economic benifit: improved productivity & female labor force participation.

Impediments: Recent report suggest slow progress due to:

① Ground water extraction challenges → falling GW table (ex Bundelkhand area)

② Supply chain disruption: steel, cement, equipments due to Russia Ukraine war.

③ Rising cost estimates: due to inflation

④ Unavailability of skilled manpower for ground water exploration.

Challenges can be resolved by implementing ATAL Bhujal Yojana, Jal Shakti and Amrit Sarovar mission alongside

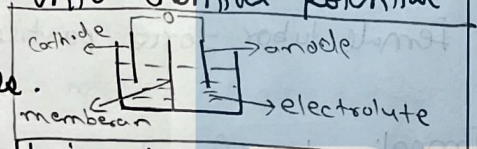
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Q.5 बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते हैं? इसके अनुप्रयोगों पर चर्चा कीजिए और यह भारत के ऊर्जा कार्यक्रम में किस प्रकार क्रांतिकारी बदलाव ला सकता है। (150 शब्दों में उत्तर दीजिए) 10 अंक

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 systems imply storing of electrical energy by converting them into chemical potential using batteries.



(ex) Li ion batteries, Ni-Cd battery

Application

(1) Storing renewable energy from solar, wind etc.

(2) Reducing intermittency, variability and grid integration challenges.

(3) Providing stable energy supply to grid.

(4) Reducing energy disparity → energy security in far flung areas.

Candidates must not write on this margin

(5) Electric vehicles : battery is their mainstay. {Battery swap policy}

(6) Electronic industry : Mobile, laptops etc.

Can revolutionize energy program

(1) Provide storage & supply solutions for renewable → enhance rooftop solar programme.

(2) Can help store hydrogen based energy in hydrogen fuel cells → success of India's Green hydrogen mission.

(3) Reduce dependence on fossil fuels → energy security.

To fully utilize, we need to sort out challenges of REE & Li availability, battery manufacturing, technology & skill shortage.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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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

Gaganyaan is the future manned space mission to be launched by ISRO.

Developments until now

① Development and test of GSLV MK III rocket.

② Testing of Reusable vehicle and Reentry experiment → for reentry into the atmosphere

③ Testing of module to sustain humans in space

④ Training of astronauts has begun. (Vyomnaut)

⑤ Development of AI bot for testing.

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Challenges

① First such mission by India, with indigeneously developed technology

② Threat of loss of human life (Apollo 13 mission)

③ Re-entry challenge → high temperature may lead to fire hazard.

Possible benifits for society

① Sense of national pride → unity of the nation.

② Future space missions, extraplanetary human civilisation.

③ space mining can be possible (Asteroid mining) → enhanced natural resource base)

④ New scientific research → development of new technology, social benifits

Gaganyaan can be stepping stone for Indian space revolution

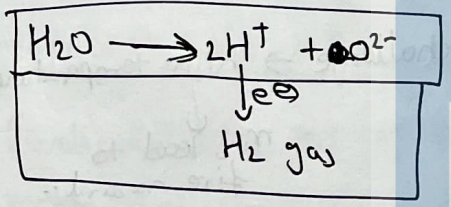
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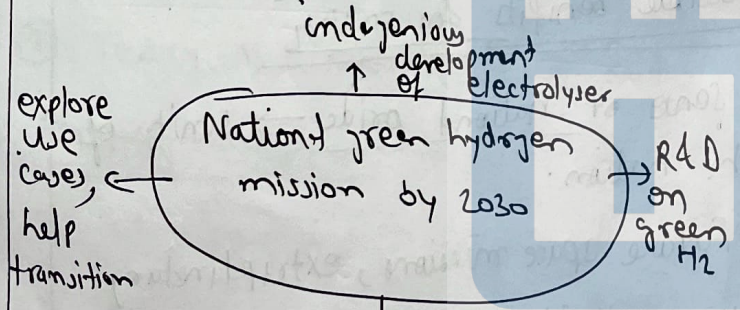
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Q.7 "जलवायु परिवर्तन और प्रदूषण से निपटने की हमारी खोज में हरित हाइड्रोजन एक सरल और जादुई समाधान हो सकता है"। भारत के राष्ट्रीय हरित हाइड्रोजन मिशन के आलोक में कथन का आलोचनात्मक विश्लेषण कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

"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 is generated in fuel cell where electricity is provided by renewable sources.





