INSTA SECURE SYNOPSIS
MAINS MISSION - 2022

GS-III

SEPTEMBER 2021
NOTE: Please remember that following ‘answers’ are NOT ‘model answers’. They are NOT synopsis too if we go by definition of the term. What we are providing is content that both meets demand of the question and at the same time gives you extra points in the form of background information.

Table of Contents
Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.......................................................... 8

What is V-Shaped Recovery? Do the good tidings in Gross Domestic Product (GDP) data forecast a V-shaped recovery for the Indian economy? Critically examine. (250 words) ..................................... 8

What are the major objectives and features of National Digital Communications Policy? Government intervention has become an absolute necessity to keep the telecom sector viable for the operators and affordable for common man. Comment. (250 words) ........................................ 11

e-RUPI has the potential to achieve financial inclusion and bridge digital divide in India. Write about the benefits of e-RUPI and analyse if it is the first step towards the adoption of digital currency in India. (250 words, 15 marks) ........................................................................... 15

Critically Analyse India’s performance so far to achieve its Paris obligations. What policy and behavioural changes are further required to stay on course to achieve its targets by 2030? (250 words, 15 marks) ...................................................................................... 17

FDI might be one of the important sources and forces behind the economic development of India but it is not the sole solution for its socio-economic issues. Comment. (250 words, 15 marks) .... 19

Owing to the technological complexity and anonymity associated with social media, it has become a safe haven for cybercrimes. Critically analyse to what extent the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 will reduce crimes on social media? (250 words, 15 marks) ........................................................................................................ 22

Critically examine the newly launched Production Linked Incentive (PLI) scheme in imparting a competitive edge to the Indian textile sector. (250 words) ................................................................. 23
RBI's Account Aggregator framework is an encouraging stimulus for easing of credit flow in the economy, especially for the MSME sector. Comment. (250 words)......................................................... 25

Achieving higher quality and creating consumer demand are the two major concerns of organic farming in India. Comment on the potential of organic farming in the north eastern India. (250 words)......................................................................................... 28

With the World Bank’s Ease of Doing Business index being scrapped, India must not lose the progress made so far and further try to improve the business climate in the economy. Comment. (250 words) ...................................................................................................................................................... 29

Examine the factors for the high rate of inflation in the Indian economy in the recent months. Suggest measures to keep the inflation within the Reserve Bank of India (RBI)'s tolerance band. (250 words) ............................................................................................................................................... 32

RBI's Account Aggregator framework is an encouraging stimulus for easing of credit flow in the economy, especially for the MSME sector. Comment (150 words, 10 marks).......................... 35

In the current unemployment scenario, a long-term strategy to impart vocational skills will facilitate increase in income of labour as well as generating formal employment. Elaborate. (250 words)............................................................................................................................................................ 36

Inclusive growth and issues arising from it.......................................................................................................................... 39

FDI might be one of the important sources and forces behind the economic development of India but it is not the sole solution for its socio-economic issues. Comment. (250 words).......................... 39

What do you understand by inclusive growth? What are the major impediments to inclusive growth and how can they be overcome in the current scenario? Explain. (250 words)......................... 42

For achieving a welfare state, it is a constitutional obligation to uplift the weaker sections of the society. In the light of the statement, is caste census vital for taking necessary steps to achieve social equity? Critically analyse. (250 words).................................................................................................................................................................................. 45

The ambiguity around the rights of gig workers and the responsibilities of platforms that allows businesses to treat workers as employees in terms of the control, but without the cost of hiring and social security, needs immediate addressing. Analyse. (250 words)................................................................. 47

Investment models......................................................................................................................................................... 50

Enumerate the recent structural reforms taken to alleviate the problems of the telecom sector in India. Is 100% foreign direct investment (FDI) through automatic route in the telecom sector a step in the right direction? Comment. (250 words)......................................................................................................................................................... 50

Government Budgeting .................................................................................................................................................. 52

Enumerate the steps taken so far to expedite and enable resolution of NPAs in India. Critically analyse the potential of National Asset Reconstruction Company Ltd (NARCL) as the “Bad Bank” in addressing the issue of NPAs. (250 words)........................................................................................................................................................................................................... 52

Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers................................................................................................................................................................................................. 56

Millets have enormous potential to form a core component in climate smart agriculture whilst offering nutritional and food security benefits. Elaborate. (250 words)................................................................................................................................. 56
Many farmers dependent on rainfed agriculture are highly vulnerable to fluctuations in the monsoon. The government needs to reassess its water management policy in rainfed systems and address the issue holistically. Discuss. (250 words) .................................................. 59

Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing................................................................. 62

A hike in the minimum support price (MSP) does not necessarily result in higher price realisation for farmers and thus needs systemic improvements. Analyse. (250 words) .................................................. 62

Despite small and marginal farmers having a significant role in the agricultural sector, most of them face a plethora of issues. It is high time to shift policy support, for creation of job opportunities focussing on allied activities of agriculture. Examine. (250 words) .................................................. 64

Minimum Support Price (MSP) as the sole source of growth in Farmers’ Income is not all sufficient. A strategy focused on diversification and technology-based value chains in agriculture is needed to double farmers income. Discuss. (250 words) ................................................................. 66

Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth. ............................................................................................................... 68

Critically examine as to what extent the draft Consumer Protection (E-Commerce) Rules, 2020 prevent unfair trade practices in e-commerce and promote fair competition. (250 words) ............... 68

Do you think that petroleum products should be included under the goods and services tax (GST)? Critically Examine. (250 words) .................................................................................. 71

Infrastructure: Energy, Ports, Roads, Airports, Railways etc. ........................................................................... 73

Analyse the various risks posed by hydropower projects in the Himalayan region? Highlight the impact of climate change on further exacerbating the existing risks. Suggest measures needed to mitigate it. (250 words) ................................................................. 73

In our quest to achieve renewable energy targets, we need a pragmatic approach towards solar. For India, scaling rooftop solar is a better way forward than large solar parks. Critically Analyse. (250 words) ........................................................................... 77

The ever-growing uncertainty of crude oil prices and geopolitical instability surrounding its supply, make it imperative for India to approach alternative fuels which are cleaner and cheaper on a mission mode. Critically Analyse. (250 words)........................................................................... 80

Science and Technology- developments and their applications and effects in everyday life; Achievements of Indians in science & technology; indigenization of technology and developing new technology. ............................................................................................................... 84

The central and the state governments should go beyond policy guidelines and take steps to meet the future technological and infrastructural demands of Electrical Vehicles (EV). Discuss. (250 words) ........................................................................... 84

Examine the scope of monoclonal antibodies for the treatment of Covid-19 patients in India. Also, write about its potential in treating other diseases apart from Covid-19. (250 words) ..................... 86

Hydrogen Fuel can be a game changer in ensuring energy security as well as our battle against climate change. Discuss the steps taken by India with respect to adoption of hydrogen fuel technology. (250 words) ................................................................. 89
The central and the state governments should go beyond policy guidelines and take steps to meet the future technological and infrastructural demands of Electrical Vehicles (EV). Discuss. (150 words, 10 marks) ................................................................. 92

What is Autonomous Driving Technology? Comment on the feasibility of Autonomous Vehicles in India in the near future. (250 words) ............................................................................................................. 94

Artificial Intelligence (AI) in cybersecurity can provide robust protection and generate rapid responses to cyberthreats. Discuss the advantages of integrating A.I in cybersecurity. (150 words) .................................................................................................................. 96

High Altitude Pseudo Satellite (HAPS) offer persistence and flexibility to complement satellites and drones in both civilian and defence purposes in India. Elaborate. (250 words) ........................................................ 98

Evaluate the learnings from the Mars Orbiter Mission (Mangalyaan) for India. How will these help in socio-economic development of India? (250 words) ................................................................. 100

Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights. ............................................................................................................. 104

Explain the challenges in enforcing Intellectual property rights (IPR) in India. A review of National IPR Policy, 2016 should be undertaken in the wake of new and emerging trends in spheres of innovation, which requires concrete mechanisms to protect them. Analyse. (250 words) .......... 104

Deep tech ecosystem in India is growing by leaps and bounds. A proper policy support and seamless investment can help leverage Indian Deep tech ecosystem in developing sustainable solutions for the country. Comment. (250 words) ................................................................. 107

Conservation, environmental pollution and degradation, environmental impact assessment ...... 109

What is the difference between asset monetisation and privatisation? Form a critical analysis of the government’s idea of monetising operating assets to build fresh assets. (250 words) ....... 109

Hydel power projects in the Himalayan belt are fraught with ecological dangers and needs rethinking on its suitability as well as sustainability. The risk is even more with the effects of climate change. Examine. (250 words) ............................................................................................................ 110

How is climate change impacting agriculture in India? Discuss the steps that are needed to adapt to the ongoing climate crisis. (250 words) ............................................................................................................ 113

Why is Montreal protocol considered the most successful global climate treaty? Evaluate India’s performance in implementing the Montreal Protocol. (250 words) ................................................................. 116

Biodiversity loss can have significant direct human health impacts if ecosystem services are no longer adequate to meet social needs. Examine. (150 words) ................................................................. 118

Climate Action and Finance Mobilization Dialogue (CAFMD) aims to advance inclusive and resilient economic development but there is much more potential in Indo-U.S bilateral relations for both to emerge as global leaders in the climate action and clean energy sectors. Analyse. (250 words) . 120

The alarming rate of sea level rise can have varied yet devastating effects on the coastal states. Examine the vulnerability of India to global warming induced sea level rise. (250 words) ....... 121

Disaster and disaster management............................................................................................................ 124

Cyclones will further amplify with impact of Climate change and significantly increase the vulnerability of the coastal population. Developing appropriate coping strategies and risk reduction plans, along with greater public awareness, is a must disaster management in India. Analyse. (250 words) ................................................................. 124

Telegram: https://t.me/insightsIAStips
Youtube: https://www.youtube.com/channel/UCpocbcX9GEIwaile4HljwA
Facebook: https://www.facebook.com/insightsonindia
Linkages between development and spread of extremism................................................................. 128

What are the core components of the Tribal Panchsheel? Examine it relevance in the present day
to prevent spread of extremism and to achieve tribal justice. (250 words)................................. 128

What are the causes of insurgency in the north-eastern India? Comment on the Karbi-Anglong
Peace Accord and its potential in resolving conflicts in Assam. (250 words)............................ 130

Challenges to internal security through communication networks, role of media and social
networking sites in internal security challenges, basics of cyber security; money-laundering and its
prevention........................................................................................................................................... 132

Owing to the technological complexity and anonymity associated with social media, it has become
a safe haven for cybercrimes. Critically analyse to what extent the Information Technology
(Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 will reduce crimes on social
media? (250 words).......................................................................................................................... 132

Artificial Intelligence (AI) in cybersecurity can provide robust protection and generate rapid
responses to cyberthreats. Discuss the advantages of integrating AI in cybersecurity. (250 words)
.............................................................................................................................................................. 134

Role of external state and non-state actors in creating challenges to internal security........... 140

The Naga peace process continues to be a stalemate and despite the Naga Peace Accord of 2015
the obstacles and differences between stakeholders are yet to be resolved to achieve finality.
Discuss. (250 words).......................................................................................................................... 140

The menace of Left-wing extremism which is the single largest internal security threat in India is
on a decline. It is indeed a welcome news but the Maoist threat remains a potent challenge to be
overcome. Discuss. (250 words)........................................................................................................ 142

Security challenges and their management in border areas – linkages of organized crime with
terrorism.................................................................................................................................................. 144

In this era of global politics when Chinese belligerence is heightening, India and the world must
recognise how the BRI is aiming to reshape the global order in fundamental ways and address it.
Analyse. (250 words).......................................................................................................................... 144
Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

What is V-Shaped Recovery? Do the good tidings in Gross Domestic Product (GDP) data forecast a V-shaped recovery for the Indian economy? Critically examine. (250 words)

Difficulty level: Tough

Reference: The Hindu, Indian Express

Why the question:
Gross Value Added (GVA) in the economy during the April to June period rose 18.8%, as per the National Statistical Office (NSO), from a 22.2% dip in the first quarter of 2020-21.

Key Demand of the question:
To explain Social Stock Exchange, its working and factors that will make it a success in India.

Directive word:
Critically examine – When asked to ‘Examine’, we have to look into the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a fair judgment.

Structure of the answer:
Introduction:
Begin by defining V-Shaped Recovery post covid-19 economic slowdown. Use graph and cite examples.

Body:
Write about the India’s Gross Domestic Product (GDP) growth by 20.1% in first quarter and its various interpretation.

Next, write if the NSO numbers ‘reaffirm’ governments prediction of an ‘imminent V-shaped recovery’ made this time last year, and said the 20.1% rise in GDP ‘despite the intense second wave in the months of April-May.

Next, write difference between an economy benefiting from a “low base effect” and one registering a V-shaped recovery.

**Conclusion:**
Conclude by suggesting steps for quick recovery of economy from a policy perspective.

**Introduction**
A V-shaped recovery is a term that describes a period of economic decline (recession) and recovery that resembles a V shape. This V shape symbolizes a short trough or decline in an economy, followed by rapid recovery, the first stroke of the V shape shows a sharp but short decline while the other stroke indicates a rapid recovery. The recent data released by MoSPI showed that in Q1 of 2021-22, India’s GDP grew by 20.1% while the GVA grew by 18.8%.

**Body**

**What’s in a Shape**

From Nike’s swoosh to smoking pipes, experts use interesting shapes to describe India’s economic recovery

- **V-shaped:**
  1. Steep decline in 1 quarter
  2. Strong recovery in the next quarter

- **W-shaped:**
  1. Sharp fall followed by recovery
  2. Recovery falters
  3. Strong recovery again

**Recent happenings:**
- Latest data show lofty increases in GDP and GVA compared to the first quarter of last year.
- These are year-on-year comparisons; in other words, the total output (as measured by GDP) of the Indian economy in the first three months of the current financial year (April, May and
June) was 20.1% more than the total output created by the economy in the same months last year.

- The total output, as measured by GVA, grew by 18.1% YoY.
- The GDP and GVA had contracted by 24.4% and 22.4%, respectively, in Q1 of the last financial year.

The Gross Domestic Product (GDP) data does not forecast a V-shaped recovery for the Indian economy:

- A V-shaped recovery requires the absolute GDP of an economy getting back to the level before the crisis.
- There is a difference between an economy benefiting from a “low base effect” and one registering a V-shaped recovery.
- India’s total output in Q1, whether measured through GDP or GVA, is nowhere near what it was in Q1 of 2019-20, the year before the pandemic struck.
- The growth rates in 2021-22 in some cases are unduly high due to the low base.
- India produced the same amount of goods and services in Q1 this year as it produced in Q1 of 2017-18.
- The lofty increases in GDP and GVA are in percentage terms, and they are for the most part a statistical illusion created by the very low base set by the complete nationwide lockdown in Q1 of last year.
- The private demand, the biggest engine of growth, in Q1 of the current year was down to almost exactly the level where it was in 2017-18.
- The share of consumption in GDP was lower this time which indicates that the second wave and lockdowns impacted households more than the first wave of COVID.
- The government expenditures (GFCE) have also fallen below last year’s levels.

However, the increase in the output is good news:
India’s economic growth trajectory remains positive at the moment.

Two sectors viz. Agriculture and allied activities and Electricity and other utilities, have managed to grow more than they did in 2019-20.

Construction and Manufacturing GVA recorded a 68.3% and 49.6% uptick between April and June this year, compared to a 49.5% and 36% contraction, respectively, last year.

Activity in many sectors including retail, automobile, agriculture and construction have also gained momentum; only a few contact-heavy sectors such as transport, tourism and hospitality remain weak.

The second wave did impact India’s economy, but it was much lesser in comparison to the first wave. The lessons from the first wave, therefore, helped prevent a major disruption during the second wave.

Higher rate of vaccinations, rapid resumption in manufacturing activity and a milder hit on the all-important services sector are some other reasons that kept the economy afloat during the second wave.

The Reserve Bank of India’s (RBI) low-interest regime and measures taken by the government also helped minimise damage.

Way forward:

- It is always better to look at the absolute levels of output to correcting assess the state of an economy’s health. Percentage changes work well in normal times.
- Crucial economic segments such as manufacturing, services, industrial output, exports and demand should be provided an impetus.
- Investment in infrastructure is quintessential for more rapid and inclusive economic growth.

What are the major objectives and features of National Digital Communications Policy? Government intervention has become an absolute necessity to keep the telecom sector viable for the operators and affordable for common man. Comment. (250 words)

Difficulty level: Moderate
Reference: Live Mint

Why the question:
The government is expected to come out with a comprehensive relief package to support the ailing telecom sector soon and clear adjusted gross revenue (AGR) dues.

Key Demand of the question:
To write about the objectives and features of National Digital Communications Policy and to suggest measures to keep the telecom sector viable and affordable.

Directive word:
Comment-- here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

Structure of the answer:
Introduction:
Start the answer by writing about National Digital Communications Policy 2018 and its objectives.
Body:
In the first part, write about major features of National Digital Communications Policy 2018. Next, analyse the major issues prevailing in the telecom sector – Low profitability, AGR dues, consumer welfare, competition, possibility of Duopoly and financial stability. Suggest steps that government can take to address this issue.

Conclusion:
Conclude with a way forward.

Introduction

With a view to cater to the modern needs of the digital communications sector of India, the Union Cabinet has approved the National Digital Communications Policy-2018 (NDCP-2018). The new telecom policy has been formulated in place of the existing National Telecom Policy-2012 and aims to facilitate India’s effective participation in the global digital economy. The policy aims to ensure digital sovereignty and the objectives are to be achieved by 2022.

Body:

Major Objectives of NDCP 2018:

- Broadband for all;
- Creating four million additional jobs in the Digital Communications sector;
- Enhancing the contribution of the Digital Communications sector to 8% of India’s GDP from ~6% in 2017;
- Propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017;
- Enhancing India’s contribution to Global Value Chains; and
- Ensuring Digital Sovereignty.

These objectives are to be achieved by 2022.

Features of NDCP 2018:

- Provide universal broadband connectivity at 50 Mbps to every citizen;
- Provide 1 Gbps connectivity to all Gram Panchayats by 2020 and 10 Gbps by 2022;
- Ensure connectivity to all uncovered areas;
- Attract investments of USD 100 billion in the Digital Communications Sector;
- Train one million manpower for building New Age Skill;
- Expand IoT ecosystem to 5 billion connected devices;
- Establish a comprehensive data protection regime for digital communications that safeguards the privacy, autonomy and choice of individuals;
- Facilitate India’s effective participation in the global digital economy;
- Enforce accountability through appropriate institutional mechanisms to assure citizens of safe and
- Secure digital communications infrastructure and services.
Government intervention has become an absolute necessity to keep the telecom sector viable for the operators and affordable for common man:

- The industry is going through a financial crisis as a result of which as many as five operators have shut shop.
- The Supreme Court instructed telecom companies to share not just their core telecom revenues with the government, but also to take into account promotional offers to consumers, income from the sale of assets, bad debts that were written off, and dealer commissions.
- Analysts estimate that the extra annual payments by all telecom firms could be around ₹22,000 crore a year.
- Overall debt burden of the remaining players has burgeoned to alarming levels due to expensive spectrum auctions and huge reduction in cash flows.
- Telecom consumers are no better today than they were two decades ago when it comes to quality of services. Call drops, unwanted telemarketing calls, patchy data networks and unfair practices to get users pay more are rampant.
- To make matters worse, consumers do not have access to a reliable and neutral complaint redressal mechanism.
- India is faced with the prospect of a telecom monopoly or duopoly.
- Public sector companies in this sector continue to languish under high manpower costs and red tape.
- There is a big worry over the huge imports of telecom equipment and devices at a time when India’s trade deficit is ballooning.

Way forward:

- **Ease of payment of AGR:**
  - The administration should accept special zero-coupon bonds worth the entire amount due from telecom companies that have AGR funding issues, at a discount to face value, based on the comparable sovereign bond yield at the time of issue.
  - The zero-coupon structure would mean that telecom companies will have no immediate interest costs, thus easing pressures on cash flows without tariff increases.
  - The government should also set up an independent committee of experts, chaired by a retired judge of the Supreme Court, to calculate the excess AGR dues to be paid based on a transparent formula.

- **Government’s Role:**
  - The government needs to act, just like it did in 1999. They could offer the operators payment of principal in instalments and waive off interest and penalties.
  - The government should increase the network area through optical fibre instead of copper which is expensive. This is necessary to ensure last mile connectivity.
The government needs to prepare a ground for easy right-of-way permissions and lower cost of rights-of-way

The government should spend large on R&D and create an environment that makes India capable of manufacturing and even exporting hardware components like mobile handsets, CCTV Cameras, touch screen monitors etc.

- **Judicious use of the Universal Service Obligation Fund:**
  - USOF was established with an aim to fund projects to boost connectivity in rural areas.
  - The fund must be disbursed fairly to ensure that affordable communication services are available to most citizens.

- **Infrastructure Sharing:**
  - Since telecom business is heavy on capex and as much as 40%–60% of the Capex is utilized for setting up and managing the Telecom infrastructure. By sharing infrastructure, operators can optimize their capex, and focus on providing new and innovative services to their subscribers.

- **Curb on predatory pricing:**
  - The government should fix a minimum price to save the industry from price war

- **Lower License fee:**
  - The license fee of eight per cent of the Adjusted Gross Revenue including five per cent as Universal Service Levy (USL) is one of the highest in the world.

**Conclusion:**

A vibrant telecom sector is central to economic growth, and the past decade has seen investors suffer because of an unstable regulatory regime. The NDCP aims to prepare the country and its citizens for the future. Achieving these goals would require various key stakeholders come together to forge a coalition to deliver this national policy and missions. NDCP seeks to **unlock the transformative power of digital communications networks** to achieve the **goal of digital empowerment and well-being of the people of India**; and towards this end, attempts to outline a set of goals, initiatives, strategies and intended policy outcomes.

**Value addition:**

**Missions**

_In pursuit of accomplishing these objectives by year 2022, the National Digital Communications Policy, 2018 envisages three Missions_

- **Connect India**: Creating Robust Digital Communications Infrastructure To promote Broadband for All as a tool for socio-economic development, while ensuring service quality and environmental sustainability.

- **Propel India**: Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation To harness the power of emerging digital technologies, including 5G, AI, IoT, Cloud and Big Data to enable provision of future ready products and services.
services; and to catalyse the fourth industrial revolution (Industry 4.0) by promoting Investments, Innovation and IPR.

- **Secure India: Ensuring Sovereignty, Safety and Security of Digital Communications** To secure the interests of citizens and safeguard the digital sovereignty of India with a focus on ensuring individual autonomy and choice, data ownership, privacy and security; while recognizing data as a crucial economic resource.

e-RUPI has the potential to achieve financial inclusion and bridge digital divide in India. Write about the benefits of e-RUPI and analyse if it is the first step towards the adoption of digital currency in India. (250 words, 15 marks)

**Introduction**

e-RUPI is a one-time contactless, cashless voucher-based mode of payment that helps users redeem the voucher without a card, digital payments app, or internet banking access. It is basically a digital voucher which a beneficiary gets on his phone in the form of an SMS or QR code. It is a pre-paid voucher, which he/she can go and redeem it at any centre that accepts it.

**Body**

**What is e-RUPI?**

A digital voucher developed by the National Payments Corporation of India (NPCI) will be transferred directly to the mobile phone as an SMS string or QR code. e-RUPI users will be able to redeem the vouchers at the merchants accepting UPI e-Prepaid Vouchers.

**How does it work?**

The beneficiary registered for direct benefit transfer (DBT), registered with the govt using Aadhar, gets an SMS/QR code. Let us say for vaccination purposes. The person can show the SMS/QR code at the vaccination centre. After the scan, the beneficiary gets a code on the same number where he/she received the original SMS or QR that need to be shared with the official at the health centre for redeeming the amount, and the beneficiary can go for the vaccination.

**Where can the e-RUPI be used?**

For now, only for schemes related to the Ministry of Health. Soon, it should be used widely for other DBT schemes of the government. However, the private sector can also use it to sponsor welfare schemes.

**Is it an alternative to UPI?**

No, but it is derived from UPI and uses NPCI infrastructure to work. For now, e-RUPI is used for DBT schemes in a targeted manner, in order to stop misuse of funds. It is not a standalone payment system but UPI for a specific purpose.

**Benefits of e-RUPI:**

**To the Consumer**

- e-RUPI does not require the beneficiary to have a bank account, a major distinguishing feature as compared to other digital payment forms.
- It ensures an easy, contactless two-step redemption process that does not require sharing of personal details either.
- Another advantage is that e-RUPI is operable on basic phones also, and hence it can be used by persons who do not own smart-phones or in places that lack internet connection.
- Only mobile phone and e-voucher required – Users redeeming the voucher need not have a digital payment app or a bank account.
- Safe and Secure: Beneficiaries do not need to share personal details and hence their privacy is maintained.

To the sponsors
- e-RUPI is expected to play a major role in strengthening Direct-Benefit Transfer and making it more transparent.
- Since, there is no need for physical issuance of vouchers, it will also lead to some cost savings as well.

To the Service Providers.
- Being a prepaid voucher, e-RUPI would assure real time payments to the service provider.
- Visibility for voucher utilisation – Voucher redemption can be tracked by the issuer
- Quick, safe & contactless voucher distribution

**e-RUPI is the first step towards the adoption of digital currency in India**
- The main objective and long-term vision behind e-RUPI is to reach 190 million unbanked citizens, fold them into a formal financial system, and close part of the digital gap.
- This digital payment system can provide equal access to financial, healthcare, and welfare services to each and every citizen of our country.
- The government is already working on developing a central bank digital currency and the launch of e-RUPI could potentially highlight the gaps in digital payments infrastructure that will be necessary for the success of the future digital currency.
- This new transfer system could be put to widespread use in public-service delivery, as it allows for money to be spent only for intended purposes and reaches the correct beneficiary.
- With the government’s focus on direct benefit transfers for assorted welfare programmes, the e-Rupi can prove pivotal in terms of preventing leakages and providing last-mile connectivity for routine state provisions and other forms of support.
- Reduced cash utilisation, especially when an institution is distributing benefits. This can have significant adverse tailwinds for companies like Sodexo, if organisations use a part of their kitty to issue purpose specific e-RUPI – such as learning allowance on specific portals.

**Challenges:**
- Rural-urban divide, both in terms of technology and access to banking infrastructure.
A large gap still exists in terms of internet access. As per the latest data available from the Telecom Regulatory Authority of India, there are 34.6 rural internet subscribers per 100 people in the country, as opposed to 104 in urban areas (as on end December 2020).

Internet penetration also varies widely across states. Internet subscribers per 100 persons ranges from 210 in Delhi and 87.6 in Punjab to 40.8 in Uttar Pradesh and 32.9 in Bihar.

There are around 190 million unbanked citizens in our country, residing mostly in rural parts.

As the existing digital payment methods require a bank account and internet/smartphone, until these gaps are filled, complete financial inclusion will remain a developmental challenge.

Way forward:

- The M-Pesa in Kenya can be an example on which e-RUPI can build on.
- e-Rupi has been announced just for specific purposes, but it could be scaled up massively.
- In the US, there is the system of education vouchers or school vouchers, which is a certificate of government funding for students selected for state-funded education to create a targeted delivery system. This could be emulated in India too.

Critically Analyse India’s performance so far to achieve its Paris obligations. What policy and behavioural changes are further required to stay on course to achieve its targets by 2030? (250 words, 15 marks)

Introduction

India was the only G20 nation compliant with the Paris agreement on the occasion of the Climate Ambition Summit 2020. It will mark the fifth anniversary of the Paris Agreement, and will provide a platform for government and non-governmental leaders to demonstrate their commitment to the Paris Agreement and the multilateral process.

Body

India’s commitment to Paris agreement

In 2015, ahead of the UN significant climate conference in Paris, India announced three major voluntary commitments called the Nationally Determined Contributions (NDC):

- Improving the emissions intensity of its GDP by 33–35% by 2030 over 2005 levels
- Increasing the share of non-fossil fuels-based electricity to 40% by 2030 and
- Enhancing its forest cover, thereby absorbing 2.5 to 3 billion tonnes of carbon dioxide

Performance of India in achieving its commitments

- India is on track to meet and exceed the NDC commitment to achieve 40% electric power installed capacity from non-fossil fuel-based sources by 2030; this share is 38.18% (November 2020).
Similarly, against the voluntary declaration for reducing the emission intensity of GDP by 20%-25% by 2020, India has reduced it by 24% between 2005-2016.

More importantly, we achieved these targets with around 2% out of the U.S.$100 billion committed to developing nations in Copenhagen (2009), realised by 2015.

As part of its mitigation efforts, India is implementing one of the most extensive renewable energy expansion programmes to achieve 175 GW of renewable energy capacity by 2022 and 450 GW by 2030.

India has also coupled its post-pandemic revival with environmental protection.

As part of the fiscal stimulus, the Government announced several green measures, including a $26.5-billion investment in biogas and cleaner fuels, $3.5 billion in incentives for producing efficient solar photovoltaic (PV) and advanced chemistry cell battery, and $780 million towards an afforestation programme.

Measures taken by India to Control Emissions

- **Bharat Stage (BS) VI norms**: These are emission control standards put in place by the government to keep a check on air pollution.

- **National Solar Mission**: It is a major initiative of the Government of India and State Governments to promote ecologically sustainable growth while addressing India’s energy security challenge.

- **National Wind-Solar Hybrid Policy 2018**: The main objective of the policy is to provide a framework for promotion of large grid connected wind-solar photovoltaic (PV) hybrid systems for optimal and efficient utilization of wind and solar resources, transmission infrastructure and land.

- All these and many other initiatives helped India in cutting CO2 emissions by **164 million kg**.

Conclusion

To sum up, India has indeed walked the talk. Other countries must deliver on their promises early and demonstrate tangible results ahead of COP26. In any case, we can always Suo motu revise the NDC for the first stocktake (2023) while simultaneously protecting our interests. The responsibility of sustaining the entire planet does not rest on a few countries; everyone has to act.

Value-addition

**Paris Agreement and Nationally Determined Contributions**

- *The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016.*

- *Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.*

- *To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate-neutral world by mid-century.*
• It is a landmark process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.

• In their NDCs, countries communicate actions they will take to reduce their Greenhouse Gas emissions in order to reach the goals of the Paris Agreement.

• Countries also communicate in the NDCs actions they will take to build resilience to adapt to the impacts of rising temperatures.

FDI might be one of the important sources and forces behind the economic development of India but it is not the sole solution for its socio-economic issues.

Comment. (250 words, 15 marks)

Introduction

Foreign direct investment (FDI) is when a company takes controlling ownership in a business entity in another country. It is, thus, a purchase of an interest in a company by a company or an investor located outside its borders. Indian foreign direct investment (FDI) inflows crossed another milestone in the middle of the second wave of the pandemic by nearly doubling over the same period last year. Of this, FDI equity inflows rose by 168%.

Body

FDI: an important source & force behind economic development of India:

• Economy:
  o Capital inflows create higher output and jobs.
  o Capital inflows can help finance a current account deficit.
  o Long-term capital inflows are more sustainable than short-term portfolio inflows.
    ▪ For e.g., in a credit crunch, banks can easily withdraw portfolio investment, but capital investment is less prone to sudden withdrawals.
  o Acts as a bridge by filling up budgetary gap, stabilize rupee and improves Balance of Payment situation.

• Knowledge economy:
  o Recipient country can benefit from improved knowledge and expertise of foreign multinational.

• Employment generation:
  o creates employment opportunity mainly in service sector and ITEC.
  o Investment from abroad could lead to higher wages and improved working conditions, especially if the MNCs are conscious of their public image of working conditions in developing economies.

• Infrastructure development:
  o FDI in construction, railways except operation help in developing projects like high-speed train, Freight corridor, etc.
Taxation:
  - Increased revenue in the form of corporate tax and for community welfare development as CSR.

Enhances Competition:
  - Increase competition among domestic manufacture, may lead to improved quality and services.

FDI: not the sole solution for India’s socio-economic issues:
  - The motive of the foreign investors is **only profit not the development of country** so they often shifts their bases in search of high profits so there is more volatility and speculations in capital market. With their sudden exit, there may be **unemployment and high inflation**.
  - Gives **multinationals controlling rights within foreign countries**. Critics argue powerful MNCs can use their financial clout to influence local politics to gain favourable laws and regulations.
  - FDI **does not always benefit recipient countries** as it enables foreign multinationals to gain from ownership of raw materials, with little evidence of wealth being distributed throughout society.
  - Multinationals have been **criticized for poor working conditions** in foreign factories. e.g., Apple’s factories in China
  - It threatens existing markets that are labour intensive by replacing with technology as in multi brand retail.
  - FDI favours **short term returns over investments** in infrastructure.
  - **Diffusion of technology in difficult** in our country where the state of both human and physical capital is not yet on par with developed countries. so with the increase in technology many unskilled workers lost their jobs.
  - In India, FDI is **sector specific** like finance, IT, Banking, Insurance and outsourcing which **predominantly employ skilled workers**.
  - The capital inflow at times **worsen the regional inequalities**. It is usually limited to urban and well developed regions like Delhi, Maharashtra etc, and states like Odisha receives around 1% of FDI. This makes **richer region more rich and poor regions poorer**.
  - FDI may be a convenient way to **bypass local environmental laws**. Developing countries may be tempted to compete on reducing environmental regulation to attract the necessary FDI.

Way forward:
  - Role of FDI can at most be seen as complementary and qualitative in nature.
  - Government must bring reforms to encourage MSME sector which could boost the rural employment generation.
  - **Public expenditure** for investment in capital formation as infrastructure and energy is for long term benefits of spurring economic activity and creating short term demands.
• Spending on social sectors and India’s pressing issues of poverty, demographic challenge and agrarian stagnation are towards avoiding social unrest and maintain a social security net.

• Government while continuing to simplify processes to attract FDI must realise it’s limited role and thereby take upon itself to make headway towards strengthening pillars of economic development which are health, education, and employment.

Value addition:

FDI in India

FDI is an important monetary source for India’s economic development. Economic liberalisation started in India in the wake of the 1991 crisis and since then, FDI has steadily increased in the country. India, today is a part of top 100-club on Ease of Doing Business (EoDB) and globally ranks number 1 in the greenfield FDI ranking.

Routes through which India gets FDI

• **Automatic route:** The non-resident or Indian company does not require prior nod of the RBI or government of India for FDI.

• **Govt route:** The government’s approval is mandatory. The company will have to file an application through Foreign Investment Facilitation Portal, which facilitates single-window clearance. The application is then forwarded to the respective ministry, which will approve/reject the application in consultation with the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce. DPIIT will issue the Standard Operating Procedure (SOP) for processing of applications under the existing FDI policy.

Importance of Domestic Resource Mobilization (DRM):

In low-income countries confronting widespread poverty, mobilizing domestic resources is particularly challenging, which has led developing countries to rely on foreign aid, foreign direct investment, export earnings and other external resources. Nevertheless, there are compelling reasons to give much more emphasis to DRM.

• Greater reliance on DRM is vital to elevating economic growth, accelerating poverty reduction and underpinning sustained development.

• High-growth economies typically save 20-30 per cent or more of their income in order to finance public and private investment.

• DRM is potentially more congruent with domestic ownership than external resources.

• Foreign aid invariably carries restrictions and conditionality.

• FDI is primarily oriented to the commercial objectives of the investor, not the principal development priorities of the host country.

• DRM is more predictable and less volatile than aid, export earnings, or FDI.
Owing to the technological complexity and anonymity associated with social media, it has become a safe haven for cybercrimes. Critically analyse to what extent the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 will reduce crimes on social media? (250 words, 15 marks)

Introduction

Recently, Chief Justice of India remarked that, many social media and news media communalise content leading to polarisation in the country. The remark from the CJI came while hearing petitions highlighting how some media outlets aired communal content linking the spread of the coronavirus to a Tablighi Jamaat meet held at Nizamuddin in Delhi. The hearing witnessed Chief Justice Ramana upbraid the lack of accountability on the part of social media platforms.

Body

The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021

- **Due diligence by intermediaries**: Intermediaries are entities that store or transmit data on behalf of other persons. Intermediaries include internet or telecom service providers, online marketplaces, and social media platforms.

- The due diligence to be observed by intermediaries includes: (i) informing users about rules and regulations, privacy policy, and terms and conditions for usage of its services, (ii) **blocking access to unlawful information within 36 hours** upon an order from the Court, or the government, and (iii) retaining information collected for the registration of a user for 180 days after cancellation or withdrawal of registration.

- Intermediaries are required to report cybersecurity incidents and share related information with the Indian Computer Emergency Response Team.

- **Significant social media intermediaries**: A social media intermediary with registered users in India above a threshold (to be notified) will be classified as Significant Social Media Intermediaries.

- Additional due diligence to be observed by these intermediaries include: (i) appointing a **chief compliance officer** to ensure compliance with the IT Act and the Rules, (ii) **appointing a grievance officer residing in India**, and (iii) publishing a monthly compliance report.

- Intermediaries which provide messaging as a primary service must enable the identification of the first originator of the information on its platform.

- This originator must be disclosed if required by an order from the Court or the government. Such order will be passed for specified purposes including investigation of offences related to sovereignty and security of the state, public order, or sexual violence.

IT Rules and its efficacy on reduction of crimes via social media

- The government announce that the Code is “soft-touch oversight” mechanism to deal with issues such as persistent spread of fake news, abuse of these platforms to share morphed images of women and contents related to revenge porn or to settle corporate rivalries.

- The speed and reach of digital media especially social media have meant that subversive rumours and fake news get aired with impunity.
This has resulted in serious law and order problems.

- In India, this phenomenon has assumed dangerous proportions. **Fake news and hate speech** have led to **lynchings and communal flare-ups** in many parts of the country. This menace needs to be curbed.
  - e.g.: Delhi Riots, DG Halli riots in Bangalore.

- It is very important that crores of social media users be given a proper forum for resolution of their grievances in a time bound manner against the abuse and misuse of social media.

- **Checks and balances** against executive excesses is in place as a **court order is needed** to extract information from social media companies. Additionally, no such order would be passed in cases where other less intrusive means were effective in identifying the originator of the information and the intermediary would not be required to disclose the contents of any electronic message.

- The government must be mindful that it did not over-regulate leaving a deleterious impact on the users’ right to privacy and free speech.

**Critical analysis and way forward**

- In the current form, these guidelines could undermine the principles of open and accessible Internet and violate the right to privacy and free speech of users, particularly in the absence of **robust data protection law**.

- These could also lead to an erosion of the ‘safe harbour’ protection given to intermediaries under Section 79 of the IT Act.

- There is no denying that there are problems with online content, which the government has rightly highlighted now.

- Its release has referred to a 2018 Supreme Court observation that the government “may frame necessary guidelines to eliminate child pornography, rape and gangrape imageries, videos and sites in content hosting platforms and other applications”, besides making a mention of discussions in Parliament about social media misuse and fake news.

- Besides the regulation, data privacy law must be passed immediately as it has been on the back burner. State must also be held accountable in upholding privacy rights of its people.

Critically examine the newly launched Production Linked Incentive (PLI) scheme in imparting a competitive edge to the Indian textile sector. (250 words)

**Difficulty level: Moderate**

**Reference:** The Hindu

**Why the question:**

The Centre has notified a Rs 10,683 crore Production Linked Incentive (PLI) scheme for the textiles industry with a special emphasis on high-value fabrics, and garments.

**Key Demand of the question:**

To write about the potential of recently launched Production Linked Incentive (PLI) scheme in enhancing competitiveness of India textiles.

**Directive word:**

**Critically analyse** – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary. When ‘critically’
is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a balanced judgment on the topic.

Structure of the answer:

Introduction:
Begin by writing about PLI for textile sector, its aims and objectives.

Body:
Mention the benefits of the scheme such as employment generations and boosting domestic production in line with the scheme of Aatmanirbhar abhiyan, especially after the ravage of the textile economy post covid pandemic, attracting domestic and foreign investments and promotion of setting up of large-scale manufacturing units.

On the flipside also discuss the cost-benefit analysis of the scheme from the perspective of the companies and entrepreneurs regarding the risk associated with scaling up of operations. Also, mention about the stiff competition India faces from Bangladesh and Vietnam.

Conclusion:
Conclude by writing a way forward to gain confidence of the entrepreneurs and investors to explore options of expanding their business.

Introduction
The government rolled out a Production Linked Incentive scheme for the textile industry to make the sector competitive and export oriented. With a total budgeted outlay of ₹10,683 crore, the government has designed the scheme with a view to providing a big fillip to the man-made fibres and technical textiles segments of the industry.

Body
Production Linked Incentive scheme: Features

- The scheme is aimed at promoting industries that invest in the production of 64 select products. The product lines include 40 in man-made fibre apparel, 14 in man-made fibre fabrics, and 10 technical textile segments/products.

- The investment period is two years, and the incentive will be paid for five years after the first year of post-investment operation.

- The scheme is for two types of investments. The first entails a minimum of ₹300 crore in plant, machinery, equipment and civil works in a unit that must register a minimum turnover of ₹600 crore once it commences operation.

- The second is for a minimum of ₹100 crore, where the business achieves a minimum turnover of ₹200 crore. Thus, the incentive is based on a combination of investment and turnover.

- The government has indicated that the incentive for the higher investment scheme would start at 15% of the turnover for the first year, and 11% in the case of the lower turnover plan, decreasing gradually by 1% each subsequent year over the next four years for both schemes.

- Priority will also be given to investment in aspirational districts, Tier-3, Tier-4 towns, and rural areas.

Advantages of PLI scheme

- During 2018-19, the import of man-made fibre garments jumped 39% from the previous year, while the import of the man-made fibre yarn, fabrics, and made-ups rose 16%.
With the government recently removing the anti-dumping duty on viscose staple fibre and Purified Terephthalic Acid, most man-made fibre is now available in India at internationally competitive prices.

With an incentive to invest in production too, Indian manufacturing of man-made fibre value-added products is expected to increase and thus bring down imports, especially of man-made fibre apparel and fabrics, from countries such as China and Bangladesh.

The government has said the scheme will help attract ₹19,000 crore of fresh investments and generate 7.5 lakh jobs.

The expectation is that it will motivate industries to make fresh investments in the select product lines and scale up capacities.

Global retail brands, which are present in India and sourcing man-made fibre-based apparel from other countries, are likely to start sourcing from India once the garments become available at internationally competitive prices.

Critical analysis

- The cotton textile is excluded from this scheme. Industry stakeholders are of the view that India’s cotton exports contracted 18 per cent last year and must have been given some benefits under the scheme.

- It invariably incentivises big players only, as minimum investment starts with either Rs 100 crore and Rs 500 crore.

- Each PLI scheme is to be run by different ministry. Then, it will become a hydra-headed bureaucracy.

- The market share of domestic companies is not promising. In such cases, this scheme could benefit international companies more than domestic companies.

- Each process of the manufacturing is done by multiple players in India. Therefore, the condition of investing Rs 500 Crore for greenfield investment seems very difficult to achieve and clearly seems that this condition should be eased out the way it has been done for some other sectors.

- It would be difficult to maintain a growth pattern of 50% on a year-on-year basis which would involve more investment in terms of machinery and capturing more market in given time.

Conclusion

While the government is discussing various representations from industry in all earnest to make the scheme being successful, it would be interesting to look at the products and the eligibility criteria which gets notified in the final scheme so as to achieve real growth for the sector.

RBI’s Account Aggregator framework is an encouraging stimulus for easing of credit flow in the economy, especially for the MSME sector. Comment. (250 words)

Difficulty level: Moderate

Reference: Financial Express

Why the question:
The Reserve Bank of India launched the account aggregator framework aimed at making financial data more easily accessible.

**Key Demand of the question:**
To write about the role Account aggregators can play in improving credit flow in the economy as well as credit flow to the MSME sectors.

**Directive word:**

**Structure of the answer:**

**Introduction:**
Begin by explaining what an account aggregator.

**Body:**

First, write about the issue of customer data being fragmented in databases of banks, lenders, insurance companies, government bodies, and RBI’s account aggregator being a solution for seamless and secure data sharing digitally.

Also mention the benefits to MSME such as quick link of data, no need for a physical collateral, lack of organised records of financial statements pushes MSMEs to secure credit through informal channels etc and this promotes a fast access to small formal credit.

**Conclusion:**
Conclude by mentioning that and RBI’s Account Aggregator framework is a step in the right direction and further steps that are needed to make it secure and effective.

**Introduction**

The Account Aggregator (AA) framework, which was first announced by the Reserve Bank of India (RBI) back in 2016, will now be open for users to access account aggregation services. According to the RBI, AAs are a new class of non-banking financial companies (NBFCs) that offers account aggregation services — retrieving or collecting information of its customer pertaining to their financial assets and consolidating, organizing, presenting it to the customer or any other person as per the instructions of the customer — in exchange for a fee. This has the potential to streamline credit access for MSMEs.

**Body**

**Account Aggregator’s framework**

- The AA network has been launched on the basic premise that customer data is generally fragmented and exists in silos in databases of banks, lenders, insurance companies, government bodies, and other entities.

- In order to provide an institutional framework for seamless and secure data sharing digitally between let’s say a borrower and a bank for credit access, the AA network was created instead of dedicating time in collating information such as scanned copies of bank statements, stamped documents from notaries, bank statements, GST returns, cash flow, etc., and then sharing it with the lender.

- Here, financial assets could be bank deposits including fixed deposits, saving deposits, recurring deposits, current deposits, deposits with NBFCs, SIPs, government securities, equity shares, bonds, debentures, ETFs, insurance policies, balances under the National Pension System (NPS), etc.

- With AA services, the user is not required to physically share hard copies of documents from various entities or confidential login details of his/her documents or browse through different sites for information required by financial service providers.