Silver bullet to tackle climate change and pollution

① Transform mobility → from fossil fuel to H_2 based.

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② Reduce green house gas emission from vehicles (only H_2O as residue)

③ Greening of hard to abate sector
(ex) Green steel.

④ Store renewable energy → H_2 based fuel cells

⑤ Reduce SO_x, NO_x emissions from burning fossil fuels (coal, hydrocarbons)

Limitations

① Other sources of emissions (ex) CH_4 from Agriculture

② Life cycle emissions from H_2 electrolyser

③ Dependency on imports (ex) electrolyser, REE, Li, critical minerals

④ Nascent stage of technological development

⑤ Difficulty in transition → industrial inertia.

Along with Green H_2, India should also target Li ion battery, electric vehicles, nuclear energy to tackle climate change.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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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

Recent disaster in Joshimath involved land sinking, development of cracks in ground, roads & houses leading to displacement of people.

Reasons & key lessons

Disaster management & environmental conservation

Reason	lesson
① Overloaded strata → multistory buildings → violation of building code	→ sustainable urbanisation → wiry building & seismic codes
② Unsustainable tourism → Unabated construction	→ tourism as per carrying capacity of the region & ecology.

Candidates must not write on this margin

③ Poor waste management → water blocking, seepage → loosened soil	Implementation of solid, plastic, municipal waste management rules.
④ Heavy infrastructure project creation ex Tunnelling ex Chardham Highway	Proper EIA & SIA along with mitigation measures
⑤ Difficulty in rehabilitation, over dependence on tourism for livelihood	NDMA guideline on rehabilitation, diversifying economic activities

Along with these, recommendation of Mishra committe, Ravi Chopra panel and IIT roorkee report need to be implemented.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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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

Khalistan movement is a separatist movement in Punjab, supported by cross border & international support, which fuelled in 1970s & 80s.

In recent times, rise in radical trends: Developments & Reasons

① Rise of extremist religious ideology in Punjab
   (ex) extremism rallies leading to violence

② Attack on Indian embassies in Canada & UK by Khalistani elements

③ Emergence of new leadership in movement (ex) disillusioned youngsters

④ Rise of regionalism based on

Candidates must not write on this margin

language: Anti Hindi campaign

⑤ Fuelled by cross border drug peddling, trafficking, support of state actors.

⑥ Economic discontentment: Agriculture distress.

Measures to handle

4D strategy

① Defence → Border security need to be enhanced
→ stop drug trafficking
→ empowerment of state police with modernisation.

② Development: Socio economic development, raising farm & non farm incomes is needed.

③ Dialogue: With pressure groups, political parties to resolve issues of regionalism

④ Diplomacy: Strict action demand against foreign support.

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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

There has been rise in incidents related to drug trafficking, drone attacks on security establishm -ents along the Punjab & J&K border with Pakistan.

Factors contributing to challenges by drones to India's border security

① Anonymity : Lack of registration markings and remote operation makes it difficult to find source.

② Ease of operation → remotely operated
- Can be used as explosives
- Can deliver drugs
- difficult to spot

Candidates must not write on this margin

③ Use by non state actors : difficult to put responsibility.

④ Used to gather intellijence, detriment -al for national security.

⑤ Create legal, jurisdictional issues.

Suggestions to tackle

① Hard offensive measures
→ counter drone technology
→ especially trained falcons

② Improve border technology
→ sensor based monitoring
→ tactical air defense system
→ cyber security jammers

③ Enhance capacity of border security forces → skill development

④ Collaboration with countries like Israel.