**Potential to streamline credit access for MSMEs.**

Telegram: [https://t.me/insightsIAStips](https://t.me/insightsIAStips)

Youtube: [https://www.youtube.com/channel/UC pocbcX9GElwaile4HIjwA](https://www.youtube.com/channel/UC pocbcX9GElwaile4HIjwA)

Facebook: [https://www.facebook.com/insightsonindia](https://www.facebook.com/insightsonindia)
• **Formal credit:** Instead of physical collateral usually required for an MSME loan, this information collateral-based credit underwriting can help the business access a small formal credit.
  
o With AA now making it possible to share other credit-worthiness proxies like digital invoices, tax returns, etc., it will help businesses towards cash-flow-based lending from current physical-collateral-based lending thereby getting more people and businesses in the formal credit system.

• **Access to credit due to information:** The fast-tracking of data sharing to broaden the scope of financial services for better products and services can help micro, small, and medium enterprises (MSMEs) access credit in a more convenient and trustworthy manner that eventually might help address the credit crunch faced by MSMEs currently.

• **Securing easy credit:** Lack of organised records of financial statements pushes MSMEs to secure credit through informal channels. Importantly, out of 6.33 crore MSMEs in India, only 10 per cent have access to formal credit, according to a November 2019 report by PwC and FICCI titled Wider Circle. AA framework can remedy this ill.

• **Faster loans:** AA system has the potential to revolutionise lending to MSMEs by allowing much faster access of financial data of businesses to lenders and reducing the loan application cycle to a few minutes.

• **Tailored services by banks:** Account Aggregators are an exciting addition to India’s digital infrastructure as it will allow banks to access consented data flows and verified data. This will help banks reduce transaction costs, which will enable them to offer lower ticket size loans and more tailored products and services to our customers.

• It will also help us reduce frauds and comply with upcoming privacy laws.

• **More options to msme’s:** The larger benefit can also come in the form of access to alternate data to the banks using the framework.

**Conclusion**

This would enable banks to potentially not only offer lower ticket size loans, but also possibly reach out to a broader set of customers for loans which in the past they might have rejected. Thus, RBI’s Account Aggregator framework is a step in the right direction and further steps that are needed to make it secure and effective.

**Value addition**

• The Ministry of Finance had last week in a statement informed that eight banks have been onboarded onto the AA network.

• This included Axis Bank, ICICI Bank, HDFC Bank, and IndusInd Bank that are already sharing data based on user consent while State Bank of India, Kotak Mahindra Bank, IDFC First Bank, and Federal Bank will shortly begin the same.

• The data shared by AAs with banks or other financial institutions with the user’s consent is encrypted and can be decrypted only by the recipient.

• Moreover, the time period for which the institution would have access to the data will be visible to the user at the time of giving consent for sharing the data.
Achieving higher quality and creating consumer demand are the two major concerns of organic farming in India. Comment on the potential of organic farming in the north eastern India. (250 words)

Reference: The Hindu

Introduction

Organic farming is a system of production that relies on animal manures, organic wastes, crop rotations, legumes and aspects of biological pest control. It avoids (or legumes excludes) the use of synthetically produced fertilizers, pesticides, growth regulators and livestock additives. It is the ecological production management system that promotes and enhances biodiversity, biological cycles and biological activity of the soil.

Body

Organic farming concerns: Quality and Demand concerns

- Low Yields: In many cases the farmers experience some loss in yields on discarding synthetic inputs on conversion of their farming method from conventional to organic.

- Price and Demand: The final prices of organic produce are always higher than conventional products and the customers always opt for cheaper products.
  - It hugely impacts the organic produce market in India.

- Quality issues due to certification concerns: There were no policy or framework for selling organic food products in India.
  - As a result, anyone could sell anything, under the label of ‘organic’.
  - This created trust issues among the customers.
  - To solve this FSSAI has come up with the Jaivik Bharat framework, a globally recognised third-party certification process which is controlled by APEDA.

- No subsidies for organic inputs: Seeds and inputs are the main ingredients of agriculture. Both are highly regulated and governed by government policies. While the government provides subsidies for chemical fertilisers and pesticides, there is no such provision for organic inputs.

Potential of organic farming in the north eastern India

- India’s North-East, comprising eight States, is largely unspoilt by modern agricultural practices, which involve heavy use of agro-chemicals and chemical fertilisers.
  - For this precise reason, the region is a natural choice for promoting organic farming in the country.
  - Sikkim, the first organic State in India, has already shown the way for the other States in the region.

- Nearly 90,500 hectares of land in the NE region is already under organic cultivation. Even though Sikkim accounts for more than three-fourths of this, other States such as Meghalaya and Assam have shown tremendous progress in embracing organic farming.
As per the available statistics, another 77,600 hectares is the process of switching over to organic cultivation. The conversion process normally takes three years.

Moreover, organic matter in the soil in the NE region is significantly high as compared to other parts of the country.

North Eastern Region (NER) is home to some niche crops like Assam lemon, Joha rice, medicinal rice and passion fruits which has high market demands.

NER accounts for 45 per cent of total pineapple production in India.

Sikkim is the largest producer of large cardamom (54 per cent share) in the world.

NER is the fourth largest producer of oranges in India. One of the best quality ginger (low fiber content) produced in the North Eastern Region.

Extent of chemical consumption in farming is far less than the national average.

18 lakh ha of land in NER can be classified as “Organic by Default”.

Conclusion

For successful organic farming the resources available should be effectively used and a holistic approach should be adopted. Green manuring, mulching, crop rotation, use of biological pesticides, indigenous knowledge should be used together in a proper balance for maintaining productivity and increasing farmer’s income.

Value Addition

The Agriculture Ministry launched a scheme called Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) which aimed at developing certified organic production in a value chain mode to link growers to consumers in other parts of the country and overseas.

The idea behind the ₹400 crore, three-year mission was to develop a holistic organic farming ecosystem starting from inputs, seeds, certification and creation of facilities, aggregation, processing and marketing.

According to official data, MOVCDNER has helped bring an area of 45,920 hectares under organic cultivation as against the targeted 50,000 hectares, mobilised 48,950 farmers, created 97 farmer-producer companies and 2,469 farmer interest groups.

With the World Bank’s Ease of Doing Business index being scrapped, India must not lose the progress made so far and further try to improve the business climate in the economy. Comment. (250 words)

Difficulty level: Tough

Reference: The Hindu

Why the question:
The World Bank Group scrapped its flagship publication, the ‘Doing Business’ report.

Key Demand of the question:
To write about the progress made with respect to Ease of Doing Business in India and further steps required to measure it.

Directive word:
Comment – here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

Structure of the answer:
Introduction:
Begin my writing Ease of Doing Business report of the world bank and its primary uses to investors.

Body:
Briefly, give context about the irregularities in the report and hence it was scrapped. Mention the major areas of progress India achieved with respect to Ease of Doing Business in past few years. Bring its benefits. Cite stats and facts to substantiate your point.
Next, write about further step that are required to improve the business climate in the Indian economy.

Conclusion:
Conclude by mentioning that irrespective of the index or not, India should focus on simplifying and easing restrictions to have a conducive environment for doing business.

Introduction
Recently, the World Bank Group scrapped its flagship publication, the ‘Doing Business’ report. This report publishes the influential annual ranking of countries on the Ease of Doing Business (EDB) index. The Group acted on its commissioned study to examine the ethical issues flagged in preparing the 2018 and 2020 editions of the EDB index.

Body

Background: Irregularities

- The allegation surrounding Kristalina Georgieva, Managing Director of the International Monetary Fund, is the proximate reason for scrapping the publication.
- As Chief Executive Officer of the World Bank in 2018, Ms. Georgieva is accused of having exerted pressure on the internal team working on the Doing Business report to falsely boost China’s rank by doctoring the underlying data.
- Similarly, tensions were also reportedly brought to bear in the case of Saudi Arabia’s rank, among others.
- Further, India’s improvement in ranking was based on changes in two cities alone which may not reflect the realities of the country.
- Notwithstanding any of this, India must ensure that the progress achieved over the years are not lost, rather must improve further.

Progress of India over the years

The last six years have been exciting from an EoDB perspective. India has jumped from 142nd rank in the World Bank EoDB in 2014 to 63rd in 2019.
Steps to improve business climate in India

- **Attracting investment:** India needs to move faster on the reform front, to better attract global savings and investments. Bring **clarity and certainty in policies of FDI, taxation** among others.

- **Fasten starting a business:** The available data suggest that the **resources required** for starting a business can be considerably **higher** in the lower income economies.
  - It would stultify entrepreneurship and risk-taking, and, thereby, discourage profit earning.

- **Boosting entrepreneurship:** We need to policy-induce much greater EDB to boost entrepreneurship nationally. It would lead to better employment opportunities, higher tax revenue for government and also give rise to improved personal income as well.

- **Simplify taxes:** Further simplify the **indirect goods and services tax (GST) regime**, and make taxes, both on **income and consumption**, easy and taxpayer-friendly. The average time for filing taxes can be significantly higher in lower-middle income economies like India.

- **Reforms all over India:** It is also a fact that India’s high global rank in dealing with construction permits, 27th in the ranking, is more a reflection of recent reform measures in the two mega urban centres, and may not quite hold nationwide. The way ahead is to have reforms in place to better coagulate funds for built spaces.

**Conclusion**

The World Bank’s decision to scrap its annual publication Doing Business report is welcome. Investigations into “data irregularities” in preparing the EDB index, as brought out by the
independent agency, seems to confirm many shortcomings repeatedly brought to light for years now.

Value addition

- It 12 indicator sets and 190 economies.
- Ten of these areas—starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency—are included in the ease of doing business score and ease of doing business ranking.
- Doing Business also measures regulation on employing workers and contracting with the government, which are not included in the ease of doing business score and ranking.

Examine the factors for the high rate of inflation in the Indian economy in the recent months. Suggest measures to keep the inflation within the Reserve Bank of India (RBI)'s tolerance band. (250 words)

Difficulty level: Moderate
Reference: The Hindu

Why the question:
Inflation for the last four months has been worryingly high — wholesale price index (WPI) has been above 10% and consumer price index (CPI) crossed the 6% mark in June, which was above the Reserve Bank of India (RBI)'s tolerance band.

Key Demand of the question:
To write about the reasons for high rate of inflation and suggest measures to keep it under control.

Directive word:
Examine – When asked to ‘Examine’, we must investigate the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications.

Structure of the answer:
Introduction:
Begin defining inflation and giving the recent rates of high rates of inflation.

Body:
In the first part, in detail explain the reasons for the recent high rate of inflation – increased taxation of energy, disrupted supplies, sharp rise in the profits of the corporate sector, international factors and weakening of the rupee. Write about the impact of rise of inflation on the marco-economic situation of India.
Suggest measures to bring inflation under control to keep it under acceptable limits.

Conclusion:
Conclude with a way forward

Introduction

Telegram: https://t.me/insightsIAStips
Youtube: https://www.youtube.com/channel/UCpoccbCX9GElwaile4HliwA
Facebook: https://www.facebook.com/insightsonindia
Inflation for the last four months has been worryingly high — wholesale price index (WPI) has been above 10% and consumer price index (CPI) crossed the 6% mark in June, which was above the Reserve Bank of India (RBI)'s tolerance band. This is happening at a time when demand has been down, unemployment has been high, many have lost incomes and poverty has aggravated.

**Body**

**Factors for the high rate of inflation in the Indian economy**

- **Fuel prices**: The government has increased taxation of energy to raise resources.
  - Since energy is used for all production, prices of all goods and services tend to rise and push up the rate of inflation.
  - Further, **this is an indirect tax, it is regressive and impacts the poor disproportionately**. It also makes the RBI’s task of controlling inflation difficult.

- **Supply shortage**: The lockdowns disrupted supplies and that added to shortages and price rise.
  - Prices of medicines and medical equipment rose dramatically.
  - Prices of items of day-to-day consumption also rose.
  - Fruits and vegetable prices rose since these items **could not reach the urban markets**.

- **International factors**: Most major economies have recovered and demand for inputs has increased while supplies have remained disrupted (like chips for automobiles).
  - So, **commodity and input prices** have risen (like in the case of metals).
  - Businesses claim increase in input costs underlies price rise.

- **Data collection and methodology**: In April and May 2020, data on production and prices could not be collected due to the strict lockdown.
  - So, the current data on prices for April to July 2021 are not comparable with the same months of 2020.
  - As such, the official inflation figures for these months in 2021 do not reflect the true picture.

- **Weak Rupee**: The weakening of the rupee also added to inflation.

**Measures to keep the inflation under control**

- **Monetary policy Measures**: Maintaining **price stability** is the foremost objective of the monetary policy committee of RBI. However, during the pandemic, growth has taken centre stage and RBI has rightly cut interest rates.
  - But now it is taking a neutral stance in the wake of rising inflation.
  - Traditionally, raising interest rates can lead to decline in prices by making credit more expensive and this is the tool that RBI employs.
However, just raising interest rates to combat inflation may kill any incipient signs of recovery. So, RBI may prefer a wait-and-watch mode at least for now.

- **Commodity prices:** GoI needs to remove supply side bottlenecks. For example, GoI can immediately offload 10-20% of its pulses stock with NAFED in the open market.
  - Stocks are currently at 14.6 lakh MT. This may immediately cool down pulses’ price.

- **Fuel prices:** The prices of petrol, diesel and LPG has increased drastically crossing Rs 100/- and states/Centre are buck passing the responsibility of cutting taxes.
  - Bringing them under GST would reduce the prices by at least 30 rupees.
  - GST council must agree to this with haste.

- **Policy measures:** Navigating out of this will need a fiscal stimulus to shore up consumer spending, an investment revival to increase the productive capacity of the economy, and a careful management of inflationary expectations.
  - Concomitantly, the government will also need to pursue redistribution of income to reduce the widening disparity.
  - This also calls for fiscal prudence to cut wasteful spending, find new revenue through asset sales, mining and spectrum auctions, and build investor confidence.

**Conclusion**

With the rise in inflation amidst a second wave, the balancing acumen of the MPC will now be sorely tested. Factors like rising commodity prices, supply chain disruptions are expected to raise overall domestic inflation. Government and RBI need to chalk out a fiscal plan to ensure that the inflation doesn’t burden the common man in the country.

**Value addition**

The different remedies to solve issues related to inflation can be stated as:

- **Monetary Policy:** The monetary policy of the Reserve Bank of India is aimed at managing the quantity of money in order to meet the requirements of different sectors of the economy and to boost economic growth.
  - This contractionary policy is manifested by decreasing bond prices and increasing interest rates.
  - This helps in reducing expenses during inflation which ultimately helps halt economic growth and, in turn, the rate of inflation.

- **Fiscal Policy:** Monetary policy is often seen separate from fiscal policy which deals with taxation, spending by government and borrowing. Monetary policy is either contractionary or expansionary.
  - When the total money supply is increased rapidly than normal, it is called an expansionary policy while a slower increase or even a decrease of the same refers to a contractionary policy.

- It deals with the Revenue and Expenditure policy of the government.
RBI’s Account Aggregator framework is an encouraging stimulus for easing of credit flow in the economy, especially for the MSME sector. Comment (150 words, 10 marks)

Introduction

The Account Aggregator (AA) framework, which was first announced by the Reserve Bank of India (RBI) back in 2016, will now be open for users to access account aggregation services. According to the RBI, AAs are a new class of non-banking financial companies (NBFCs) that offers account aggregation services — retrieving or collecting information of its customer pertaining to their financial assets and consolidating, organizing, presenting it to the customer or any other person as per the instructions of the customer — in exchange for a fee. This has the potential to streamline credit access for MSMEs.

Body

Account Aggregator’s framework

- The AA network has been launched on the basic premise that customer data is generally fragmented and exists in silos in databases of banks, lenders, insurance companies, government bodies, and other entities.

- In order to provide an institutional framework for seamless and secure data sharing digitally between let’s say a borrower and a bank for credit access, the AA network was created instead of dedicating time in collating information such as scanned copies of bank statements, stamped documents from notaries, bank statements, GST returns, cash flow, etc., and then sharing it with the lender.

- Here, financial assets could be bank deposits including fixed deposits, saving deposits, recurring deposits, current deposits, deposits with NBFCs, SIPS, government securities, equity shares, bonds, debentures, ETFs, insurance policies, balances under the National Pension System (NPS), etc.

- With AA services, the user is not required to physically share hard copies of documents from various entities or confidential login details of his/her documents or browse through different sites for information required by financial service providers.

Potential to streamline credit access for MSMEs.

- **Formal credit**: Instead of physical collateral usually required for an MSME loan, this information collateral-based credit underwriting can help the business access a small formal credit.
  - With AA now making it possible to share other credit-worthiness proxies like digital invoices, tax returns, etc., it will help businesses towards cash-flow-based lending from current physical-collateral-based lending thereby getting more people and businesses in the formal credit system.

- **Access to credit due to information**: The fast-tracking of data sharing to broaden the scope of financial services for better products and services can help micro, small, and medium enterprises (MSMEs) access credit in a more convenient and trustworthy manner that eventually might help address the credit crunch faced by MSMEs currently.
• Securing easy credit: Lack of organised records of financial statements pushes MSMEs to secure credit through informal channels. Importantly, out of 6.33 crore MSMEs in India, only 10 per cent have access to formal credit, according to a November 2019 report by PwC and FICCI titled Wider Circle. AA framework can remedy this ill.

• Faster loans: AA system has the potential to revolutionise lending to MSMEs by allowing much faster access of financial data of businesses to lenders and reducing the loan application cycle to a few minutes.

• Tailored services by banks: Account Aggregators are an exciting addition to India’s digital infrastructure as it will allow banks to access consented data flows and verified data. This will help banks reduce transaction costs, which will enable them to offer lower ticket size loans and more tailored products and services to our customers.

• It will also help us reduce frauds and comply with upcoming privacy laws.

• More options to msme’s: The larger benefit can also come in the form of access to alternate data to the banks using the framework.

Conclusion
This would enable banks to potentially not only offer lower ticket size loans, but also possibly reach out to a broader set of customers for loans which in the past they might have rejected. Thus, RBI’s Account Aggregator framework is a step in the right direction and further steps that are needed to make it secure and effective.

Value addition

• The Ministry of Finance had last week in a statement informed that eight banks have been onboarded onto the AA network.

• This included Axis Bank, ICICI Bank, HDFC Bank, and IndusInd Bank that are already sharing data based on user consent while State Bank of India, Kotak Mahindra Bank, IDFC First Bank, and Federal Bank will shortly begin the same.

• The data shared by AAs with banks or other financial institutions with the user’s consent is encrypted and can be decrypted only by the recipient.

• Moreover, the time period for which the institution would have access to the data will be visible to the user at the time of giving consent for sharing the data.

In the current unemployment scenario, a long-term strategy to impart vocational skills will facilitate increase in income of labour as well as generating formal employment.

Elaborate: (250 words)

Difficulty level: Tough

Reference: Live Mint

Why the question:
The recent release of the government’s periodic labour survey shows that the proportion of salaried jobs in urban India fell from 53% between April and June of last year, when a national lockdown was in place, to 48.7% in October-December 2020.

Key Demand of the question:
To write about the importance of vocational training in formalise labour and improve incomes.

Directive word:
Elaborate – Give a detailed account as to how and why it occurred, or what is the context. You must be defining key terms wherever appropriate and substantiate with relevant associated facts.

Structure of the answer:
Introduction:
Write a few introductory lines about the status of unemployment in India citing reports like periodic labour survey/ CMIE.

Body:
First, mention the causes of current status of employment in India.
Next, write the importance of vocational training – better expectation setting and career planning, access to new age skills, upskill and re-skill themselves to keep up with the shift in demand that has been accelerated this year, due to the pandemic.
Next, write about the steps/schemes that have been launched and further steps that are needed to be taken in this regard.

Conclusion:
Conclude with a way forward.

Introduction

India’s unemployment rate for all ages increased to 10.3 per cent in October-December 2020, as compared to 7.9 per cent in the corresponding months a year ago, according to a periodic labour force survey by the National Statistical Office (NSO). According to the Centre for Monitoring Indian Economy (CMIE), the number of the employed fell from 399.38 million in July to 397.78 million in August, with nearly 1.3 million job losses in rural India alone.

As the unemployment scenario is increasing, the focus is on quality vocational training to increase employment. Vocational education also referred to as career education or technical education prepares people to work in various fields of trade, craft, and technician

Body

India has been witnessing a tough jobs environment for the last few years. The situation worsened after the covid outbreak. Though economic activity is gradually returning to normal, the job market is struggling. Across India, at least eight states, including Haryana and Rajasthan, are still reporting double-digit unemployment rates.

Causes of current status of employment in India

- **Covid outbreak**: The rise in the unemployment rate comes in the backdrop of the Covid-19 pandemic, which suspended commercial activities for a long time, leading to people losing jobs countrywide.
- **No formal training**: Only 2% of the total population in between 15-29 years of age have received formal vocational training, and only 8% have received non-formal vocational training.
  - This reduces the employment prospects of people, without speciality skillset that labour market demands.
- **Employer and skill-set mismatch**: The latest India skill Report indicates that only about 47% coming out of educational institutions are employable.
- **Automation**: Most repetitive manual jobs are being replaced by machines. There is a constant need to upskill people.

Importance of vocational training
• Demographic Dividend: India has 65% of its youth in the working age group.
  o Efficient utilization of these population would promote saving and investment rate.

• Better livelihood opportunity: A useful vocational education in agriculture, coupled with access to the formal economy for finance and marketing, could raise the quality of life.
  o E.g., AGRI-UDAAN programme to promote innovation and entrepreneurship in agriculture is a step in the right direction.

• Prepare for Fourth industrial revolution: Low-skilled and repetitive jobs are bound to be eliminated by robots and artificial intelligence under the Fourth Industrial Revolution.
  o This scenario is forcing technical and vocational education and training (TVET) institutions to evolve continuously and sustainably to remain relevant in the future.

• Export resources to aging economies: India would have a talent surplus of around 245.3 million workers by 2030 at a time when the Asia-Pacific region itself would face a talent deficit of 47 million workers.
  o E.g. Japan, Korea need skilled workforce and India can be ready with this as the time is soon approaching.

Government measures to improve vocational education

• The New Education Policy (NEP) 2020 envisaged a right policy as it emphasises on integration of vocational and formal education both at school and higher education levels.
  o The NEP also proposed a pilot ‘hub-n-spoke’ model with the conceptual framework of ITI becoming a ‘Hub’ for providing VET related training and exposure to students of adjoining 5-7 schools.

• Skill India: Skill India is an initiative of the Government of India. It was launched by Prime Minister Narendra Modi on 16 July 2015 with an aim to train over 40 crore people in India in different skills by 2022.
  o The initiatives include National Skill Development Mission, National Policy for Skill Development and Entrepreneurship 2015, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) scheme and the Skill Loan scheme.

• SAMAY: Ministry for Skill Development and Entrepreneurship has launched the Skills Assessment Matrix for Vocational Advancement of Youth (SAMVAY) that provides seamless movement from education to skill.