⑤ Developing clear jurisdictional guidelines
Drones are emerging threat, need strong measures to deal with them.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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

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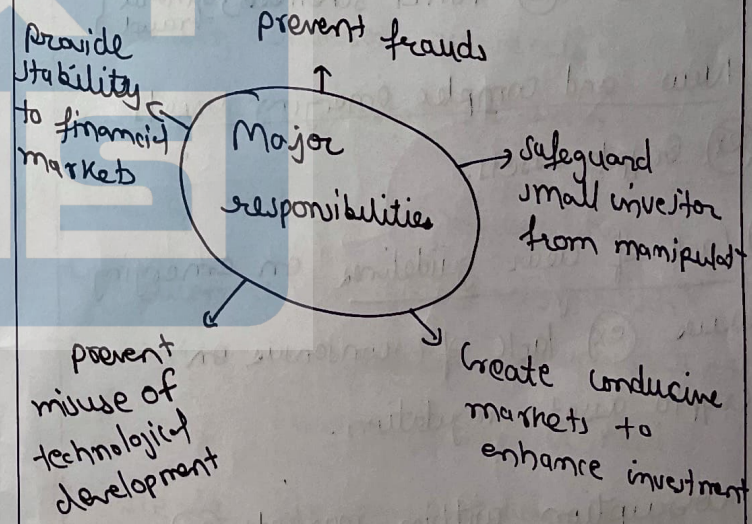
Q.12 भारतीय प्रतिभूति एवं विनिमय बोर्ड (सेबी) शेयर बाजार के नियमन और निवेशकों के हितों की सुरक्षा में महत्त्वपूर्ण भूमिका निभाता है। दिये गए कथन के आलोक में, सेबी के समक्ष आने वाली चुनौतियों पर प्रकाश डालिए और इस संबंध में सुधारों का सुझाव दीजिये।

(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 a statutory body with a mandate to regulate the capital and money market, provide level playing field and safeguard interest of investors.



Candidates must not write on this margin

SEBI is facing the following challenges

① Technological developments like AI, Big data → used for manipulations

ex Algorithmic trading

② Low financial awareness amongst investors & (ex Ponzi schemes, Sahara fraud)

③ New and complex emerging assets

ex Crypto assets.

④ Lack of clear guidelines on emerging issues ex lack of consensus on crypto asset regulations.

⑤ Corruption within markets ex Colocation fraud in NSE.

⑥ Lack of sufficient manpower, infrastru-

Candidates must not write on this margin

-ctur & resources.

Reforms needed in this regard

① Enhancing manpower, resources of SEBI for optimum regulations.

② Use of emerging technology

ex V Kamakoti committee suggested use of AI for regulation.

③ Creating investor awareness

ex SEBI's investor charter.

④ Use of modern techniques like regulation switch (automated switch) to control manipulation and speculation

Further, there is need to create financial literacy, deepen bond market for efficient mobilisation of resources.

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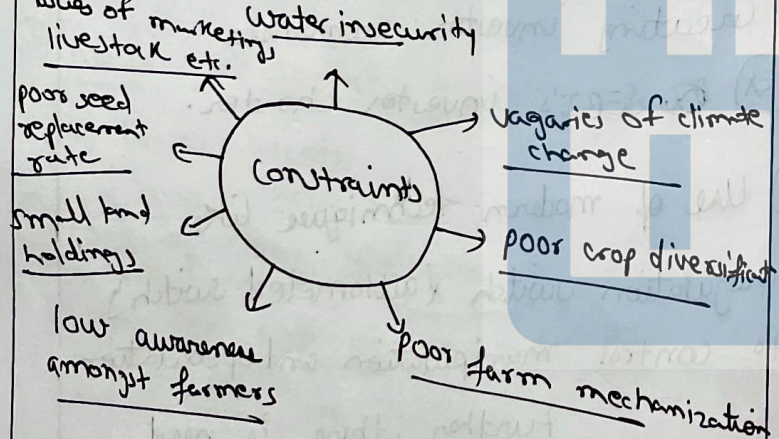
Q.13 भारतीय अर्थव्यवस्था में एक प्रमुख योगदानकर्ता होने के बावजूद, कृषि क्षेत्र कई बाधाओं से ग्रस्त है जो इसकी वृद्धि और विकास में बाधा डालते हैं। इन बाधाओं पर काबू पाने में प्रौद्योगिकी की भूमिका पर चर्चा कीजिए।

(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

Agriculture sector contributes 17% to GDP and employs almost 45% of labor force. Yet its growth has been stagnant, due to various constraints:



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Role of technology

1. Micro irrigation → enhance water security & efficiency
   [Dalwai panel: 40% saving, 50% rise in income]
2. Lab grown varities → Drought resistant
   → Pest resistant
   → less nutrient intensive
   (ex) GM crops, Bt cotton.
3. Soil health card: clubbed with sensors, AI can provide real-time information on resource.
4. Nano Urea → to enhance effectiveness
   → reduce wastage.
5. Robotic, Automated mechanization
   → can lead to precision farming
   (ex) hydroponics.
6. Use of e-technology → extension services e-Kisan
   → e-NAM → marketing intelligence
   → land record digitization → Svamitva scheme

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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⑦ Bovine and allied research: better breeds. (ex) Mission Kamdhenu.

But limitations are there

① Low awareness in farmers

② Small & Marginal (85%) → low capacity to invest

③ Low investment rate (15% of Agri GDP only).

④ Wear and tear → poor maintenance service.

⑤ Lack of skilled resource.

In this respect following steps have been taken.

① Agri stack by NITI aayog

② RKVY - Raftaar: Comprehensive mission for mechanization, crop diversification

③ Krishi Vijyan Kendra, e-Kisan app for extension

④ Further use of drones, agri startups, AI, nanotech should be promoted.

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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

Although India's 45% of Net sown Area is covered by irrigation, yet its misuse has created certain impacts.

Negative impact:

① Soil health: Flooding leads to leaching of essential ~~resou~~ nutrients

② Increase in soil salinity due to over flooding (ex) Punjab, Haryana.

③ Water stress: due to over exploitation of ground water (90% used by agriculture)

④ Loss of soil biodiversity → due to lack of oxygen

⑤ River & aquifer pollution: due to outflow of pesticide with

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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Some positive impacts

① Enhanced soil moisture → better crop & agroforestry.

② Equitable availability of water in drought prone areas.

Measures to ensure sustainability and equity

① Micro irrigation → enhance water availability
(Dalwai panel) → improve use efficiency.

② Watershed development → enhance ground water recharge
(ex) Ralegaon siddhi village

③ Use of traditional water harvesting structures & irrigation techniques
(ex) Bamboo irrigation North east.

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④ Interlinking of rivers on limited scale → to enhance irrigation equity.

⑤ Improved farming techniques
(ex) System of rice intensification to prevent flooding of fields

⑥ Improved crop varities
(ex) Drought resistant, low water intensive crops.

⑦ Extension services to create awareness amongst farmers.

Jal Shakti Mission, Amrit Sarovar Mission, PM Krishi Sinchayi Yojana, Atal Bhujal Mission etc have been launched to achieve sustainable and equitable irrigation.

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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

Dr. H.J. Bhabha was the father of nuclear programme (3 stage) in India, while Dr. Sarabhai was monument in foundation of ISRO.

Contribution of Dr. Bhabha

① Designed India's 3 stage nuclear programme

Natural uranium → Plutonium breeder reactor → Thorium based thermal reactor

② Establishe Atomic research centre (later became BARC)

③ Contributed to field of particle research, basic physics etc.

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Strategic benifits

① Pioneer in atomic energy → to enhance energy security → self sufficient in future (Thorium reserves).

② Led to furthe development of nuclear weapons → strategic national security of country.

③ Formulated foundation for advanced research leading to atomic irradiation, fundamental physics etc.

Contribution of Dr. Sarabhai

① Laid foundation of space research, pioneered Indian Space Research Organisation

② Contributed to astrophysics research & development of optical remote sensing

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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Strategic benifits

① India became self sufficient in launching satellites.

② Communication satellites → led to enhanced agriculture, connectivity, telecommunication development.

③ ISRO is now sending inter planetary missions, providing remote sensing, positioning services.