• Gram Tarang: It is targeting tribal/naxal affected areas and youth who reside here. Training centres are created to train people in Auto CAD, advanced welding on advance machinery funded by NSDC.

• Other new programmes include Nai Manzil for education and skill development of dropouts;

• USTTAD (Upgrading Skills and Training in Traditional Arts/Crafts for Development) to conserve traditional arts/crafts and build capacity of traditional artisans and craftsmen belonging to minority communities;
• Nai Roshni, a leadership training programme for minority women; and MANAS for upgrading entrepreneurial skills of minority youth.

Conclusion
Adequate infrastructure should be provided in schools, and schools also should be properly equipped for teaching and learning. There should be industrial participation in vocational schools and there should be an arrangement for students to visit the industrial areas. This can bridge the gap between employer and employee skill mismatch.

Inclusive growth and issues arising from it
FDI might be one of the important sources and forces behind the economic development of India but it is not the sole solution for its socio-economic issues.

Comment. (250 words)
Difficulty level: Moderate
Reference: Indian Express
Why the question:
Indian foreign direct investment (FDI) inflows crossed another milestone in the middle of the heart-wrenching second wave of the coronavirus by nearly doubling (jumping 90%, to be precise) over the same period last year. Of this, FDI equity inflows rose by 168%.

Key Demand of the question:
To write about the importance of FDI in economic development and the extent it plays a part in addressing socio-economic issues in India.

Directive word:
Comment— here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

Structure of the answer:
Introduction:
Begin by highlighting the fact of rise of FDI equity inflow by 168% in the middle of the second wave of coronavirus.

Body:
In the first part, mention the role FDI plays in the economic development of India and development of its various sectors.
Next, mention the existing socio-economic issues such as poverty, unemployment etc especially being aggravated post the covid pandemic. Further, mention about the need for a right balance between attracting of FDI and promotion of Make in India products in the context of Aatmanirbhar Bharat Abhiyan.

Conclusion:
Conclude by mentioning that the overall objective should aim using FDI to further socio-economic goals of the country to achieve inclusive growth.

Introduction
Foreign direct investment (FDI) is when a company takes controlling ownership in a business entity in another country. It is, thus, a purchase of an interest in a company by a company or an investor located outside its borders. Indian foreign direct investment (FDI) inflows crossed another milestone in the middle of the second wave of the pandemic by nearly doubling over the same period last year. Of this, FDI equity inflows rose by 168%.

Body
FDI: an important source & force behind economic development of India:

- **Economy:**
  - Capital inflows create higher output and jobs.
  - Capital inflows can help finance a current account deficit.
  - Long-term capital inflows are more sustainable than short-term portfolio inflows.
    - For e.g., in a credit crunch, banks can easily withdraw portfolio investment, but capital investment is less prone to sudden withdrawals.
  - Acts as a bridge by filling up budgetary gap, stabilize rupee and improves Balance of Payment situation.

- **Knowledge economy:**
  - Recipient country can benefit from improved knowledge and expertise of foreign multinational.

- **Employment generation:**
  - Creates employment opportunity mainly in service sector and ITEC.
  - Investment from abroad could lead to higher wages and improved working conditions, especially if the MNCs are conscious of their public image of working conditions in developing economies.

- **Infrastructure development:**
  - FDI in construction, railways except operation help in developing projects like high-speed train, Freight corridor, etc.

- **Taxation:**
  - Increased revenue in the form of corporate tax and for community welfare development as CSR.

- **Enhances Competition:**
  - Increase competition among domestic manufacture, may lead to improved quality and services.

FDI: not the sole solution for India’s socio-economic issues:

- The motive of the foreign investors is only profit not the development of country so they often shifts their bases in search of high profits so there is more volatility and speculations in capital market. With their sudden exit, there may be unemployment and high inflation.

- Gives multinationals controlling rights within foreign countries. Critics argue powerful MNCs can use their financial clout to influence local politics to gain favourable laws and regulations.

- FDI does not always benefit recipient countries as it enables foreign multinationals to gain from ownership of raw materials, with little evidence of wealth being distributed throughout society.
- Multinationals have been criticized for poor working conditions in foreign factories. e.g., Apple’s factories in China
- It threatens existing markets that are labour intensive by replacing with technology as in multi brand retail.
- FDI favours short term returns over investments in infrastructure.
- Diffusion of technology in difficult in our country where the state of both human and physical capital is not yet on par with developed countries. So with the increase in technology many unskilled workers lost their jobs.
- In India, FDI is sector specific like finance, IT, Banking, Insurance and outsourcing which predominantly employ skilled workers.
- The capital inflow at times worsen the regional inequalities. It is usually limited to urban and well developed regions like Delhi, Maharashtra etc, and states like Odisha receives around 1% of FDI. This makes richer region more rich and poor regions poorer.
- FDI may be a convenient way to bypass local environmental laws. Developing countries may be tempted to compete on reducing environmental regulation to attract the necessary FDI.

Way forward:
- Role of FDI can at most be seen as complementary and qualitative in nature.
- Government must bring reforms to encourage MSME sector which could boost the rural employment generation.
- Public expenditure for investment in capital formation as infrastructure and energy is for long term benefits of spurring economic activity and creating short term demands.
- Spending on social sectors and India’s pressing issues of poverty, demographic challenge and agrarian stagnation are towards avoiding social unrest and maintain a social security net.
- Government while continuing to simplify processes to attract FDI must realise it’s limited role and thereby take upon itself to make headway towards strengthening pillars of economic development which are health, education, and employment.

Value addition:

FDI in India

FDI is an important monetary source for India’s economic development. Economic liberalisation started in India in the wake of the 1991 crisis and since then, FDI has steadily increased in the country. India, today is a part of top 100-club on Ease of Doing Business (EoDB) and globally ranks number 1 in the greenfield FDI ranking.

Routes through which India gets FDI

- **Automatic route:** The non-resident or Indian company does not require prior nod of the RBI or government of India for FDI.
- **Govt route:** The government’s approval is mandatory. The company will have to file an application through Foreign Investment Facilitation Portal, which facilitates single-window clearance. The application is then forwarded to the respective ministry, which will
approve/reject the application in consultation with the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce. DPIIT will issue the Standard Operating Procedure (SOP) for processing of applications under the existing FDI policy.

**Importance of Domestic Resource Mobilization (DRM):**

In low-income countries confronting widespread poverty, mobilizing domestic resources is particularly challenging, which has led developing countries to rely on foreign aid, foreign direct investment, export earnings and other external resources. Nevertheless, there are compelling reasons to give much more emphasis to DRM.

- Greater reliance on DRM is vital to elevating economic growth, accelerating poverty reduction and underpinning sustained development.
- High-growth economies typically save 20-30 per cent or more of their income in order to finance public and private investment.
- DRM is potentially more congruent with domestic ownership than external resources.
- Foreign aid invariably carries restrictions and conditionality.
- FDI is primarily oriented to the commercial objectives of the investor, not the principal development priorities of the host country.
- DRM is more predictable and less volatile than aid, export earnings, or FDI.

What do you understand by inclusive growth? What are the major impediments to inclusive growth and how can they be overcome in the current scenario? Explain. (250 words)

**Difficulty level:** Moderate

**Reference:** The Hindu, Insights on India

**Key Demand of the question:**
To explain about inclusive growth, impediments to it and measures needed to overcome them.

**Directive word:**
**Explain** – Clarify the topic by giving a detailed account as to how and why it occurred, or what is the context. You must be defining key terms wherever appropriate and substantiate with relevant associated facts.

**Structure of the answer:**

**Introduction:**
Start by defining inclusive growth and its key components.

**Body:**
In the first, in detail write the impediments for inclusive growth – Poverty, lack of adequate employment opportunities, lack of adequate education and skill development and governance deficit, especially in backward regions etc. Mention the impact of covid-19 pandemic on inclusive growth efforts.

Suggest measures and solutions to address these issues.

**Conclusion:**
Conclude that targeted policy measures addressing the above in the current scenario, with the efforts of government policies and programmes aiming at achieving targets in above key sectors can lead to inclusive growth.
The concept of **inclusive growth focuses on equitable growth for all sections of society**. This involves ensuring that fruits of growth and development reach the poor and marginalized sections as well. **Inclusiveness** is a **multi-dimensional concept**. Inequalities that include, social exclusion, discrimination, restrictions on migration, constraints on human development, lack of access to finance and insurance, corruption – are sources of inequality and limit the prospect for economic advancement among certain segments of the population, thereby perpetuating poverty.

**Body:**

**Major impediments to inclusive growth:**

- **Poverty alleviation** is one of the big challenges for India. Eradication of poverty in India is generally only considered to be a long-term goal. Poverty alleviation is expected to make better progress in the next 50 years than in the past, as a trickle-down effect of the growing middle class.

- **Increasing stress on education, reservation of seats in government jobs and the increasing empowerment of women and the economically weaker sections of society**, are also expected to contribute to the alleviation of poverty.

- **Government schemes** should target eradication of both poverty and unemployment (which in recent decades has sent millions of poor and unskilled people into urban areas in search of livelihoods) attempt to solve the problem, by providing financial assistance for setting up businesses, skill honing, setting up public sector enterprises, reservations in governments, etc.

- **Disparity**
  - The disparity between -> Rich and Poor
The disparity between - Urban and Rural

The disparity between - Educated and Uneducated

- **Demography:** We have 550 million young people below 25 age, we have the ready workforce for the world, everything we do today must focus on this population, we need to provide them nutrition food, skills, and job opportunities to grow.

- **Improving the delivery of core public services:** The incomes rise, citizens are demanding better delivery of core public services such as water and power supply, education, policing, sanitation, roads and public health. As physical access to services improves, issues of quality have become more central.

- **Maintaining rapid growth while making growth more inclusive:** The growing disparities between urban and rural areas, prosperous and lagging states, skilled and low-skilled workers, the primary medium term policy challenge for India is not to raise growth from 8 to 10 percent but to sustain rapid growth while spreading its benefits more widely.

- **Developmental challenges:**
  - **Expansion:** Expansion is happening every day in developing countries like India, but perhaps not happening in the pace we would like. We have roads but we need more roads likewise we need to expand energy, infrastructure, facilities, etc.
  
  - **Excellence:** Leaving of our top 5 or 10% quality of our education, our services, our governance, is really not that so great, we must collectively work towards improving quality in everywhere.

  - **Equity:** We need to make sure that the poorest to the poorer can indeed get the best education, health, jobs, and other facilities.

- **Social development** is possible through achieving Women Empowerment and eradicating the regional disparities. Though the Government is giving the women empowerment by giving special reservations, the women’s advancement in India is still not matched the expectations for inclusive growth.

**Measures needed to overcome:**

- Lowering the incidence of poverty and inequality requires a comprehensive strategy.

- Important steps need to be taken like framing policies to improve health, nutrition and education.

- Labour market reforms and reforms of direct taxation will have redistributive effects on the system.

- Schemes like National Rural Employment Guarantee Scheme (NREGS), provide 100 days or more of employment at a wage determined by government are already in progress but there is a need to check the cost effectiveness of these schemes

- Reforms to plug the leakages in the PDS, introduction of GPS tracking, activating vigilance committees, must be undertaken across the country.

- Research needs to be carried out by government agencies to document the ‘best practices’ in the implementation of government schemes.
• Minorities and other excluded groups, including the poor in upper castes, also need special programmes to bring them into the mainstream.

Conclusion:

To achieve inclusiveness, all these dimensions need to be looked into. Institutional and attitudinal changes should be brought about though this will take time. Awareness about inclusiveness and empowerment is required to be created. Reducing poverty is to be taken as key element in our inclusive growth strategy and there has been some progress in that regard.

For achieving a welfare state, it is a constitutional obligation to uplift the weaker sections of the society. In the light of the statement, is caste census vital for taking necessary steps to achieve social equity? Critically analyse. (250 words)

Difficulty level: Moderate
Reference: The Hindu

Why the question:
The clamour for a fresh caste census is getting louder in the country. No political party in the country has publicly opposed the demand as yet, and most have supported the call.

Key Demand of the question:
To write about the importance of caste census in initiating welfare measures of the weaker sections of the society.

Directive word:
Critically analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a balanced judgment on the topic.

Structure of the answer:

Introduction:
Begin by giving various constitutional obligations for achieving welfare state in India.

Body:
In the first part, mention the measures that have been take to uplift the weaker sections in India. Next, mention about caste census in India – mention the data that is collected by it, the need of the data, its uses in policy making etc. Next, write about the downside of caste census – caste-based politics, enhanced demand for affirmative action, widen social rifts etc.

Conclusion:
Conclude with a way forward.

Introduction

Article 38 of the Constitution says “The state shall strive to promote the welfare of the people by securing and protecting as effectively as it may, a social order in which justice – social economic and political – shall pervade all institutions of national life.” This provision provides a broad framework for the establishment of the welfare state.

Body

Measures taken to uplift the weaker sections of the society
• Strong laws against discrimination: Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 was established to protect the marginalized communities against discrimination and atrocities.

• Representation in government: Article 330 and Article 332 of the Constitution respectively provide for reservation of seats in favour of the Scheduled Castes and the Scheduled Tribes in the House of the People and in the legislative assemblies of the States.

• Commission for backward classes: To ensure the well-being and welfare of the weaker sections, there are three commissions which are formed by the Constitution i.e. National Commission for Scheduled Caste, Scheduled Tribes as well as Other backward classes.

• Ayushman Bharat Yojana is a health protection scheme which provides health insurance to the citizens of India, especially the weaker sections of the society.

• Housing for all: This scheme aims to provide a pucca house which has all the necessary amenities to the houseless and to the households living in kutcha and dilapidated houses. The beneficiaries under this scheme are all the houseless and households living in zero, one or two-room houses with kutcha hall and kutcha roof as per SECC (Socio-Economic and Caste Census) data.

• Food security: The Public Distribution System (PDS) evolved as a system of management of scarcity through distribution of food grains at affordable prices. Over the years, PDS has become an important part of Government’s policy for management of food economy in the country.

About caste census

• Every Census in independent India from 1951 to 2011 has published data on Scheduled Castes and Scheduled Tribes, but not on other castes.

• Before that, every Census until 1931 had data on caste.

• The Census provides a portrait of the Indian population, while the SECC is a tool to identify beneficiaries of state support.

• Since the Census falls under the Census Act of 1948, all data are considered confidential, whereas all the personal information given in the SECC is open for use by Government departments to grant and/or restrict benefits to households.

Need for caste census

• Evidence based policymaking: A caste census would actually bring to the particular the number of people who are at the margins, or who are deprived, or the kind of occupations they pursue, or the kind of hold that institutions like caste have on them.

• Better targeting of welfare schemes: The courts in India have often emphatically said that it is important to have adequate data regarding the reservation. So, the caste census is nothing but the collection of data that is necessary for any democratic policymaking.

• Real picture of Indian society: This census will reveal information regarding caste-based marginalisation, deprivation, the kind of jobs pursued by a caste, etc.
Caste census will give authentic information regarding the socio-economic condition and education status of various castes.

- **Misconceptions on caste strength in states**: Resolving ambiguities of caste. In Karnataka, there were claims that among the castes, the Lingayats are the most numerous. So the census can reveal the true information on that.

**Issues related to caste census**

- **Caste divisions and fault lines**: As India seek to eliminate and weaken the notion of caste, a caste census would only strengthen it.

- **Data credibility**: Data gathering itself is a big problem because it can become very invasive. Moreover, there is a fear of data manipulation by the political class to their advantage.

- **Reservations demands**: There is a possibility that caste-based reservations will lead to heartburn among some sections and spawn demands for larger or separate quotas. For instance, Patels, Gujjars, Jats and other castes are demanding reservations. The caste census might induce more such demands in future.
  
  - There will be a demand for breach of 50% cap and political class can exploit this as an election strategy.

- **Social friction**: Caste identification can lead to friction amongst various classes.

- **Counting ascribed identities like caste and religion** is perhaps less progressive than counting achieved identities or capability attributes like education and profession and other tangible endowments like the ownership of land, house and other consumer durables.

**Conclusion**

Going beyond caste association and examining the failure in entitlements, welfare schemes and circumstantial differences will perhaps be more effective in thinking of interventions and in addressing concerns. Further, associating any adversity with caste may at best help focus the intervention but the effort should be on addressing the adversity irrespective of the identity.

The ambiguity around the rights of gig workers and the responsibilities of platforms that allows businesses to treat workers as employees in terms of the control, but without the cost of hiring and social security, needs immediate addressing. Analyse.

(250 words)

**Difficulty level**: Tough

**Reference**: Live Law, Insights on India

**Why the question**: Raising questions of great public and constitutional importance as to whether “Right to Social Security” is a guaranteed fundamental right for all working people, whether employed in formal or informal sectors, “Gig Workers” have approached Supreme Court seeking social security benefits from food delivery apps such as Zomato and Swiggy and taxi aggregator apps Ola and Uber.

**Directive word**: Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.
Structure of the answer:

Introduction:
Begin by defining gig workers.

Body:
In the first talk about the ambiguity in gig economy which results in the exploitation of gig workers – lack of formal employer-employee relationship, remuneration, rigidity of working hours and the working conditions etc.
Next, talk about the immediate measures that are needed to address it – proper regulation, Giving effect to The Code on Social Security, 2020, considering right to social security as a fundamental right etc.

Conclusion:
Conclude with a way forward.

Introduction
“Gig workers” or “app workers” or “platform workers” work in what has come to be known as workers who work in the “informal economy”. The informal economy accounts for 1/3rd the Gross Domestic Product (“GDP”) and 70% of employment in an average developing country.

Body
Ambiguity and in the gig economy

- The main issue with gig economy is the employment relationship, which needs to be more clearly defined.
- Most of the time, it is the ambiguity around the rights of workers and the responsibilities of platforms that allows businesses to treat their gig workers as employees in terms of the control they exert upon them, but without the cost that hiring an employee entails.
- When the labour supply is high and more disposable, as in the case of blue-collar workers, the gig workers have no power to influence payment offerings, and freedom to choose becomes but an illusion.
- Platform delivery people can claim benefits, but not labour rights.
- Present legal framework does not allow them to go to court to demand better and stable pay, or regulate the algorithms that assign the tasks.
- During the last six months, many platform workers have unionised under the All India Gig Workers Union and have protested for continuous dip in pay.
  - For example, Swiggy workers have been essential during the pandemic. Even after that pay of Swiggy workers was reduced from ₹35 to ₹10 per delivery order.
- In the Code on Social Security bill, 2020, platform workers are now eligible for benefits like maternity benefits, life and disability cover, old age protection, provident fund, employment injury benefits, etc.
  - However, eligibility does not mean that the benefits are guaranteed.
  - These are prescriptive in nature.
- The Code states the provision of basic welfare measures as a joint responsibility of the Central government, platform aggregators, and workers.
However, it does not state which stakeholder is responsible for delivering what quantum of welfare.

**Measures needed to address the issues**

- Constant upskilling and reskilling is required for such talents to stay industry relevant and market ready.
- A categorical clarification could ensure that social security measures are provided to workers without compromising the touted qualities of platform work.
- Countries must come together to set up a platform to extend their labour protection to the workforce who are working part-time in their country.
- Companies employing the workforce on a temporary basis should also be made responsible to contribute to their insurance and social obligation other than just their tax commitment.
- There is a need for a socio-legal acknowledgement of the heterogeneity of work in the gig economy, and the ascription of joint accountability to the State and platform companies for the delivery of social services.
- In the Code on Social Security, 2020, platform workers are now eligible for benefits. Actualising these benefits will depend on the political will at the Central and State government-levels and how unions elicit political support.

**Conclusion**

With a population of over 1.3 billion, and a majority of them below the age of 35, relying on the “gig economy” is perhaps the only way to create employment for a large semi-skilled and unskilled workforce. Therefore, it is important to hand-hold this sector and help it grow. We need policies and processes that give clarity to the way the sector should function.

**Value addition**

- Human resources firm TeamLease estimates that 13 lakh Indians joined the gig economy in the last half of 2018-19, registering a 30% growth compared to the first half of the fiscal year.
- Better Place, a digital platform that does background verification and skill development in the informal sector, estimates that of the 21 lakh jobs that will be created in the metros in 2019-20, 14 lakh will be in the gig economy.
- Food and e-commerce delivery will account for 8 lakh positions and drivers will account for nearly 6 lakh positions, says the report, based on 11 lakh profiles in over 1,000 companies.
- Delhi, Bengaluru and other metros are expected to be the biggest drivers of this sector. And two-thirds of this workforce will be under the age of 40.
Investment models

Enumerate the recent structural reforms taken to alleviate the problems of the telecom sector in India. Is 100% foreign direct investment (FDI) through automatic route in the telecom sector a step in the right direction? Comment. (250 words)

Difficulty level: Moderate
Reference: Live Mint, The Hindu

Why the question:
The Cabinet approved several measures to extend a lifeline to the cash-strapped telecom sector.

Key Demand of the question:
To list the reforms in telecom sector and to determine if 100% FDI via automatic route is prudent policy decision.

Directive word:
Comment – here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

Structure of the answer:
Introduction:
Begin by giving context of reforms announced to revitalise the telecom sector.

Body:
Write the major steps by the government to ease telecom sector woes such as redefinition of the much-litigated concept of adjusted gross revenue (AGR), to exclude non-telecom revenue and a four-year moratorium on players’ dues to the government etc.

Next, write about pros and cons of allowing 100% foreign direct investment (FDI) through automatic route.

Conclusion:
Comment on the need to ensure a level playing filed and promote healthy competition in the aftermath of 100% FDI via automatic route.

Introduction

The telecom reforms announced by government are beginning of a new era for sector as well as for boosting investment in the industry that is reeling under debt burden. The Centre announced a slew of financial relaxations, with sectoral liberalization and procedural easing thrown in, and declared a moratorium on AGR dues.

Body

Recent structural reforms taken to alleviate the problems of the telecom sector

- **Rationalization of Adjusted Gross Revenue:** Non-telecom revenue will be excluded on prospective basis from the definition of AGR.

- **Stay on AGR dues payment:** The earlier definition of AGR, backed by the Telecom Department and upheld by the Supreme Court in 2019, had made telcos liable to pay Rs. 1.6 lakh crore.

  - This payment has cash-strapped the telecom sector, which led to the losses of business to telecom companies like Vodafone and established a duopoly (reliance Jio and Bharti Airtel).
  
  - In order to revive the telecom sector, a four-year moratorium on all spectrum and AGR dues has been approved.
- Option to the TSPs to pay the interest amount arising due to the said deferment of payment by way of equity.

- **Bank Guarantees (BGs) rationalized**: Huge reduction in BG requirements (80%) against License Fee (LF) and other similar Levies. No requirements for multiple BGs in different Licence Service Areas (LSAs) regions in the country. Instead, One BG will be enough.

- **Interest rates rationalized / Penalties removed**: From 1st October, 2021, Delayed payments of License Fee (LF)/Spectrum Usage Charge (SUC) will attract interest rate of SBI’s MCLR plus 2% instead of MCLR plus 4%; interest compounded annually instead of monthly; penalty and interest on penalty removed.