④ Earning forex through launch of foreign satellites.

Thus both scientists had immense contributions in laying foundation of future researches in advanced fields.

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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 based on neural networks which can produce results not only on basis of pre-trained knowledge, but also from experience gained by user interaction

ex ChatGPT, AI chatbots.

Potential for innovation

① Solve complex problems of matematics, coding etc → further research.

② Combined with other technologies like Robotics, Big data → cyber physical system research

③ Can aid biotechnology research

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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with creative gene editing.
(ex) Genetically modified organisms.

(4) Social science research: provide innov-ative view points, suggestions for complex social problems (ex) Sustainable urbanisation

(5) Can aid forensic research, security sciences, border security research.
(ex) Quantum sensors developed using AI.

Societal impact and challenges

(1) Job losses: due to automation
(ex) Consultancy, researchers etc.

(2) Potential of misuse (ex) by anti social, terrorists etc.

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(3) AI biases: based on stereotypes can lead to discrimination.

(4) Algorithmic black box → we see results, not process, which may lead to harm

(5) Super intelligent, concious AI may harm humans. (ex) AI led warfare.

Thus certain steps are needed:

(1) Ethics in AI (ex) Asilomar conference principles.

(2) Inclusive AI: without biases.

(3) Indegenous AI: to resolve problems of society.

(4) Goal by humans, AI only means.

(5) Skill development & social security enhancement [Universal Basic Income].

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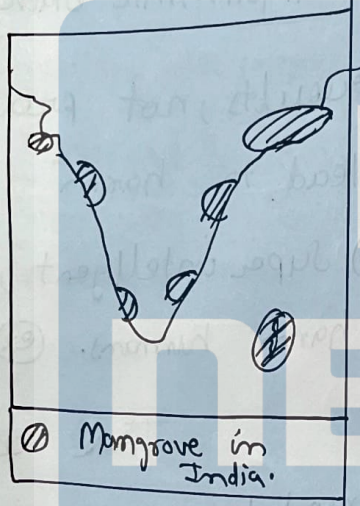
Q.17 नवंबर 2022 में मिस्र में COP27 संयुक्त राष्ट्र जलवायु परिवर्तन सम्मेलन में लॉन्च किये गए "जलवायु के लिए मैंग्रोव गठबंधन" के उद्देश्य को स्पष्ट कीजिए। उष्णकटिबंधीय देशों की तटीय पारिस्थितिकी को बनाए रखने में मैंग्रोव के महत्त्व पर विस्तार से प्रकाश डालिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

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

Mangroves are salt water resistant plants/ trees which grow in brackish water dominated soils.

(ex) Deltas.

(ex) Sundari trees.



Mangrove in India.

Mangrove Alliance for Climate

① Alliance of tropical countries to safeguard mangrove ecosystems.

② For sustainable use of resources from mangroves.

③ Prevent exploitation and damage due to natural climate events and anthropogenic activities

④ Create institutional frame work and mobilize finance for protection of mangrove & the species.

India recently launched the MISHTI mission to comply with the alliance.

Importance of mangroves

① Habitat of unique biodiversity

(ex) Bengal tiger in Sundarban.

② Prevent coastal erosion : bind soil.

③ Store blue carbon → prevent global warming

④ Protection against extreme events like cyclones, coastal flooding.

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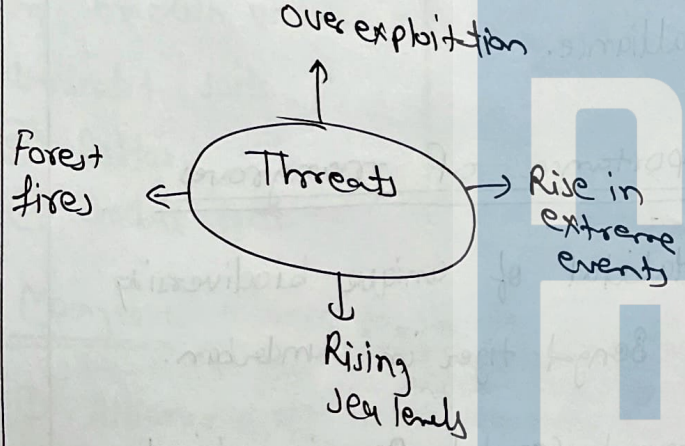
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⑤ Ecosystem products like fishes, shrimps, honey, fuelwood etc.