- **Spectrum Tenure**: In future Auctions, tenure of spectrum increased from 20 to 30 years.
  - Surrender of spectrum will be permitted after 10 years for spectrum acquired in the future auctions.
  - No Spectrum Usage Charge (SUC) for spectrum acquired in future spectrum auctions.
  - Spectrum sharing encouraged- additional SUC of 0.5% for spectrum sharing removed.

- **FDI**: To encourage investment, **100% Foreign Direct Investment (FDI) under automatic route** permitted in Telecom Sector.

**Procedural Reforms**

- **Auction calendar fixed**: Spectrum auctions to be normally held in the last quarter of every financial year.

- **Ease of doing business promoted**: The cumbersome requirement of licenses under 1953 Customs Notification for wireless equipment removed. Replaced with self-declaration.

- **Know Your Customers (KYC) reforms**: Self-KYC (App based) permitted. E-KYC rate revised to only One Rupee. Shifting from Prepaid to Post-paid and vice-versa will not require fresh KYC.

- **Paper Customer Acquisition Forms (CAF)** will be replaced by digital storage of data. Nearly 300-400 crore paper CAFs lying in various warehouses of TSPs will not be required. Warehouse audit of CAF will not be required.

- **SACFA clearance for telecom towers eased**: DOT will accept data on a portal based on self-declaration basis. Portals of other Agencies (such as Civil Aviation) will be linked with DOT Portal.

**FDI through automatic route: Step in the right direction?**

Till now, only **49% of FDI** was allowed through the automatic route and anything beyond this had to necessarily go through the government route.

**Pros**

- It will **encourage investment** in the country and push **India’s rankings on the innovation index**.
• Healthy competition amongst operators and a stable environment will allow customers to opt for differentiated experiences and taste innovations from around the world.

• The ailing Indian telecommunications industry’s Foreign Direct Investment (FDI) equity inflow in H1FY21 plunged sharply by 99.8% to Rs 50 crore ($7 million) during April-September 2020 quarter from Rs 14,899 crore ($2,178 million) a year ago in the same quarter.

• Post-pandemic uptick in the FDI inflows is required to revive the industry. This move can ease the credit flow into telecom industry.

Cons

• The stakes of Indian companies in telecom sector can now be bought by foreign giants.

• Indian telecom companies may find it difficult to compete with foreign players who can infuse large credit from various business sources.

• As telecommunication is an integral part of national security, 100% FDI and foreign dominance can become threat to security and establishing secure channels of communications.

• Procurement of equipments needs to be monitored thoroughly as big companies can subvert rules and bring in Chinese equipments.

Despite the cons, 100% FDI can transform the ailing telecom sector with necessary safeguards as announced by the government.

Conclusion

Thus, with the reform measures, the government aims to boost the proliferation and penetration of broadband and telecom connectivity in the country. Apart from this the government is looking to boost 4G proliferation, infuse liquidity and create an enabling environment for investment in 5G networks with the new set of reform measures.

Government Budgeting

Enumerate the steps taken so far to expedite and enable resolution of NPAs in India. Critically analyse the potential of National Asset Reconstruction Company Ltd (NARCL) as the “Bad Bank” in addressing the issue of NPAs. (250 words)

Difficulty level: Moderate
Reference: The Hindu
Why the question:
The Union Cabinet has cleared a proposal to provide ₹30,600 crore government guarantee for security receipts issued by the National Asset Reconstruction Company (NARCL) as part of resolution of bad loans.

Key Demand of the question:
To write about the attempts at resolving NPA problem and to analyse the potential of proposed bad bank in resolving the crisis.

Directive word:
Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.
Structure of the answer:

Introduction:
Begin the answer by giving the extent of NPA crisis in India which is expected to exacerbate due to the impact of the pandemic.

Body:
In the first part mention the various steps taken by the government as well as the RBI to address the NPA issue. Insolvency and Bankruptcy Code (IBC), various asset reconstruction companies (ARCs) under Securities and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFAESI) act, Debts Recovery Tribunals etc.
Next, write about National Asset Reconstruction Company Ltd (NARCL) as the “Bad Bank”. Its objectives and functions. Mention how the bad bank will help with the problem of NPA. Also, write about limitations of the proposed bad bank.

Conclusion:
Suggest way forward to address the issue of NPA in India

Introduction
Paving the way for a major clean-up of bad loans in the banking system, the Cabinet on Wednesday cleared a ₹30,600-crore guarantee programme for securities to be issued by the newly incorporated ‘bad bank’ for taking over and resolving non-performing assets (NPAs) amounting to ₹2 lakh crore.

The Reserve Bank of India is in the process of granting a licence for the National Asset Reconstruction Company Limited (NARCL), following which toxic assets worth ₹90,000 crore that banks have already fully provided for, will move to the NARCL.

Body

Overview on Non-Performing Assets

- A nonperforming asset (NPA) refers to a classification for loans or advances that are in default or in arrears. A loan is in arrears when principal or interest payments are late or missed.
- In most cases, debt is classified as nonperforming when loan payments have not been made for a period of 90 days.
- Scheduled commercial banks (SCBs) were carrying NPAs worth Rs 8.96 lakh crore on their balance sheet at the end of March 2020.
- Non-performing assets (NPAs) or bad loans of banks have declined by Rs 61,180 crore to Rs 34 lakh crore at the end of March 31, 2021.

Steps taken so far to expedite and enable resolution of NPAs in India

- The Government has come up with a 4-R Strategy:
  - Recognition: Value assets close to real value,
  - Recapitalization: Infuse equity into sick banks to safeguard capital position,
  - Resolution: Sell off stressed assets, and
  - Reform: Avoid repetition of the problem
• SARFAESI Act, 2002: The Act empowers Banks/ Financial Institutions to recover their NPAs without the intervention of the court, through acquiring and disposing secured assets without the intervention of the court in case of outstanding amounts greater than 1 lakh.
  o SARFAESI, it is alleged, has been used only against the small borrowers primarily from MSME sector.

• Asset Quality Review: RBI has also initiated an Asset Quality Review (AQR) which mandates the banks to report actual NPAs in their balance sheets.

• Insolvency and Bankruptcy code Act, 2016: It provides a time-bound process for resolving insolvency in companies and among individuals.
  o The Government implemented the Insolvency and Bankruptcy Code (IBC) to consolidate all laws related to insolvency and bankruptcy and to tackle Non-Performing Assets (NPA), a problem that has been pulling the Indian economy down for years.
  o According to RBI, banks recovered on average more than 40% of the amount filed through the IBC in 2018-19, against just over 20% in total through the SARFAESI, Lok Adalats and Debt Recovery Tribunals.

• Fugitive Economic Offenders Act, 2018 enacted for effective action against wilful defaulters fleeing Indian jurisdiction.

Potential of NARCL as the “Bad Bank”: Critical Analysis
• While there are 28 ARCs in the private sector, there was a need for government-backed receipts for big ticket resolutions.
  The government guarantee for the proposed security receipts is a positive stepping stone for unlocking stressed assets’ value.
  The upfront cash payment by the NARCL to banks will immediately be accretive for the profitability and capital of the banks, however the ability of the NARCL to resolve these assets in a time-bound manner will be critical for future provision writeback by banks
  The whole idea is to ensure that these assets for which this whole set-up is being created, and the value that is locked in the assets is realised and comes back to the banks; they use it as a growth capital and the banking system becomes more robust
  From the perspective of a commercial bank saddled with high NPA levels, it will help.
  o That’s because such a bank will get rid of all its toxic assets, which were eating up its profits, in one quick move.
  o When the recovery money is paid back, it will further improve the bank’s position.
  o Meanwhile, it can start lending again.
  From the perspective of the government and the taxpayer, the situation is a little more muddled.
  o After all, whether it is recapitalising PSBs laden with bad loans or giving guarantees for security receipts, the money is coming from the taxpayers’ pocket.
While recapitalisation and such guarantees are often designated as “reforms”, they are band aids at best.

The only sustainable solution is to improve the lending operation in PSBs.

- Lastly, the plan of bailing out commercial banks will collapse if the bad bank is unable to sell such impaired assets in the market.

Conclusion

While the objective of NARCL is a novel one, the success lies in its implementation and downstream reforms in banks in lending. The NARCL will have to deliver on the recovery front or risk being a dump yard. Dump yards do not facilitate redistribution of capital in an economy and therefore have a cost.

Value addition

About National Asset Reconstruction Company Ltd (NARCL)

- It will be a five-year guarantee for the National Asset Reconstruction Company Limited (NARCL)-issued security receipts to banks.

- Under the proposed mechanism, the NARCL will acquire assets by making an offer to the lead bank.

- Private sector asset reconstruction (ARCs) firms may also be allowed to outbid the NARCL.

- Separately, public and private lenders will combine forces to set up an India Debt Resolution Company (IDRC) that will manage these assets and try to raise their value for final resolution.

- A 15% cash payment would be made to the banks based on some valuation and the rest will be given as security receipts.

- Once the NARCL and the IDRC have finally resolved the asset, the balance 85% held as security receipts would be given to the banks.

- If the bad bank is unable to sell the bad loan, or has to sell it at a loss, then the government guarantee will be invoked and the difference between what the commercial bank was supposed to get and what the bad bank was able to raise will be paid from the Rs 30,600 crore that has been provided by the government.
Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers

Millet has enormous potential to form a core component in climate smart agriculture whilst offering nutritional and food security benefits. Elaborate. (250 words)

Difficulty level: Moderate

Reference: Live Mint

Why the question:
The United Nations General Assembly adopted a resolution declaring 2023 the International Year of Millets, as proposed by India to the Food and Agriculture Organization (FAO).

Key Demand of the question:
To write about plethora of benefits offered by Millet production with respect to tackling climate change and food security.

Directive word:
Elaborate – Give a detailed account as to how and why it occurred, or what is the context. You must be defining key terms wherever appropriate and substantiate with relevant associated facts.

Structure of the answer:
Introduction:
Begin by mentioning giving context that the United Nations General Assembly adopted a resolution declaring 2023 as the International Year of Millets.

Body:
Mention about the low demand of water and soil fertility needs to cultivate millets and millets as a nutritional package with whole lot of vitamins, minerals, essential fatty acids etc. Also mention that millets also offer a significant cost advantage over maize as a feedstock for bio-ethanol production. Bring in the aspect of food security and ecological benefits.

Conclusion:
Conclude by saying millets are the way forward in the food consumption area as it addresses the twin challenge of both nutritional security as well as climate change.

Introduction
With nearly 60 percent of India’s cultivated area is rain-fed, the damage caused by climate change is huge in agriculture sector. In order to save the farmers from such calamities, climate smart agricultural practices are increasingly promoted by government and other stakeholders. Millets cultivation is one such practice which seems to be the answer to fighting climate change, poverty and malnutrition. The United Nations General Assembly adopted a resolution declaring 2023 the International Year of Millets, as proposed by India to the Food and Agriculture Organization (FAO).

Body:

Millets – a core component in climate smart agriculture:

- Millets help in reducing the atmospheric CO2 and thus contribute in mitigating the climate change. They have a good ability to sequester carbon and so help climate adaptation, particularly the global projection of increased methane emission from rice fields.
- Being hardy crops, they can withstand extreme temperatures, floods and droughts.
- They also help mitigate the effects of climate change through their low carbon footprint of 3,218-kilogram equivalent of carbon dioxide per hectare, as compared to wheat and rice, with 3,968kg and 3,401kg, respectively, on the same measure.
Most bio-ethanol in India is produced using sugar molasses and maize.

However, a study conducted among farmers in Madhya Pradesh showed that bio-ethanol can be created using sorghum (jowar) and pearl millet (bajra), and that this fuel could bring down carbon emissions by about half.

Millets can play a role in India’s sustainability policy interventions. Contemporary research developments have shed light on the influence of millets on energy optimization, climate resilience and ecosystem restoration.

Nutritional and food security benefits:

- Millets are rich source of nutrients. A regular consumption can help to overcome malnutrition among majority of our Indian population. Research has established the following nutritional contributions of millets;
- Millets are richer in calcium, iron, beta-carotene etc. than rice and wheat.
- Millets are rich in dietary fibre, which is negligible in rice. Jowar has 8 times more fibre, ragi has 40 times more calcium and bajra has 8 times more iron and 5 times more both riboflavin and folic acid than rice.
- Millets help check diabetes, improves digestive system, reduces cancer risk and strengthen the immune system.
- With no gluten and low glycaemic index, millet diet is ideal for those with celiac diseases and diabetes.
- Millets contain high amounts of lecithin are useful for strengthening the nervous system.
- Millets are comparatively richer in minerals and fibres.

Way forward:

- As millets farming has been traditionally fitted within the multi cropping farming approach, it needs to be ensured that millets do not follow the monoculture route under the government extension programmes.
- Government should make provisions for incentives to encourage millets cultivation.
- Greater thrust must be given to value addition of the millets to increase demand among the urban consumers.
- Government and CSOs should work together to generate awareness about the benefits conferred by millets and their role in nutrition and carbon sequestration needs.
- Farm mechanisation should be equally prioritized to remove the drudgery associated with its traditional processing of millets.

Conclusion:

The value of millets is evident in their relevance to the sustainable development goals (SDGs) of food security, nutrition and poverty eradication. Brimming with potential, millets can act as a vital cog in the country’s sustainable development wheel if backed by policies that promote their production, incentivize farmers and strengthen market linkages.
Value addition:

Millets cultivation in India:

- Rainfed farming which covers approximately 60 percent of the total farming area in the country contributes 44% of the total food grain production of the country, produces 75% of pulses and more than 90% of sorghum, millet and groundnut from arid and semi-arid regions.

- Millets are traditionally being grown in rainfed conditions especially by the marginal farmers and tribals. Millets are among the oldest cultivated crops in India and rest of the world.

- Millets comprise two main groups of species, major millets includes Sorghum and pearl millets and the minor millets are represented by six cultivated species viz. Little millets, Indian barnyard millets, Kodo millet, Foxtail millets, Finger millets, Proso millet.

- Nearly 60 million acres of land in India are under millet cultivation. India is the largest producer of sorghum and millets, accounting for over 80% of Asia’s production.

- In the last few decades, India has evinced a sharp decline in the area under millets due to several factors. The decrease in cultivated area is about 80% for small millets, 46% for finger millet, 59% for sorghum, and 23% for pearl millet.

- The production of small millets has also decreased significantly from 56.24 in 1960 to 30.52 in 2010. State policies related to crop loan, subsidies, favourable conditions for commercial agriculture, supply of food items like rice, wheat, maida and rava at reasonable cost through the public distribution system (PDS), have shaped the minds of people to neglect minor millets.

- The food policies pursued over the years have pushed many people away from millets despite it being more nutritious than rice and wheat. The approach of selective utilisation of crops and varieties have reportedly threatened agro biodiversity leading to rapid erosion of natural resources and consequently affecting the nutritional security of people.

- It is the impacts of climate change for which the so far unrecognised millets have received a fair recognition. Global bodies are pushing millets farming with the idea that it reduces agriculture’s carbon footprint while ensuring food and nutritional security.

- In India and other parts of the world, a growing number of farmers are switching to millets cultivation. The Consultative Group on International Agriculture Research (CGIAR) has suggested that millets are the way forward for countries like India where food security and nutrient security are a major challenge and as water-guzzling wheat and paddy will face tough challenges with temperatures increase due to global warming.

- CGIAR has estimated that the global production of wheat, rice and maize could decrease by 13 to 20 percent in the coming decades because of climate change. Global agricultural production will have to battle against this loss, even as production needs to rise by an estimated 70 percent to feed the 9 billion people by 2050.

- As India’s agriculture suffers hugely from the vagaries of monsoon, millets which are also known as “famine reserves” for their prolonged and easy storability under ordinary are of great relevance. They are most suitable for mixed and intercropping, thus offer sustainable resources use, food and livelihood security to farmers.
Additionally, given the fact that millets are very good source of nutrients, developing countries like India which reports dramatic rates of malnutrition (around one fifth of the population) particularly among children and women, promotion of millets farming can help in fighting malnutrition.

The 2014 National Council of Applied Economic Research (NCAER) report has revealed the exponential drop in the consumption of hardy millets from 32.9 kg in 1960 to 4.2 kg in 2010 since urbanisation made Indians switch to wheat and rice. Cultivated as dual-purpose crops (food & fodder), millets contribute to the economic efficiency of farming and provide food/livelihood security to millions of households, particularly the small/marginal farmers and the inhabitants of rain fed/remote tribal regions.

Research says that a 1% productivity increase could reduce poverty by 0.65% (National Centre for Agricultural Economics and Policy Research Report, 2011). Increasing productivity is more important in rain fed areas as these are 30% less productive than irrigated areas. It seems that millets could be the answer to fighting climate change, poverty and malnutrition.

Many farmers dependent on rainfed agriculture are highly vulnerable to fluctuations in the monsoon. The government needs to reassess its water management policy in rainfed systems and address the issue holistically. Discuss. (250 words)

**Introduction:**
Begin the answer by giving statistics of what percentage of Indian agriculture is dependent on rain.

**Body:**
In the first part, mention the impact of fluctuation in the monsoon rains on India agriculture. Cite statistics to substantiate your points.

Mention the current policies of the government with respect to rainfed farming. National Mission for Sustainable Agriculture (NMSA) – Rainfed Area Development (RAD), Pradhan Mantri Krishi Sinchai Yojana (PMKSY), Micro Irrigation etc.

Mention the limitations of the above in the aspects of focussing only on irrigation, lack of Supplemental irrigation etc.

Suggest measures that are needed.

**Conclusion:**
Conclude with a way forward to reduce the risk of crop failures and in optimizing productivity of rainfed systems.
India’s farm sector depends heavily on the timely arrival and spread of rainfall during the monsoon season. By extension, the rural economy’s income and, therefore, demand too is guided by rains. With 85% small and marginal landholdings dependent on monsoon, agriculture is highly sensitive to weather abnormalities.

**Body**

**Fluctuations in the monsoon of 2021:**

- The monsoon in India has been a damp squib so far.
- The rainfall deficit over 1 June to 6 September stood at 9% of the long-period average (from 1961 to 2010).
- August has been particularly disappointing with nearly 24% below normal rainfall.
- Data published on 2 September from the Central Water Commission shows live storage available in 130 reservoirs in India stands at almost 65% of their total live storage capacity.
- While both spatial distribution of rainfall and sowing trend indicate limited impact on kharif sowing, there could be a risk to rabi crops if reservoir levels dip further.
- The irregular pattern of rainfall in July-August ‘21, however, impacted agri-related investments including tractor sales

**Why Government needs to reassess its water management policy in rainfed systems:**

- Three out of five farmers in India grow their crops using rainwater, instead of irrigation.
- However, per hectare government investment into their lands may be 20 times lower, government procurement of their crops is a fraction of major irrigated land crops, and many of the government’s flagship agriculture schemes are not tailored to benefit them.
- Even though rainfed agriculture contributes to 60 percent of the value of agriculture GDP of India, there is a clear-cut bias towards irrigated areas when it comes to public investment in agriculture in the country.
- Flagship government schemes, such as seed and fertiliser subsidies and soil health cards, are designed for irrigated areas and simply extended to rainfed farmers without taking their needs into consideration.

**Measures needed for water management in agriculture:**

- Cropping pattern shifts are essential for addressing the country’s water crisis. There is a need to incentivize a shift in cropping patterns towards nutri-cereals, pulses and oilseeds.
- There is a need to shift to water-saving seed varieties even in rice and wheat.
- Protective irrigation for conserving green water is another key measure, along with the protection and rejuvenation of catchment areas.
- Governments have a crucial role in aggregating local initiatives and scaling them up, but at the local level, participatory management by farmers is essential to ensure positive outcomes.
Top-down administrative arrangements will have to be replaced by participatory, bottom-up systems led by farmer producer organizations (FPOs) along the lines of the Kaira District Cooperative Milk Producers’ Union.

Women’s self-help groups (SHGs), which have gone beyond collective credit to various agricultural activities in several states, are closely-related institutions.

Governments need to support the development of these institutions but FPOs and SHGs will have to be the leading agents of change in this new paradigm.

Way forward:

- The need of the hour is to have a balanced approach to give rainfed farmers the same research and technology focus, and production support that their counterparts in irrigation areas have received over the last few decades.

- India needs more R&D in rainfed agriculture and bring in more policy perspective like tweaking of government schemes by considering the needs of rainfed agricultural areas.

- Along with income support to help farmers through agrarian crisis, it is now the time to design better structured interventions for the future.

- Like the ease of doing business, ease of doing farming activities should be done on the parameters of seeds, soil, water in rainfed areas to make agriculture attractive in the long term.

Conclusion

India being a hotspot for climate change and having 15 broad agro-climatic zones and 127 sub-zones, the presentation of climate change and its effects will vary from region to region. Hence a ‘one size fits all’ approach will be detrimental to the agriculture and food security of the country.

Value addition:

Government Measures:

- National Mission for Sustainable Agriculture
- Rainfed Area Development Programme under RKVY.
- NRAA Drought Proofing Action Plan
- Pradhan Mantri Krishi Sinchai Yojana
  - Accelerated Irrigation Benefit Programme (AIBP)
  - PMKSY - Har Khet ko Pani
  - PMKSY - Per Drop More Crop
  - PMKSY - Watershed
  - Micro Irrigation
Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.

A hike in the minimum support price (MSP) does not necessarily result in higher price realisation for farmers and thus needs systemic improvements. Analyse. (250 words)

**Difficulty level:** Moderate

**Reference:** The Hindu

**Why the question:**
The Centre has increased the Minimum Support Price (MSP) for wheat for the upcoming rabi season by 2% hike. Oilseeds and pulses such as mustard, safflower and masoor dal saw higher MSP increases of up to 8% in a bid to encourage crop diversification.

**Key Demand of the question:**
To write about additional measures that are required for price realisation after increment in MSP price.

**Directive word:**
Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.

**Structure of the answer:**

**Introduction:**
Start by writing about MSP, its aims and objectives.

**Body:**
Give the context about recent hike in MSP for certain Rabi crops.

Next, mention the limitations of the hike in MSP. Non-realisation of Price, Lack of procurement, only beneficial for selected crops, Lack of quality control and payment immediacy etc.

Next, write about the systemic measures that are needed for farmers to get remunerative prices. Increasing procurement efficacy, increasing awareness level of farmer and considering price deficiency payments etc.

**Conclusion:**
Conclude with way forward.

**Introduction**

MSP is the rate at which the government buys grains from farmers. Currently, it fixes MSPs for 23 crops grown in both Kharif and Rabi seasons. The government recently hiked the MSP for wheat by Rs. 40 to Rs. 2,015 per quintal and for mustard seed by Rs. 400 to Rs. 5,050 per quintal for the current crop year in order to boost crop area as well as income of farmers.

**Body**

**MSP and higher price realisation are not congruent**

The trouble with MSP is that while it is touted as an all-important factor for farmers promising an instant rise in their income and stability, it also has many drawbacks in implementation. This affects the price realisation of farmers, in reality for several reasons.