⑥ Regulation of soil and water

salinity → reduce salinity of ground water.



To achieve SDG 13, mangroves are of special importance hence need is

- Structural
  - (ex) Afforestation
  - (ex) Groynes
- non structural measures
  - (ex) Coastal Regulation zone
  - (ex) Ramsar wetland

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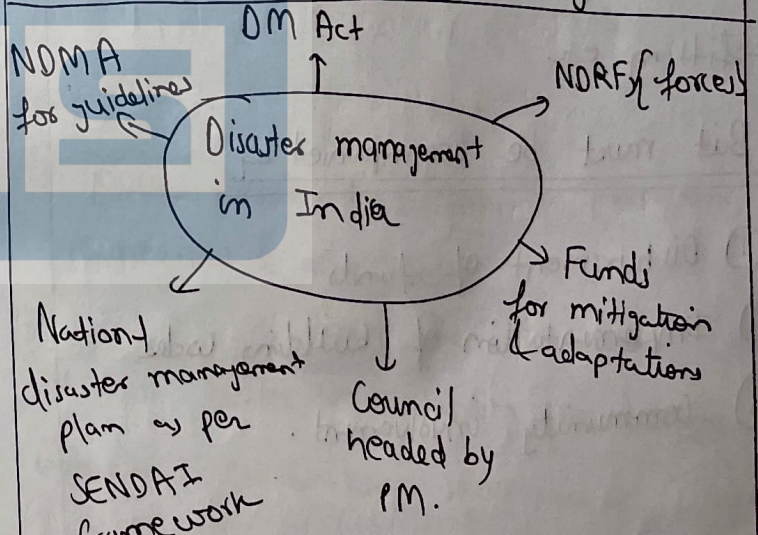
Q.18 आपदा प्रतिरोधी बुनियादी ढाँचे के लिए गठबंधन का गठन भारत में आपदा प्रबंधन दृष्टिकोण को और अधिक मजबूती प्रदान करता है। टिप्पणी कीजिए। भारत में आपदाओं से निपटने के लिए एक नई रणनीति की आवश्यकता के औचित्य सिद्ध कीजिए।

(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 was pioneered by PM Modi under the degis of UNFCCC negotiations. It aims to promote infra-structure which can resist enhanced disasters due to climate change.



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CDRI brings more robustness

① Mobilizes funding for disaster resilient infrastructure

② Helps in knowledge sharing, best practices for DRI.

③ Research on civil engineering techniques for infrastructure creation.

④ International collaboration for practices, methods for creation, retro-fitting etc.

But must be accompanied by

① Disbursement of funds

② Implementation of building codes

③ Community involvement.

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Need for new strategy to tackle Disasters

① Rise in frequency & intensity of disasters (AR6 IPCC)

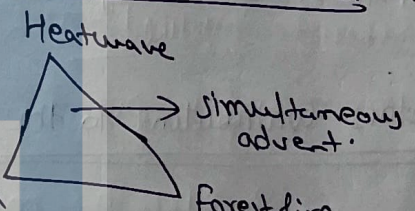
ex Himachal pradesh floods

② Changing nature of disasters with enhanced vulnerability

ex Delhi floods

③ Rise of complex & combined events

ex



④ Focus from mitigation to prevention, preparedness & adaptation.

⑤ for this the need is for better understanding, prediction, interagency coordination, structural & non structural measures, technology integration etc.

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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

In recent times there has been a spurt in ransomware attacks

(ex) Critical : AIIMS, Cowin app infrastructure attacks

(ex) Corporations: Dr Reddy's lab attack.

Key factors contributing to the trend

① Poor cyber security apparatus in major institutions

② Lack of air gapping of critical infrastructure.