- **Methodology:** MSP covers numerous costs such as the cost of sowing (A2) and labour (FL). These considerations are controversial with suggestions that it should be based on comprehensive costs (C2), which also include land rent costs.
- **Inflation**: Too much of a hike on MSP either paves way for inflationary effects on the economy, with a rise in prices of food grains and vegetables, or loss to government treasury if it decides to sell at a lower price as compared to the higher MSP it bought at.

- **Diverse factors**: MSP is a nationwide single price policy. However, the actual costing for production varies from place to place, more severely so in areas lacking irrigation facilities and infrastructure. Thus, not all farmers have equal benefits.

- **Procurement at MSP is flawed**: First, procurement of wheat and paddy for meeting the requirement of the public distribution system (PDS) is undertaken largely by state governments.
  - Of the total procurement of wheat and paddy from farmers, the Food Corporation of India’s (FCI’s) share is less than 10%.
  - In the north-east and many other states, procurement operations are almost non-existent and farmers are forced to sell below MSP.
  - As the experiences of these schemes show, the benefit of higher MSPs for kharif crops or rabi, is unlikely to be available to most farmers as the states lack adequate storage capacity, working capital and manpower for undertaking large-scale procurement of all commodities.
  - The MSP-based procurement system is also dependent on middlemen, commission agents and APMC officials, which smaller farmers find difficult to get access to.

- **Agri-Infrastructure**: Hiking the MSP without investing in infrastructure is just a short-term play. While it does deliver immediate results, long-term developments to back-it up are also important.

**Conclusion**

The government should shift its focus from providing only price support to farmers and focus on building better infrastructure, minimizing the gap between farmers and the market, land reforms, policy reforms to increase flow of credit to farmers, establishing food-processing industries for perishable goods, providing better irrigation facilities etc so, that agriculture emerges as a viable means of sustenance.

**Value addition**

- The Cabinet Committee of Economic Affairs announces MSP for various crops at the beginning of each sowing season based on the recommendations of the Commission for Agricultural Costs and Prices (CACP). The CACP takes into account demand and supply, the cost of production and price trends in the market among other things when fixing MSPs.

- **Factors taken into consideration for fixing MSP include:**
  - Demand and supply;
  - Cost of production;
  - Price trends in the market, both domestic and international;
• The CACP considers both ‘A2+FL’ and ‘C2’ costs while recommending MSP.

• A2 costs cover all paid-out expenses, both in cash and kind, incurred by farmers on seeds, fertilisers, chemicals, hired labour, fuel and irrigation, among others.
• A2+FL covers actual paid-out costs plus an imputed value of unpaid family labour.
• The C2 costs account for the rentals and interest forgone on owned land and fixed capital assets respectively, on top of A2+FL.

Despite small and marginal farmers having a significant role in the agricultural sector, most of them face a plethora of issues. It is high time to shift policy support, for creation of job opportunities focussing on allied activities of agriculture. Examine. (250 words)

Difficulty level: Moderate
Reference: Indian Express

Why the question:
India must shed obsession with ‘marginal farmers’. Their future lies outside farms — in dairy, poultry, food retail

Key Demand of the question:
To write about the issues of small-marginal farmers and suggest steps to improve their livelihood.

Directive word:
Examine – When asked to ‘Examine’, we must investigate the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications.

Structure of the answer:
Introduction:
Begin by giving statistic of small and marginal farmers in India.

Body:
In the first part, write about the issues plaguing the small and marginal farmers in India –
Small holdings make agriculture uneconomic, Perpetual indebtedness, Inability to procure quality seeds, Lack of water and poor yields etc.
Next, examine the need for new opportunities for small and marginal farmers in allied activities like of livestock sector especially dairy, goat and sheep farming etc.
Also, mention ways to make agriculture sustainable and better remunerative for small and marginal farmers.

Conclusion:
Conclude with a way forward.

Introduction
As per the agriculture census of 2015-16, the majority of land holdings in India — 86 percent — are small and marginal. They are less than two hectares in size, and these households’ incomes are
already below what they spend on consumption expenditure. Out of the country’s estimated 93.09 million agricultural households, over 70 per cent possessed less than one hectare land.

Body

Issues plaguing the small and marginal farmers in India

- **Non-remunerative agriculture**: Indian landholdings are so small that makes little marketable surplus. This makes them to go for subsistence agriculture and also difficult for mechanisation.

- **Fragmented holding**: It creates difficulties for marginal farmers to access credit or new technology, severely affecting farm productivity and their incomes, making them entirely dependent on usurious moneylenders.

- **Unorganised agriculture**: No systematic institutional & organisational planning in cultivation, irrigation harvesting & marketing. Minimum purchase price fixed by the government do not reach to the poorest farmers.

- **Poor Government program penetration**: Government has implemented agricultural debt waiver, debt relief scheme etc. Most of the subsides & welfare schemes announced by the central & state government do not reach up to poor farmers. On the contrary, only big land holders are benefited by these schemes.

Opportunities for small and marginal farmers in allied activities

- The Government should take up the responsibility for providing training to the farmers to acquire new skills to reduce the dependence on agriculture. New areas like horticulture, aquaculture, fishery should also be promoted.

- Lands of small farmers can be put to better use with allied activities. This includes dairy, poultry, piggery etc. rather than in regular crop agriculture.

- Activities such as aggregation, grading, packaging, transport, processing, warehousing and retailing of produce. These activities — plus supply of inputs and services to farms — can generate far many more jobs than in the fields themselves.

- The setting up of **farmer producer companies** (FPC) is a way out for small farmers. They can have better incomes as it will lead to aggregating of produce and selling it at better prices.

- **Forming collectives** for marketing their products is essential.
  - Apni mandi in Punjab, Rytu bandhu in Andhra Pradesh, dairy cooperatives are some of the successful cases in marketing.
  - The real challenge lies in organising the small and marginal farmers for marketing and linking them to high value agriculture.
  - Thus, group approach is needed for getting benefits from marketing.

- It may be noted that agricultural technologies are ‘scale neutral’ but not ‘resource neutral’. Small holder oriented research and extension should give importance to cost reduction without reduction in yields.

Way forward
Promoting Exports: To increase export from these areas, 50% relaxation in railway freight as freight subsidy can be provided from dry ports.

Cluster Approach: Special incentives are being offered to develop industrial corridors and clusters but this model should be replicated in the rural and backward areas to provide job opportunities to nearby small and marginal farmers and farm labourers.

Decentralised Microenterprise Ecosystem: A distributed, micro-level factory that can produce solopreneurs and micro-enterprises has to be created and supported in the rural areas. For instance, processing and packaging of vegetables for sale in urban malls can be one such micro-enterprise that is labour intensive.

Investment in Rural areas: Promotion of new industrial investment with a special incentive in backward areas to provide new jobs to rural India. Providing jobs to small, marginal farmers and farm labourers in nearby areas will minimise the rural-to-urban migration.

Minimum Support Price (MSP) as the sole source of growth in Farmers’ income is not all sufficient. A strategy focused on diversification and technology-based value chains in agriculture is needed to double farmers’ income. Discuss. (250 words)

Difficulty level: Moderate
Reference: Indian Express

Why the question:
Situation Assessment Survey (SAS) of agricultural households conducted by the National Statistical Office (NSO). As per this survey, an average agricultural household earned a monthly income of Rs 10,218 in 2018-19 (July-June) in nominal terms.

Key Demand of the question:
To write about need to focus on diversification and technology-based value chains to double farmers income.

Directive word:
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

Structure of the answer:
Introduction:
Begin by writing about the ambitious goal of doubling farmers income.

Body:
First, write the drawbacks of MSP which is not sufficient to improve farmers income.
Next, write about diversification – increase in productivity of crops, increase in production of livestock, intensity and diversification towards high value crops etc.
Next, write about technology-based value chains leading to improved price realization by farmers.

Conclusion:
Conclude with a way forward to double farmers income whilst including recommendations of Ashok Dalwai committee.

Introduction

The government constituted an Inter-ministerial Committee, under Ashok Dalwai, in April 2016 to examine issues relating to the doubling of farmers income. Doubling farmers’ income is possible through increasing total output and better price realization in the market, reduction in production costs, diversification of product, efficient post-harvest management, value addition, etc.

While MSP may serve limited purpose for price realisation, an overhaul of agriculture is needed to ensure sustainable income for farmers.
Body

MSP and higher price realisation are not congruent

The trouble with MSP is that while it is touted as an all-important factor for farmers promising an instant rise in their income and stability, it also has many drawbacks in implementation. This affects the price realisation of farmers, in reality for several reasons.

- **Methodology**: MSP covers numerous costs such as the cost of sowing (A2) and labour (FL). These considerations are controversial with suggestions that it should be based on comprehensive costs (C2), which also include land rent costs.

- **Inflation**: Too much of a hike on MSP either paves way for inflationary effects on the economy, with a rise in prices of food grains and vegetables, or loss to government treasury if it decides to sell at a lower price as compared to the higher MSP it bought at.

- **Diverse factors**: MSP is a nationwide single price policy. However, the actual costing for production varies from place to place, more severely so in areas lacking irrigation facilities and infrastructure. Thus, not all farmers have equal benefits.

- **Procurement at MSP is flawed**: First, procurement of wheat and paddy for meeting the requirement of the public distribution system (PDS) is undertaken largely by state governments.
  - Of the total procurement of wheat and paddy from farmers, the Food Corporation of India’s (FCI’s) share is less than 10%.
  - In the north-east and many other states, procurement operations are almost non-existent and farmers are forced to sell below MSP.
  - As the experiences of these schemes show, the benefit of higher MSPs for kharif crops or rabi, is unlikely to be available to most farmers as the states lack adequate storage capacity, working capital and manpower for undertaking large-scale procurement of all commodities.
  - The MSP-based procurement system is also dependent on middlemen, commission agents and APMC officials, which smaller farmers find difficult to get access to.

- **Agri-Infrastructure**: Hiking the MSP without investing in infrastructure is just a short-term play. While it does deliver immediate results, long-term developments to back-it up are also important.

**Strategy focused on diversification and technology-based value chains in agriculture**

The low level of farmers income and year to year fluctuations in it are a major source of agrarian distress. This distress is spreading and getting severe over time impacting almost half of the population of the country that is dependent on farming for livelihood. Hence a new strategy is needed.

- **ICAR and SAUs** should develop models of farming system for different types of socioeconomic and bio physical settings combining all their technologies in a package with focus on farm income.
This would involve combining technology and best practices covering production, protection and post-harvest value addition for each sub systems with other sub systems like crop sequences, crop mix, livestock, horticulture, forestry.

Such shift requires interdisciplinary approach to develop on knowledge of all disciplines.

- **About one third of the increase in farmers’ income is easily attainable through better price realization, efficient post-harvest management, competitive value chains and adoption of allied activities.**
  
  This requires comprehensive reforms in market, land lease and raising of trees on private land.

- **Agriculture has suffered due to absence of modern capital and modern knowledge.**
  
  There is a need to liberalise agriculture to attract responsible private investments in production and market.

  Similarly, FPOs and FPCs can play big role in promoting small farm business.

- **Evidence is growing about scope of agronomic practices like precision farming to raise production and income of farmers substantially.**

  Similarly, modern machinery such as laser land leveller, precision seeder and planter, and practices like SRI (system of rice intensification), direct seeded rice, zero tillage, raised bed plantation and ridge plantation allow technically highly efficient farming.

  However, these technologies developed by the public sector have very poor marketability.

  They require strong extension for the adoption by farmers

**Conclusion**

The government should shift its focus from providing only price support to farmers and focus on building better infrastructure, minimizing the gap between farmers and the market, land reforms, policy reforms to increase flow of credit to farmers, establishing food-processing industries for perishable goods, providing better irrigation facilities etc so, that agriculture emerges as a viable means of sustenance.

**Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.**

Critically examine as to what extent the draft Consumer Protection (E-Commerce) Rules, 2020 prevent unfair trade practices in e-commerce and promote fair competition. (250 words)

*Difficulty level: Moderate*

*Reference: The Hindu*

*Why the question:*

To protect the interest of consumers, the government has proposed key amendments to the Consumer Protection (e-commerce) Rules, 2020.

*Key Demand of the question:*
To write about Consumer Protection (e-commerce) Rules, 2020 and examine its efficacy.

**Directive word:**

Critically examine – When asked to 'Examine', we have to look into the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a fair judgment.

**Structure of the answer:**

**Introduction:**

Begin by mentioning that to protect the interest of consumers, the government has proposed key amendments to the Consumer Protection (e-commerce) Rules, 2020 which include ban on fraudulent flash sales and mis-selling.

**Body:**

Mention about some of the important provisions brought by the amendment rules such as limitation on flash sale, listing of alternate local retailer while viewing of an import good, restriction on misleading the consumer by influencing the search results etc. Also analyse ability of existing regulatory mechanisms to enforce compliance to the rule and its amendment.

Write about the limitations of the proposed rules in terms of their efficacy in protecting consumers as well as promoting competition.

**Conclusion:**

Conclude by mentioning that the e-commerce industry is fast evolving and it is very pertinent for the regulatory authorities to catch up in order to protect the interests of the consumer.

**Introduction**

The government has proposed changes to the e-commerce rules under the Consumer Protection Act. To protect the interest of consumers, the government has proposed key amendments to the Consumer Protection (e-commerce) Rules, 2020 which include ban on fraudulent flash sales and mis-selling. The objective is to ensure greater compliance and protect the interests of consumers. The rules are driven more by the desire to shield the traditional brick-and-mortar stores, and handicap e-commerce firms, especially the foreign ones.

**Body**

**Major provisions of Consumer Protection (E-Commerce) Rules, 2020**

- To regulate all commercial transactions sold over a digital or electronic network.
- It recognises two e-commerce business models, namely, marketplace model and inventory-based model. Separate rules specified for provisions for marketplace and inventory-based entities.
- All information on the return, refund, exchange, warranty and guarantee, delivery and shipment of the goods or services being sold, including their country of origin, be provided on the platform. These would enable consumers to make an informed decision.
- Clear-cut definition of what constitutes ‘unfair’ trade practice: The government should offer a more clear-cut definition of what constitutes ‘unfair’ trade practice as well as spell out a practical legal remedy to tackle the issue.
- Predatory pricing by e-commerce firms: Risk that predatory pricing by e-commerce firms may result in competition being wiped out and prove detrimental to consumers in the long run.
• **Fixing a cap on delivery charges**: It has also recommended fixing a cap on delivery charges levied by e-commerce firms, as well as providing for penal provisions for violation of rules related to misinformation.

• **Unfair trade practices**: While e-commerce enterprises offer many benefits, the development of the segment has rendered consumers vulnerable to new forms of unfair trade practices, violation of privacy and issues of unattended grievances.

• **Issue of drip pricing**: It should also clearly define ‘drip pricing’ wherein the final cost of the product goes up due to additional charges, and provide for protecting consumers against this by including penal provisions for violation.

**Issues with the provisions of draft Consumer Protection (E-Commerce) Rules, 2020**

• Imposition of the fall-back liability clause on foreign players is unjust. FDI is permitted only in the marketplace model and not the inventory model.

• Under this framework, e-commerce platforms don’t hold inventory, but simply connect buyers and sellers.

• The rules mandate that none of the platform’s related parties can sell directly to the consumer through the platform and also forbid flash sales. However, both of these, adversely impact consumer choice and price.

• The country of origin filter and suggestion of domestic alternatives is a push towards Make in India. However, the interests of consumers, not domestic manufacturers, should be at the core of the consumer protection framework.

• There are issues of overlapping/competing jurisdictions.

• The rules restrain e-commerce firms from making “available any information pertaining to the consumer, to any person, without the consumer’s consent.

• Therefore, the rules give a competing jurisdiction to the Consumer protection authority for the protection of personal data. However, this domain should be ideally dealt with by the data protection authority.

• Similarly, the rules also state that e-commerce entities are prohibited from abusing their dominant positions in the market.

• For this purpose, the “abuse of dominant position” has been given the same meaning as that prescribed under Section 4 of the Competition Act, 2002.

• This may induce consumer protection authority to intervene in the jurisdiction of the Competition Commission of India

**Conclusion**

The lines of demarcation that have been drawn up in the retail landscape — single brand vs multi-brand, online vs. offline, domestic vs. foreign — serve only to protect powerful vested interests, not benefit the consumer as is often proclaimed.

**Value addition:**

**Proposed amendments to the Rules**
To protect the interests of consumers, prevent their exploitation and encourage free and fair competition in the market, the Government of India is sharing a draft of the proposed amendments to the Consumer Protection (E-commerce) Rules, 2020.

The proposed amendments aim to bring transparency in the e-commerce platforms and further strengthen the regulatory regime to curb the prevalent unfair trade practices. The proposed amendments are as follows:

- To ensure compliance of the Consumer Protection Act, 2019 and Rules, appointment of Chief Compliance Officer, a nodal contact person for 24×7 coordination with law enforcement agencies, officers to ensure compliance to their orders and Resident Grievance Officer for redressing of the grievances of the consumers on the e-commerce platform, has been proposed.

- This would ensure effective compliance with the provisions of the Act and Rules and also strengthen the grievance redressal mechanism on e-commerce entities.

- Putting in place a framework for registration of every e-commerce entity with the Department for Promotion of Industry and Internal Trade (DPIIT) for allotment of registration number which shall be displayed prominently on website as well as invoice of every order placed the e-commerce entity.

- Registration of e-commerce entities would help create a database of genuine e-commerce entities and ensure that the consumers are able to verify the genuineness of an e-commerce entity before transacting through their platform.

- To protect the interests of consumers, mis-selling has been prohibited. Selling goods and services entities selling goods or services by deliberate misrepresentation of information by such entities about such goods or services.

- To ensure that consumers are aware about the expiry date of the products they are buying on the e-commerce platform all sellers on marketplace e-commerce entities and all inventory e-commerce entities to provide best before or use before date to enable consumers to make an informed purchase decision.

- To ensure that the domestic manufacturers and suppliers get a fair and equal treatment on the e-commerce platform it has been provided that where an e-commerce entity offers imported goods or services, it shall incorporate a filter mechanism to identify goods based on country of origin and suggest alternatives to ensure fair opposition.

Do you think that petroleum products should be included under the goods and services tax (GST)? Critically Examine. (250 words)

Difficulty level: Moderate
Reference: The Hindu

Why the question:
The GST Council might on Friday consider taxing petrol, diesel and other petroleum products under the single national GST regime, a move that may require huge compromises by both central and state governments on the taxing these products.

Key Demand of the question:
To debate on including petroleum products under the ambit of GST.

Directive word:
Critically examine – When asked to ‘Examine’, we have to look into the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a fair judgment.

Structure of the answer:

Introduction:
Begin by mentioning when GST was introduced the petroleum products under kept out of its ambit and recent discussions have taken place on its inclusion.

Body:
In the first part, mention many economists supporting the proposal as the effective rate under GST regime would be lesser than the current prices, benefit of input credit to certain industries, and equitable revenue distribution between Centre and states etc.

In the next part, Mention about the debate surrounding the topic on lines of states’ apprehension, loss or revenue and autonomy, disgruntlement with the current GST sharing of revenue, GST compensation.

Conclusion:
Pass a comment on whether or not the move is welcome in the current scenario and suggest a way forward.

Introduction

The GST Council is contemplating whether to consider taxing petrol, diesel and other petroleum products under the single national GST regime, a move that may require huge compromises by both central and state governments on the taxing these products. Currently there is a huge variation in VAT imposed on petrol and diesel across states. GST is being thought to be a solution for the problem of near-record high petrol and diesel rates in the country, as it would end the cascading effect of tax on tax.

Body

Background

- When a national GST subsumed central taxes such as excise duty and state levies like VAT on July 1, 2017, five petroleum goods – petrol, diesel, ATF, natural gas and crude oil – were kept out of its purview for the time being.
- This is because both central and state government finances relied heavily on taxes on these products.
- Since GST is a consumption-based tax, bringing Petro-products under the regime would have mean states where these products are sold get the revenue and not ones that currently derive the most benefit out of them because of they being the production centre.

Advantages of bringing petroleum products under GST

- Bringing petroleum products under GST would mean a single rate (18% or 28%) in place of excise duty and state VAT, which will lower fuel prices at pumps.
- Reduced fuel prices will lead to lower transport costs for industries who benefit from increased production and competitiveness.
- Idea of a ‘single nation, single tax’, will be implanted firmly which is aimed at improving production and employment while taxing consumption.
Disadvantages caused to firms due to exclusion of fuel prices under GST will be resolved and the firms can claim input tax credit.

Challenges in bringing petroleum products under GST

- By being able to levy VAT on these products, the state governments have control over their revenues. Bringing petroleum under GST takes away that control as the Centre is the one in charge of fixing the rate of GST.
- Another issue is the rate of VAT on petrol and diesel varies wildly amongst states. While Maharashtra charges up to 40% on petrol, while Andaman and Nicobar charge just 6%.
- Levying a standard rate of GST on petrol would mean that the prices increase dramatically in Andaman and Nicobar, but on the flip side, they would fall in Maharashtra if the cumulative rate is lower than the current rate.
- The current high petrol and diesel prices come at a time when overall revenue collections from GST have been erratic along with slump post pandemic and lockdown.
- Taking an excise duty cut now will add further pressure on government revenues. A Rs2 a litre excise cut in petrol and diesel in October meant revenue loss of about Rs26,000 crore in a full year to the government.

Conclusion

GST followers report that the tax may first be introduced on natural gas and aviation turbine fuel (ATF) – products that are not as sensitive to prices as diesel. Even before thinking of doing this, the Finance Ministry should have data on the impact the introduction of GST (without any cess) would have on the fiscal deficit and compensation outflow.

Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

Analyse the various risks posed by hydropower projects in the Himalayan region? Highlight the impact of climate change on further exacerbating the existing risks. Suggest measures needed to mitigate it. (250 words)

Difficulty level: Moderate

Reference: The Hindu

Why the question:
The Environment Ministry told the SC that it has permitted seven hydroelectric power projects to go ahead. One of them is the 512 MW Tapovan Vishnugadh project, in Joshimath, Uttarakhand that was recently damaged by a flood in February.

Key Demand of the question:
To write about the various risks of constructing hydropower projects in Himalayan regions and how climate change has impacted the risks.

Directive word:
Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.

Structure of the answer:
Introduction:
Begin the answer by writing about the potential of hydropower – a renewable source of energy in the Himalayan region. Draw a small map to show existing projects in that region.

Body:
In the first part, write about the various risks that are associated with hydropower projects – political conflicts, social impact, economic viability and ecological concerns must be written in detail. Substantiate them with examples.

Next, write about how the climate change has enhanced these existing vulnerabilities with respect to the Himalayan region. Mention studies/reports to substantiate your points.

Conclusion:
Suggest measures which must be taken in to account before going ahead with hydropower projects and to ensure safety of the existing ones in the Himalayan region.

Introduction

The central government’s unconditional push on renewable energy (RE), in recent years, has motivated the Himalayan states to seek RE status for the hydropower sector. In an affidavit placed in the Supreme Court recently, the Environment Ministry has disclosed that it has permitted seven hydroelectric power projects, which are reportedly in advanced stages of construction. Ecological fragilities of Himalayas as seen through various disasters like the Kedarnath floods of 2013, the cloudburst in Chamoli district of Uttarakhand in 2021 have all once again underlined the risk of developing hydropower in the Himalayas.

Body

<table>
<thead>
<tr>
<th>Name of the dam</th>
<th>Location</th>
<th>Year of commissioning</th>
<th>Capacity at installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tehri Dam</td>
<td>Tehri</td>
<td>2006</td>
<td>1,000 MW</td>
</tr>
<tr>
<td>Alaknanda Hydroelectric Project</td>
<td>Srinagar (Pauri)</td>
<td>2015</td>
<td>330 MW</td>
</tr>
<tr>
<td>Chilla Power Plant</td>
<td>Pauri</td>
<td>1980-81</td>
<td>144 MW</td>
</tr>
<tr>
<td>Chibro Power Plant</td>
<td>Dehradun</td>
<td>1975</td>
<td>240 MW</td>
</tr>
<tr>
<td>Dhakrani</td>
<td>Herbertpur, Dehradun</td>
<td>1965</td>
<td>34.5 MW</td>
</tr>
<tr>
<td>Maneri Bhali-2</td>
<td>Dharasu Chinyalisaur</td>
<td>2008</td>
<td>304 MW</td>
</tr>
<tr>
<td>Ramganga</td>
<td>Kalagarh (Pauri)</td>
<td>1975</td>
<td>198 MW</td>
</tr>
</tbody>
</table>

Source: Uttarakhand Power Corporation Limited (UPCL)

Various risks posed by hydropower projects in the Himalayan region:

- **Economic, social, technical, institutional and political issues**
  - Evidence from the HKH region shows that local communities living in areas adjoining hydropower projects are the most vulnerable to the impacts of these projects.
  - There are many issues with land acquisition for hydropower project development – local people are displaced, communities are disturbed and livelihoods are disrupted.
As mentioned earlier as well, all these lead to strong resistance to such projects, further hindering hydropower development in the region.

In some cases (for instance in Himachal Pradesh, India), common pool resources such as forests and pastures are also affected, directly impacting the livelihoods of local communities.

Generating alternative livelihoods has been challenging because of the limited skill sets of locally displaced youth.

In Himachal Pradesh and in Jammu and Kashmir, the local people also raised issues about cracks in their houses and shops due to the blasting activities carried out to cut rocks near the inhabited areas.

The incidence of waterborne diseases such as malaria also increased in adjoining areas, as reported by Bose et al.

**Environmental, ecological, physical and geological issues**

India is heavily invested in dam development and growth of hydropower, largely in the Himalaya region plan to construct dams in 28 river valleys in the hills, to cut carbon emissions.

The dangers of such projects include potential earthquake impacts, severe biodiversity loss and, importantly, extreme danger to communities downstream.

The HKH region is very rich in globally significant biodiversity, and large hydropower development projects may disturb or destroy the habitats of several terrestrial plant and animal species.

Studies in the HKH found that deforestation can occur, leading not only to diversity loss in forest ecosystems, but also affecting the communities depending on forests for their livelihoods.

Limited exploitation of hydropower potential is also partly due to problems associated with the geological features of the region.

The HKH region is in a seismic zone, so it is imperative to take earthquake resilience into account during construction, to avoid adverse future impacts on populations.

The ‘river-bed profile’ across the major HEPs of Uttarakhand has changed significantly, suggesting the possibility of disasters in future.

**Impact of climate change on further exacerbating the existing risks:**

The IPCC (Intergovernmental Panel on Climate Change) Special Report on the Ocean and Cryosphere in a Changing Climate found that in the Himalayan ranges, there could be variations in overall water availability, but floods, avalanches and landslides were all forecast to increase.

Changes in monsoonal precipitation could also bring more frequent disasters.

Environmental experts have attributed the glacial melting to global warming.
• **Glacier melt and permafrost thaw** are projected to decrease the stability of mountain slopes and increase the number and area of glacier lakes, which in turn increases the chances of Glacial Lake Outburst Floods.

• The **thermal profile of ice is increasing**, which means that the temperature of ice that used to range from -6 to -20 degrees C, was now -2 degrees C, making it more susceptible to melting.

• It was these changing phenomena that made infrastructure projects in the Himalayan regions risky.

• Moreover, with **increased instances of cloudbursts**, and intense spells of rainfall and avalanches, residents of the region were also placed at increased risk of loss of lives and livelihood.

**Measures needed:**

• The need of the hour is a **pause on hydropower in the Himalayas** in order to stop further devastation.

• Government should adhere to the recommendation made by the expert committees that there should be no hydropower development beyond an elevation of 2,200 metre in the Himalayan region.

• There needs to be a complete stop to subsidies to the hydropower sector based on the ‘green’ tagging. The ‘renewable’ tag for hydropower should be mulled upon.

• An independent scientific review or assessment of the immediate or long-term implications of construction work for hydropower development especially in the Himalayas should be commissioned.

• A revision of terms of reference of impact assessment studies should be done on the basis of this.

• There should be an independent inquiry or audit of the social, environmental and safety norms compliance of all under-construction and operational projects, specifically projects where accidents have already been reported.

• Himalayas needs an **independent dam safety cell** that will have members from all concerned departments.

• India needs a **dam safety law**.

• **Citizens’ engagement and public consent mechanisms** need to be strengthened at the planning stage and a grievance redressal mechanism for addressing issues brought forth by public needs to be put in place post clearance.

**Way forward:**

• **Micro-hydel projects** may also be promoted, as these have less of an adverse social and environmental impact on local communities.

• **Large, ‘smart’ hydropower projects** may be developed, taking into account the economic, environmental and social concerns of local and downstream communities, in addition to national economic benefits.
Technical provisions in smart projects can minimize the impacts on aquatic life and terrestrial ecosystems.

The need is to rigorously study the impact of policy on the Himalayas and confine hydro projects to those with the least impact, while relying more on low impact run-of-the-river power projects that need no destructive large dams and reservoirs.

Value addition:

History of hydropower projects in the Himalayas

- In the aftermath of the Kedarnath floods of 2013 that killed at least 5,000 people, the Supreme Court had halted the development of hydroelectric projects in Uttarakhand pending a review by the Environment Ministry on the role such projects had played in amplifying the disaster.

- A 17-member expert committee, led by environmentalist Ravi Chopra, was set up by the Ministry to examine the role of 24 such proposed hydroelectric projects in the Alaknanda and Bhagirathi basin, which contains the Ganga and several tributaries.

- The Chopra committee concluded that 23 projects would have an “irreversible impact” on the ecology of the region.

- Following this, six private project developers, whose projects were among those recommended to be stopped, said that they should be allowed to continue since their projects had already been cleared for construction before the Kedarnath tragedy.

- The SC directed a new committee to be set up to examine their case. This committee led by Vinod Tare of IIT Kanpur, concluded that these projects could have a significant environmental impact.

- The Environment Ministry in 2015 set up yet another committee led by B.P. Das, that recommended all six projects with design modifications to some, and this gives way to the Environment Ministry’s current stance (permitting these projects). The Power Ministry seconded the Environment Ministry’s stance.

In our quest to achieve renewable energy targets, we need a pragmatic approach towards solar. For India, scaling rooftop solar is a better way forward than large solar parks. Critically Analyse. (250 words)

Difficulty level: Moderate
Reference: scroll.in

Why the question:
As India is inching closer to 2022, it increasingly becomes clear that achieving an installed capacity of 40-gigawatts from the rooftop solar sector by 2022 is nearly impossible.

Key Demand of the question:
To write about the potential of rooftop solar over large solar parks in India.

Directive word:
Critically analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a balanced judgment on the topic.

Structure of the answer:

Introduction:
Begin by giving the context of India’s solar push towards achieving its renewable target commitments made in 2015.

Body:
Firstly, write about the various approach India has taken towards renewable source of energy. Next, mention the solar parks that been created across the country. Cite examples of few. Mention their advantages and disadvantages.
Next, write about rooftop solar. Though small projects but have a lot of potential if scaled up. Mention their pros and cons.

Conclusion:
Mention that India’s must consider solar projects by a through analysis and long-term impacts.

Introduction
The Union government has set a target of producing 40 gigawatt of rooftop solar power by 2022. However, the country could produce only 4.4 GW rooftop solar energy till March 31, 2021, according to the Union Ministry of New and Renewable Energy. Though rooftop solar is still at a very nascent stage in India, the sector has very huge potential.

Body:
Potential of rooftop solar energy:

- Solar rooftop is also a perfect solution for commercial and institutional buildings that operate mostly during the day. Their rooftops can be utilised to generate electricity, and they can, partially or completely, replace diesel generators. This would also help them reduce their electricity bills.
- Solar rooftop power is cheaper than grid-supplied electricity.
- They help minimise transmission and distribution losses, as the generated power is consumed locally.
- In large cities, they can act as a back-up, replacing polluting diesel generator sets.
- Solar rooftop can be harnessed for demand-side management (for example, time-of-day pricing to match household demand with solar generation).
- With falling solar prices and steadily increasing tariffs of distribution companies (discoms), SRT systems are being seen as financially attractive.
- According to a 2014 report by The Energy and Resources Institute, a Delhi-based non-profit, the total market potential for rooftop solar photovoltaic cells in urban settlements of India is around 124 GW.
- Residential consumers account for less than 20 per cent of the total installed capacity of rooftop system.

Challenges:

- The capital expenditure and technical know-how needed for these processes decreases from the first item to the last.
- In other words, silicon production is more capital-intensive than module assembly.
- Most Indian companies are engaged in only module assembly or wafer manufacturing and module assembly.
• No Indian company is involved in silicon production, although a few are making strides towards it.

• **Uncertainty in weather:** The design of a solar power generation system involves either the use of historical weather data or weather forecast methods to predict the future temporal evolution of the solar energy system.

• **Solar irradiance:** Solar irradiance is essential in operation of the PV systems and it can have a significant impact on the efficiency and power quality response of the whole system.

• **Initial Cost:** The high initial cost of solar PV systems is one of the most significant barriers to PV adoption.

• The total funding requirement for installing 40 GW of SRT systems by 2022 is estimated to be over Rs 2.8 lakh crore ($40 billion). A 30 per cent capital subsidy support from the government does cover a portion of this cost. However, most prospective customers either do not have the savings to cover the upfront costs, or are simply unwilling to invest, given the relatively large amount. Also, most customers do not have access to bank financing.

• Lack of easy and cheap funding, and increasing cheap imports from China and Taiwan is hurting the domestic industry.

• **Surplus Power:** In India, net metering system is currently not available and thus the surplus power generated from renewable energy sources cannot be sold to the utilities.

• Transmission & Distribution losses that at approximately 40 percent make generation through solar energy sources highly unfeasible.

• Manufacturers are mostly focused on export markets that buy Solar PV cells. This could result in reduced supplies for the local market.

• **Energy Storage:** Off grid PV systems typically use batteries for storing energy, and the use of batteries could increase the size, cost and complexity of the system.

• **Education:** PV systems present a new and unfamiliar technology; few people understand value and feasibility. This lack of information slows market and technological growth.

**Way Forward:**

• One of the quickest ways for the government to introduce solar rooftop in existing buildings would be to promote the replacement of diesel generators with solar rooftop systems in housing societies

• integrated policies fully supported by States. Industry must get help to set up facilities and avail low cost financing both important elements in China’s rise and be able to invest in intellectual property.

• Manufacturing of solar cell is dominated by a handful number of countries. India, in order to become a world leader in solar power, need for indigenous development of Solar Cells.

• There is an immediate necessity to develop the entire value chain ecosystem to become competitive and achieve sustainable growth in the long run.

• Flexible financing options for individuals to install rooftop solar installations would also support a faster adoption of clean energy.
Focus on last mile connectivity in remote areas through small solar installations

Solar community grids by using a domestically manufactured PV Cells with small power inverters or batteries in every home can ensure power for.

Rapid progress requires a strategic shift to aid competitive domestic manufacturing.

The government would recognise, the idea of building a domestic solar cell manufacturing industry that delivers increasing volumes of quality photovoltaic cells, modules and associated equipment is long in the tooth.

Viewed against the goals set five years ago for the Paris Agreement on climate, of installing 100 GW of solar power by 2022, there could be a sharp deficit.

Combined with low domestic cell manufacturing capacity at 3.1 GW last year, and heavy reliance on China, high ambition must now be supported by aggressive official policy.

Conclusion:

Renewable energy, particularly solar, is crucial to India’s future. Due diligence should be exercised while selecting and procuring solar modules, effective development of photovoltaic cells, including verifying the antecedents of the manufacturer, and independent checks on the quality of the modules imported into India.

Value addition:

Solar Energy Scenario in India:

- India has recently achieved the installed capacity of 100 GW of renewable power but the majority of that – about 78% – is due to large-scale wind and solar power projects.
- Solar power in India is a fast developing industry. The country’s solar installed capacity reached 35.12 GW as of 30 June 2020. India has the lowest capital cost per MW globally of installing solar power plants.
- The Indian government had an initial target of 20 GW capacity for 2022, which was achieved four years ahead of schedule.
- In 2015 the target was raised to 100 GW of solar capacity (including 40 GW from rooftop solar) by 2022, targeting an investment of US$100 billion.
- Rooftop solar power accounts for 2.1 GW, of which 70% is industrial or commercial.
- In addition to its large-scale grid-connected solar photovoltaic (PV) initiative, India is developing off-grid solar power for local energy needs.

The ever-growing uncertainty of crude oil prices and geopolitical instability surrounding its supply, make it imperative for India to approach alternative fuels which are cleaner and cheaper on a mission mode. Critically Analyse. (250 words)

Difficulty level: Moderate

Reference: Live Mint

Why the question:
With Goldman Sachs projecting crude oil to reach $90 per barrel by the year-end, energy import-dependent economies are now in a tizzy.

**Key Demand of the question:**
To write about the need for us to pursue alternative fuels aggressively over crude oil.

**Directive word:**
*Critically analyse* – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a balanced judgment on the topic.

**Structure of the answer:**
**Introduction:**
Begin by giving context about the raising prices of crude.

**Body:**
First, mention the uncertainty regarding its prices and supply chain constraints – especially with respect to hostile geopolitical relations in the middle east. Bring out its impact on India.

Next, write about various alternative fuels in India and its ecological and economic advantages over conventional fuels.

Next, bring out the limitations of alternative fuels vis-à-vis crude oil which hinders its large-scale deployment.

**Conclusion:**
Pass a comment on aggressively pursuing alternative fuels over crude oils – if it will be prudent policy decision.

**Introduction**
The recent surge in crude oil prices prompted both the Reserve Bank of India (RBI) and federal think tank NITI Aayog to flag the need for the Centre and states to contain input cost pressures on businesses. A further surge could put pressure to cut taxes, which may impact revenues and spending.

**Body**

**Crude oil prices and uncertainty: Impact on India**

- **Covid and Volatile prices:** Oil prices have witnessed *sharp volatility in the past.*
  - The price of India’s basket of crude oil that represents the average of Oman, Dubai, and Brent *plunged to $19.90 in April* last year during the first wave of the coronavirus pandemic.

- **Increased taxes:** Last year, when crude prices slumped, Centre raised its taxes which remains in place till date. Any further rise in crude prices will burn the consumer’s pockets further as they have reached more than Rs 100.

- **Trigger events cause price rise:** Crude rallied in the backdrop of *hurricane Ida* impacting US Gulf Coast production and a fall in US inventories. This comes at a time when global oil demand is rising.
  - Stock markets are also dependent on such instances and events which have an impact on the Indian economy.

- **Underinvestment in the global oil and gas sector** could lead to tighter supplies at a time when demand is set to recover.
Whilst that might be beneficial to oil producers in the short term, it also means **significant costs to the global economy** which is in nobody’s long-term interest.

- **OPEC-cartel:** The Organization of the Petroleum Exporting Countries (OPEC) and its allies still have a cap on oil production, while a lack of investment has limited output from the group’s top two African producers.

**Various alternative fuels in India: Advantages**

- **Solar energy:** The country has set an ambitious target of installing **175 GW of renewable energy capacity** by the year 2022, which includes **100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro.**

- **Wind energy:** India is likely to install **54.7 GW of wind capacity** by 2022 against the 60 GW target set by the government.
  - India is a country having around **7,500 km long coastline** and in all of its exclusive economic zones, it has enough **opportunity to harness wind energy.**
  - It is found by the National Institute for Wind Energy (based in Chennai) that western states have larger potential in terms of a stable, steady and a speedy windflow starting from **Gujarat, Maharashtra, Karnataka to Tamil Nadu and Andhra Pradesh.**

- **Bio-diesel:** It is ultra-low Sculpture diesel, which is also an alternative fuel produces even low pollution comparing to CNG.

- **Bio-CNG:** Bio-CNG vehicles with **20% blending in petrol** is also a target the government has been chasing.
  - Conversion of energy from Biomass is a considerable option as it will clean the cities as well as reduce our energy dependence.

- **Hydrogen:** Recently, the government has launched the **National Hydrogen Energy Mission (NHEM) in Budget 2021.** The NHEM proposes a roadmap for using hydrogen as an energy source and augmenting India’s growing renewable capacity with the hydrogen economy.
  - India’s electricity is heavily coal-dependent. Hydrogen will replace fossil fuels, address pollution, and oil-price rise.

**Limitations of alternative fuels and their challenges**

- **Reliability:** By their very nature, solar and wind energy are variable in availability both spatially as well as geographically.
  - They are not available on-demand, unlike thermal or nuclear energy.
  - Therefore, they have to be supplemented with other sources of energy, to maintain the base load.

- **Creation of storage infrastructure:** To overcome the variable nature of renewable sources of energy, it is vital to invest in **affordable batteries of large capacity.**
  - This would require adequate commitment from the government side to inspire confidence in the private sector.
- **Funding:** As already stated, renewable energy requires setting up large projects to harness the economies of scale.
  - This requires a **large initial investment**, which can be a deterrent at the beginning of the project.

- **Integration with the Main Grid:** Integrating the renewables with the main grid is the area India needs to work upon.
  - To accelerate the uptake of renewables, storage and battery solutions is needed in large quantities.

- **Cost factor:** Renewable resources are slightly more expensive than conventional sources.

- **24*7 Power Supply:** Sustainable, round-the-clock power supply along with the storage system is a big challenge ahead.

- **Agricultural Sector:** Much power is consumed in the agricultural sector. The challenge is to provide sufficient power and energy to every household and to the agricultural sector as well.

- **Huge investment is required** to change today's petrol and diesel running vehicles to adopt such technologies.

- **Cultivation of Jathropa and other types of biodiesels** will require land which is very necessary for food crops cultivation.

- **Hydrogen is explosive** and problem of **storage** is there also.

**Conclusion**

India is looking at private investment to raise domestic oil and gas production, which has stagnated for the last few years. A well planned road map is needed, for which NITI Aayog is coming up with **Energy Vision 2035 to achieve India's clean energy goals. Diversified energy mix** is what India needs to focus on, no doubt **solar and wind have a lot of potential**, Hydrogen would be a game changer in Indian energy transition space. India should be working on areas like investment in infrastructure, capacity building and better integration in the near and immediate future.

**Value addition**

**Stats on India's renewable energy**

- **As of July 2021,** India had **96.96 GW of renewable energy capacity,** and represents **25.2% of the overall installed power capacity,** providing a great opportunity for the expansion of green data centres.

- **The country is targeting about 450 Gigawatt (GW) of installed renewable energy capacity by 2030** – about 280 GW (over 60%) is expected from solar.

- **Installed renewable power-generation capacity has increased at a fast pace over the past few years,** posting a **CAGR of 15.51% between FY16 and FY21. India had 94.4 GW of renewable energy capacity in FY21.**
In July 2021, installed capacity of hydro projects in India reached to 46.3 GW, while capacity of small hydro plants reached to 4.8 GW.

By December 2019, 15,100 megawatts (MW) of wind power projects were issued, of which, projects of 12,162.50 MW capacity have already been awarded. Power generation from renewable energy sources in India reached 127.01 billion units (BU) in FY20.

With a potential capacity of 363 GW and with policies focused on the renewable energy sector, Northern India is expected to become the hub for renewable energy in India.

Science and Technology- developments and their applications and effects in everyday life; Achievements of Indians in science & technology; indigenization of technology and developing new technology.

The central and the state governments should go beyond policy guidelines and take steps to meet the future technological and infrastructural demands of Electrical Vehicles (EV). Discuss. (250 words)

Difficulty level: Moderate
Reference: Indian Express

Why the question:
Odisha on Friday announced its Electric Vehicle (EV) Policy and became the 10th state in India to roll out policy guidelines to make the transition from conventional fossil fuel-based mobility to electric mode.

Key Demand of the question:
To write about the need for the government to move ahead of policy guidelines and focus on execution with respect to EV's.

Directive word:
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

Structure of the answer:
Introduction:
Start the answer by mentioning the recent push witnessed across India with respect to EV's.

Body:
Write about the current scenario with respect to EV’s and the potential it has in India. Mention its economic and ecological benefits. Also, write existing schemes and policy measures put in place for its promotion and existing limitations.

Next, write about how the country needs to walk the talk with respect to EV. Suggest measures that are to be taken to harness the full potential of EV’s in India.

Conclusion:
Conclude with a way forward.
• The race among states is a good sign as India fervently seeks to cut down on its fossil fuel consumption.

• About **80% of its oil imports are to meet transport sector needs.** It is also mandated to reduce greenhouse gases emissions by around 35% of 2005 levels in another nine years to meet global climate goals.

• India, by the middle of July, **clocked 1.04 lakh EV sales** in the current fiscal whereas in the last **5 years, the total registrations were 5.17 lakh.**

• But it stands at the cusp of a revolution if it pushes EVs seriously. Between 2001 and 2017, vehicle ownership in the country rose over three-fold.

**Need for Centre and State to go beyond policy guidelines to push electric vehicles sales**

There is a strong believe that **electric infrastructure** will have a massive scale going forward.

• The Centre has extended its **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles scheme** till 2024, with a total budgetary outlay of Rs 10,000 crore.

• The government’s support to manufacturing, R&D, subsidy and scrapping apart, it must show intent by investing robustly in battery manufacturing and charging infrastructure, which is very negligible at present.

• It must also adopt EVs in the public transport system in a big way.

• Central and state governments must lead by inducting EVs for office use.

• For EVs to contribute effectively, we need commensurate efforts in developing an entire ecosystem. This requires a nudge from state and central government.
  
  o Need to shift the focus from subsidizing vehicles to subsidizing batteries because batteries make up 50% of EV costs.
  
  o Work places in tech parks, public bus depots, and Multiplexes are the potential places where charging points could be installed. In Bangalore, some malls have charging points in parking lots.
  
  o Corporates could **invest in charging stations** as **Corporate Social Responsibility compliances.**

• A **longer-term policy priority has to be the setting up of lithium battery production and solar charging infrastructure** of a scale that matches the ambition. The Centre has accepted some of the demands of the auto industry to popularize EVs.