③ Rise in sophistication of attacks due to advancement in technology

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④ Enhanced digitisation in wake of Covid disruption → enhanced vulnerability.

⑤ Reports suggesting backing of non state actors by national governments

⑥ Non implementation of Data-Privacy law

⑦ Poor awareness, human resource related to cyber security.

Impact of these attacks

① Violation of privacy of individuals fundamental Right to privacy.

② Disruption of key functions

(ex) AIIMS was not able to function properly.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM

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③ Disruption of key services

ex Mumbai's electricity supply was affected.

④ Violation of trade secrets:

Dr Reddy's lab's pharmaceutical research was leaked.

⑤ Threat to National security

ex Terrorist misused Internet of Things in Europe.

To curb the menance strong policy measures are needed

① New cyber security policy based on Subhash Rai Committee recommendation

② Use of AI, emerging tech for offence and defence purpose.

③ Strengthen CERT-in, sectoral CERTs

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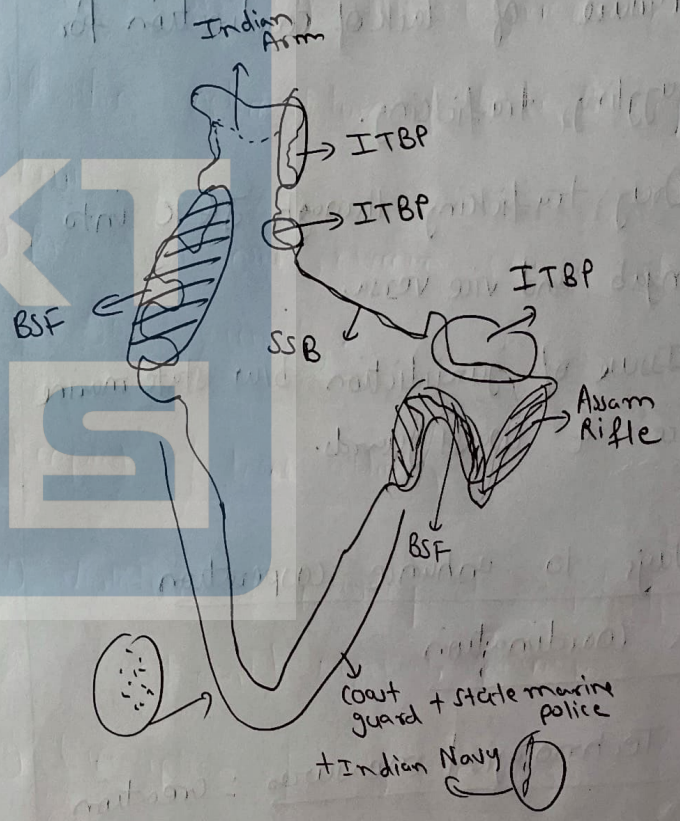
Q.20 सीमा सुरक्षा के संदर्भ में, तटीय और स्थलीय सीमाओं के प्रभावी और कुशल प्रबंधन को सुनिश्चित करने के लिए विभिन्न सुरक्षा एजेंसियों के बीच सहयोग और समन्वय को कैसे बेहतर बनाया जा सकता है?

(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's border security is managed by different agencies.



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Issues due to lack of coordination

① Multiplicity of agencies on same borders (ex) SSB & ITBP & Army on northern borders.

② Misuse of lack of coordination for smuggling, trafficking.

③ Drug trafficking through J&K into Punjab and vice versa.

④ Issue of jurisdiction b/w state marine police & coast guards.

Ways to enhance cooperation & coordination

① Technological measures : creation of networks, secure communication channels, platforms for knowledge sharing.

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② Human Resource measures : Regular meeting, deputations across services

③ Policy measures : clear guidelines on jurisdiction with standard operating procedures for crisis situations

④ A mechanism like COS can be explored with common nodal point of contact.

⑤ Joint exercises, training of services together.

⑥ Implementation of Kargil Review Committee, Shekatkar committee of one border one force.

Using these, with better coordination and technology, borders can be made more secure.

Next IAS ID: MT23FLTRA004, TC003, 22-08-2023 06:07 PM