• The government should provide **incentives for CNG vehicles** and should also come out with a **scrap page plan for vehicles** to incentivize customers to buy new vehicles.

**Conclusion**

While various incentives have been provided by the government and new policies are being implemented, it is important that these policies not only focus on reducing the upfront costs of owning an EV but also reduce the overall lifetime costs of ownership.

**Value addition**
FAME Phase II

- In FAME India Phase II, launched from 1 April 2019, emphasis is on electrification of public transportation.

- Electrification of the public & shared transport: It is planned to support 10 Lakhs e-2W (electric – 2-Wheeler), 5 Lakhs e-3W, 55000 4Ws and 7000 Buses.

- Demand incentives on operational expenditure mode for electric buses will be delivered through State/city transport corporation (STUs).

- Incentives will be given to 3-wheeler/4 wheeler vehicles used for public transport or registered for commercial purposes.

- Charging infrastructure: About 2700 charging stations will be established in metros, million plus cities, smart cities and cities of hilly states across the country.

National Electric Mobility Mission Plan

- To encourage reliable, affordable and efficient hybrid and electric vehicles that meet consumer performance and price expectations.

- Government-Industry collaboration for promotion and development of indigenous manufacturing capabilities in hybrid and electric vehicles, required infrastructure, consumer awareness and technology;

- Energy Security: Helping India to emerge as a leader in the electric vehicle Two-Wheeler and Four-Wheeler market in the world by 2020, with total EV sales of 6-7 million units thus enabling Indian automotive Industry to achieve global EV manufacturing leadership and contributing towards National Fuel Security.

- Environment Conservation: Mitigation of the adverse impact of vehicles on the environment.
  - According to NITI Aayog (2019), if India reaches an EV sales penetration of 30 per cent for private cars, 70 per cent for commercial cars, 40 per cent for buses, and 80 per cent for 2 and 3 wheelers by 2030, a saving of 846 million tons of net CO2 emissions and oil savings of 474 MTOE can be achieved.


Examine the scope of monoclonal antibodies for the treatment of Covid-19 patients in India. Also, write about its potential in treating other diseases apart from Covid-19. (250 words)

Difficulty level: Moderate
Reference: Indian Express

Why the question:
In an observational study, Mayo Clinic researchers have found that a monoclonal antibody treatment that have emergency use authorisation from the US Food and Drug Administration — keep high-risk patients out of the hospital when infected with mild to moderate Covid-19.

Key Demand of the question:
To write about the scope MCA and potential in treating covid-19 and other diseases.

Directive word:
Examine – When asked to ‘Examine’, we must investigate the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications.

**Structure of the answer:**

**Introduction:**
Start by giving definition of the monoclonal antibodies.

**Body:**
First, write about how the monoclonal antibody therapy works.
Mention how monoclonal cells can be used in fight against covid such as reducing covid-19 related emergency department visits and hospitalizations when given early to high-risk patients. Comment on its efficacy.
Mention the use of such cells in treatment of other ailments such as cancer, Ebola &HIV.

**Conclusion:**
Write about the need to enhance research and development of monoclonal antibodies in India.

Introduction

A monoclonal antibody is a laboratory-produced protein that functions like the antibodies made by the immune system in response to infection. By binding to a specific molecule on a virus or bacteria — known as an antigen — a monoclonal antibody can enhance or restore the immune response against these pathogens. Monoclonal antibody treatment has been used and tested—trusted source for the Ebola virus and respiratory syncytial virus (RSV), as well as chronic illnesses such as rheumatoid arthritis, multiple sclerosis, inflammatory bowel disease, and more.

Body

How monoclonal antibodies work

Scope of monoclonal antibodies for treatment of Covid-19 patients in India:

- The recent surge in the country’s COVID-19 cases not only highlighted the unpredictable nature of the disease but also made us realise how easily the virus can escalate from mild to severe infections.
- Success stories have been heard in India as well, where select hospitals have started administrating the same.
- In an observational study, Researchers have found that a combination of casirivimab and imdevimab — two monoclonal antibody treatments that have emergency use authorization
from the US Food and Drug Administration — keep high-risk patients out of the hospital when infected with mild to moderate Covid-19.

- Monoclonal antibodies reduced their risk of developing an infection with symptoms by 80%.
- Research suggests that certain monoclonal antibodies can reduce the risk of hospitalization and death in people with asymptomatic or mild COVID-19.
- The ‘pandemic fatigue’ was clearly evident due to overstretching of work during the second wave of Covid in India. Monoclonal therapy would be of great help as the burden on hospitals and healthcare staff would be reduced.
- The therapy is now said to help avoid hospitalisation in high-risk groups, progression to severe disease, and to reduce the usage of steroids.
- This could be a game-changer for India considering the poor state of healthcare facilities especially in the rural areas.
- Scientists are also looking at whether this treatment can reduce the risk of someone with COVID-19 transmitting the virus to others in their household.
- Serum Institute of India (SII) and the International AIDS Vaccine Initiative (IAVI) have announced an agreement with pharmaceutical major Merck to develop SARS-CoV-2 neutralising monoclonal antibodies (mAbs).
- The monoclonal antibody Actemra (tocilizumab) which reduces inflammation that occurs during COVID-19, is used for the treatment of COVID-19 in hospitalized adults and children 2 years and older.

**Potential of monoclonal antibodies in treating other diseases:**

- The majority of the monoclonal antibodies on the market are for noncommunicable diseases, such as autoimmune diseases, like rheumatoid arthritis and cancer.
- In the past few decades, cancer immunotherapies have saved the lives of millions of people around the world. Monoclonal antibodies have transformed the way we treat multiple cancers, including breast cancer, for which the drug Herceptin has been a game changer.
- Monoclonal antibodies could have a huge impact on the way we treat and prevent infectious diseases. And there are already promising signs.
- Two experimental antibody therapies against Ebola are being used to great effect as part of an emergency access programme in the Democratic Republic of the Congo.
- And several antibodies that can act against different strains of HIV are also in development.

**Conclusion**

Millions of people around the world could benefit from existing monoclonal antibody treatments and those in development – including the ones for Covid-19, which could help bring the pandemic to an end. However, monoclonal antibodies should be made more affordable by i) investing in innovative technologies that could lower production costs; ii) create new business models that enable different market approaches in low-, middle- and high-income countries; iii) establish collaborations between public, private and philanthropic organisations to focus on the needs of the developing countries.
Hydrogen Fuel can be a game changer in ensuring energy security as well as our battle against climate change. Discuss the steps taken by India with respect to adoption of hydrogen fuel technology. (250 words)

Difficulty level: Easy
Reference: Live Mint

Why the question:
India is increasingly looking towards hydrogen as an alternative source of fuel to reduce its carbon footprint and meet its growing energy needs.

Key Demand of the question:
To write about the potential of Hydrogen as an eco-friendly fuel and steps India has taken in this regard.

Directive word:
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

Structure of the answer:
Introduction:
Mention the properties of Hydrogen that makes it a favourable alternative to present day fossil fuels.

Body:
Distinguish between Brown, Blue and Green Hydrogen. Mention how the Hydrogen fuel can secure India’s energy security as well as help cut down carbon footprint.
Next mention the steps to promote hydrogen use instead of fossil fuels such as the National Hydrogen Mission being launched to promote Green Hydrogen and the pilot mode of blending hydrogen with CNG for buses in Delhi, various public and private sector initiative etc.
Mention that India has a number of obstacles to overcome in terms of technology, storage, transportation, new materials research, safety standards etc.

Conclusion:
Conclude by writing a way forward to maximise the benefits of the hydrogen fuel technology.

Introduction
Hydrogen is all set to play a significant role in decarbonising energy system. The hydrogen economy is an envisioned future where hydrogen is used as fuel for vehicles, energy storage and long-distance transport of energy. The different pathways to use hydrogen economy includes hydrogen production, storage, transport and utilization.

In this regard, A National Hydrogen Energy Mission (NHEM) to transform transportation in India was announced during Union Budget 2021-22.

Body
Hydrogen Fuel can be a game changer in ensuring energy security as well as our battle against climate change:

- Hydrogen is the lightest and first element on the periodic table. Since the weight of hydrogen is less than air, it rises in the atmosphere and is therefore rarely found in its pure form, H2.

- At standard temperature and pressure, hydrogen is a nontoxic, non-metallic, odourless, tasteless, colourless, and highly combustible diatomic gas.

- Hydrogen fuel is a zero-emission fuel burned with oxygen. It can be used in fuel cells or internal combustion engines. It is also used as a fuel for spacecraft propulsion.
• It can be produced from renewable sources of energy such as solar and wind. At present, there are a number of ways to produce hydrogen, but the most common method is natural gas reforming and electrolysis.

• Its use can reduce CO2 related emissions significantly and decarbonise the entire value chain, enabling reduced emissions and climate change threats.

• Hydrogen can also bridge the gap between supply and demand, in both a centralized or decentralized manner, thereby enhancing the overall energy system flexibility.

• Hydrogen can be used to meet both seasonal and daily supply-demand mismatch in the case of renewables.

• At present, the current global demand for hydrogen is 70 million metric tons, most of which is being produced from fossil fuels—76% from natural gas and 23% from coal and remaining from the electrolysis of water—consumes 6% of the global natural gas and 2% of the global coal. This results in CO2 emissions of around 830Mt/year out of which only 130Mt/year is being captured and used in the fertilizer industry.

• Much of the hydrogen produced is used for oil refining (33%), ammonia (27%), methanol production (11%), steel production via DRI (3%) and others.

Steps taken by India towards hydrogen economy:

• India has a huge edge in green hydrogen production owing to its favourable geographic conditions and presence of abundant natural elements.

• India’s goal of attaining 175 GW of renewable energy capacity by 2022 and to decarbonise by 2050 got an impetus in the Union Budget 2021-22.

• The National Hydrogen Mission has created a road-map for this, and pilot projects on blue hydrogen, green hydrogen and hydrogen compressed natural gas (CNG) have been initiated.

• The proposed introduction of green hydrogen consumption obligations for fertiliser and petroleum refining industry, indicate the country’s resolve to transition towards an economy fuelled by green hydrogen.

• The government has given impetus in scaling up the gas pipeline infrastructure across the length and breadth of the country, and has introduced reforms for the power grid, including the introduction of smart grids. Such steps are being taken to effectively integrate renewable energy in the present energy mix.

• In October 2020, Delhi became the first Indian city to operate Hydrogen-enriched CNG (H-CNG) buses in a six-month pilot project.

• The Government of India is planning to focus on five key areas: (a) Research and Development (b) Demand creation (c) how to use it in the industry (d) how to create an ecosystem (e) how to bring it on board along with international partnerships.

Way forward for India:

• At this juncture, with a calibrated approach, India can uniquely position itself to take advantage with increasing investment in R&D, capacity building, compatible legislation, and the opportunity for creation of demand among its vast population. Such initiatives can
propel India to become the most favoured nation by exporting hydrogen to its neighbours and beyond.

- **Proactive industry collaboration** with the government is key to creating a hydrogen economy in India.

- This will help bring best-in-class hydrogen technology, equipment, and know-how to create a hydrogen supply chain in India — in many cases, these could be “Made in India”.

- By prioritising **national hydrogen demonstration projects**, innovations to further reduce the cost of hydrogen will become prominent locally.

- A **robust policy framework** akin to the one that guided the country’s solar revolution could lead to an increase in production and demand of this green fuel.

- The Government of India should consider setting up a **multi-agency mission to bring multiple ministries, private industry and academia together in a partnership** to scale up the deployment of hydrogen across sectors and industries.

- Having a clear **mid-term and long-term target** inspires confidence in the private sector to make their investments in a new energy source.

- **Tax benefits** that solar and wind receive should be extended to all players in the green hydrogen ecosystem.

- In the short term, the **price of hydrogen** generated through steam methane reformation should be capped.

- **Generating hydrogen from biomass** should also be incentivised as it also has the potential to increase farmer incomes.

- India should ramp up **international collaborations for more effortless transfer of technology and resources** related to hydrogen.

- Low solar prices coupled with pragmatic policies can help India take a leadership position in driving the global hydrogen economy.

- **India needs to secure supplies of raw materials** that are needed for this technology.

- Major institutions like the DRDO, BARC and CSIR laboratories have been developing **electrolyser and fuel-cell technologies**, which could further boost hydrogen economy.

- There is a need for a **manufacturing strategy that can leverage the existing strengths and mitigate threats by integrating with the global value chain**.

**Conclusion**

Green hydrogen is one of the **most promising fuels** in the efforts to reduce carbon emissions. Green hydrogen energy is **vital for India to meet its Nationally Determined Contributions** and ensure regional and national energy security, access and availability. Hydrogen can act as an energy storage option, which would be essential to meet intermittencies (of renewable energy) in the future.

**Value addition:**
**Challenges:**

- One of the biggest challenges faced by the industry for using hydrogen commercially is the **economic sustainability of extracting green or blue hydrogen**.

- The technology used in production and use of hydrogen like **Carbon Capture and Storage (CCS)** and **hydrogen fuel cell technology** are at **nascent stage** and are expensive which in turn increases the cost of production of hydrogen.

- Several challenges in scaling up the commercial-scale operations of green hydrogen persist.

- **Maintenance costs** for fuel cells post-completion of a plant can be costly.

- The commercial usage of hydrogen as a fuel and in industries **requires mammoth investment in R&D of such technology and infrastructure** for production, storage, transportation and demand creation for hydrogen.

- Another key challenge has been portability and transporting the gas.

- Currently costs of production of Green Hydrogen are too high to be competitive with other fuels.

- Most renewable energy resources that can produce low-cost electricity are situated far from potential demand centres.

The central and the state governments should go beyond policy guidelines and take steps to meet the future technological and infrastructural demands of Electrical Vehicles (EV). Discuss. (150 words, 10 marks)

**Introduction**

Many states in India have come out with policies on e-vehicles including Jharkhand and Odisha recently. It is encouraging to see that both Centre and States are introducing measures such as vehicle scrappage, smart city, PLI schemes to give a boost to e-vehicles sales.

**Body**

**Background: India and e-vehicles**

- The race among states is a good sign as India fervently seeks to cut down on its fossil fuel consumption.

- About **80% of its oil imports are to meet transport sector needs**. It is also mandated to reduce greenhouse gases emissions by around 35% of 2005 levels in another nine years to meet global climate goals.

- India, by the middle of July, **clocked 1.04 lakh EV sales** in the current fiscal whereas in the last 5 years, the total registrations were 5.17 lakh.

- But it stands at the cusp of a revolution if it pushes EVs seriously. Between 2001 and 2017, vehicle ownership in the country rose over three-fold.

**Need for Centre and State to go beyond policy guidelines to push electric vehicles sales**

There is a strong believe that **electric infrastructure** will have a massive scale going forward.
The Centre has extended its Faster Adoption and Manufacturing of Hybrid and Electric Vehicles scheme till 2024, with a total budgetary outlay of Rs 10,000 crore.

The government’s support to manufacturing, R&D, subsidy and scrapping apart, it must show intent by investing robustly in battery manufacturing and charging infrastructure, which is very negligible at present.

It must also adopt EVs in the public transport system in a big way.

Central and state governments must lead by inducting EVs for office use.

For EVs to contribute effectively, we need commensurate efforts in developing an entire ecosystem. This requires a nudge from state and central government.
- Need to shift the focus from subsidizing vehicles to subsidizing batteries because batteries make up 50% of EV costs.
- Work places in tech parks, public bus depots, and Multiplexes are the potential places where charging points could be installed. In Bangalore, some malls have charging points in parking lots.
- Corporates could invest in charging stations as Corporate Social Responsibility compliances.

A longer-term policy priority has to be the setting up of lithium battery production and solar charging infrastructure of a scale that matches the ambition. The Centre has accepted some of the demands of the auto industry to popularize EVs.

The government should provide incentives for CNG vehicles and should also come out with a scrappage plan for vehicles to incentivize customers to buy new vehicles.

Conclusion

While various incentives have been provided by the government and new policies are being implemented, it is important that these policies not only focus on reducing the upfront costs of owning an EV but also reduce the overall lifetime costs of ownership.

Value addition

FAME Phase II

- In FAME India Phase II, launched from 1 April 2019, emphasis is on electrification of public transportation.

- Electrification of the public & shared transport: It is planned to support 10 Lakhs e-2W (electric – 2-Wheeler), 5 Lakhs e-3W, 55000 4Ws and 7000 Buses.

- Demand incentives on operational expenditure mode for electric buses will be delivered through State/city transport corporation (STUs).

- Incentives will be given to 3-wheeler/4 wheeler vehicles used for public transport or registered for commercial purposes.

- Charging infrastructure: About 2700 charging stations will be established in metros, million plus cities, smart cities and cities of hilly states across the country.
National Electric Mobility Mission Plan

- To encourage reliable, affordable and efficient hybrid and electric vehicles that meet consumer performance and price expectations.

- **Government-Industry collaboration** for promotion and development of indigenous manufacturing capabilities in hybrid and electric vehicles, required infrastructure, consumer awareness and technology;

- **Energy Security:** Helping India to emerge as a leader in the electric vehicle Two-Wheeler and Four-Wheeler market in the world by 2020, with total EV sales of 6-7 million units thus enabling Indian automotive Industry to achieve global EV manufacturing leadership and contributing towards **National Fuel Security**.

- **Environment Conservation:** Mitigation of the adverse impact of vehicles on the environment.
  - According to NITI Aayog (2019), if India reaches an EV sales penetration of 30 per cent for private cars, 70 per cent for commercial cars, 40 per cent for buses, and 80 per cent for 2 and 3 wheelers by 2030, a **saving of 846 million tons of net CO2 emissions** and oil savings of 474 MTOE can be achieved.

- **Indian Manufacturing Capabilities:** Growth of domestic manufacturing capabilities in the automobile sector. Economic Survey 2019 had noted that India could become the Detroit of Electric Vehicles.

What is Autonomous Driving Technology? Comment on the feasibility of Autonomous Vehicles in India in the near future. (250 words)

**Difficulty level:** Moderate

**Reference:** Live Mint

**Why the question:** Despite many challenges, Indian companies and start-ups have not shied away from entering the Autonomous Driving Technology.

**Key Demand of the question:** To explain Autonomous Driving Technology and to write about its potential and limitations in the Indian scenario.

**Directive word:** Comment – here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

**Structure of the answer:**

**Introduction:**

Begin by briefly explaining about Autonomous Driving Technology.

**Body:**

In the context of AI being the future, mention the rising trend of prototypes being developed in the Autonomous driving sector.

Comment on the feasibility of such vehicles in India through an analysis of Indian road infrastructure, civic sense of traffic rules, upgraded IT infrastructure, need for a legislative amendments, public acceptance of the disruptive technology etc.

**Conclusion:**

Conclude by writing a way forward to a necessary support structure which is robust to handle Autonomous Driving Technology.
Autonomous driving technology normally refers to self-driving vehicles or transport systems that move without the intervention of a human driver. It is capable of sensing the environment around it and utilises a fully automated driving system in order to allow the vehicle to respond to external conditions that a human driver would manage. They rely on sensors, actuators, complex algorithms, machine learning systems, and powerful processors to execute software.

Body

### Levels of Driving Automation

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Manual Control. The human performs all driving tasks (steering, acceleration, braking, etc.).</td>
</tr>
<tr>
<td>1</td>
<td>Driver Assistance. The vehicle features a single automated system (e.g., it monitors and assists with lane keeping).</td>
</tr>
<tr>
<td>2</td>
<td>Partial Automation. The vehicle can perform steering and acceleration. The human still monitors all tasks and can take control at any time.</td>
</tr>
<tr>
<td>3</td>
<td>Conditional Automation. Environmental detection capabilities. The vehicle can perform most driving tasks, but human override is still required.</td>
</tr>
<tr>
<td>4</td>
<td>High Automation. The vehicle performs all driving tasks under specific circumstances. Cybersecurity is required. Human override is still an option.</td>
</tr>
<tr>
<td>5</td>
<td>Full Automation. The vehicle performs all driving tasks autonomously. Zero human attention or interaction is required.</td>
</tr>
</tbody>
</table>

Potential of Autonomous vehicles in India

- Automated vehicles can save lives and reduce injuries since 94% of serious crashes are due to human error, according to the US National Highway Traffic Safety Administration (NHTSA). There are additional economic and additional societal benefits.
- On average, travellers in Delhi, Mumbai, Bengaluru, and Kolkata spend 1.5 hours more on their daily commutes than their counterparts in other Asian cities during peak traffic times, according to an April 2018 study by The Boston Consulting Group (BCG) that was commissioned by Uber.
- With automated vehicles, the time and money spent commuting could be put to better use—automated vehicles could free up as much as 50 minutes each day that had previously been dedicated to driving.
- Automated vehicles may also provide new mobility options to millions who have some form of disability in this country.
- Moreover, shared self-driving car fleets can directly compete with urban taxis and public transport services.
- In India, several Indian start-ups are working on developing AV products for trucks, minibuses and cars, in some cases with a focus on exporting to other countries.

The feasibility of Autonomous Vehicles in India in the near future
• The government of India has taken a clear stand against the introduction of driverless cars in India citing job loss as the primary reason.

• The Indian Motor Vehicles Act, 1988 and the rules, that regulate operation of vehicles in India, do not currently allow fully automated systems. A human driver needs to be in effective control of the vehicle at all times. The laws don’t permit even testing of AVs in India.

• The roads in India are not conducive for self-driving cars when compared with their western counterparts. Cities like Delhi and Mumbai have roads that overflow with vehicular traffic at any given time of the day.

• Drivers in India do not follow the traffic rules. They jump the signals and do not drive in designated lanes. This reckless driving behaviour is something that a driverless car is not trained to pre-empt.

• There are challenges around the economic feasibility of launching driverless cars in India as companies are sceptical of enormous R&D costs as well as the market viability.

• To make matters worse, India ranked 24th out of the 25 countries where KPMG gauged the preparedness for self-driving vehicles through its Autonomous Vehicle Readiness Index 2019.

• AVs will also pose newer and complex privacy issues. Automated cars run based on immense volume of personal data and individual preferences that need protection under the privacy laws – which currently may not be adequate given the nuances with the technology.

• Another critical aspect for automotive players will be protecting and ringfencing their intellectual property.

Conclusion

Despite all the challenges, India cannot look the other way when it comes to adoption of autonomous vehicles. For one, they afford people to utilize their commute time more productively instead of losing it on just driving. They can minimize the human errors that are the prime cause of road accidents and can help save precious lives. Driverless cars also make for an excellent mobility option for people with physical disabilities that prevents them from driving on their own.

Artificial Intelligence (AI) in cybersecurity can provide robust protection and generate rapid responses to cyberthreats. Discuss the advantages of integrating A.I in cybersecurity. (150 words)

Reference: Live Mint

Introduction

Artificial Intelligence (AI) is the branch of computer science concerned with developing machines that can complete tasks that typically require human intelligence. The cyberattack surface in modern enterprise environments is massive, and it’s continuing to grow rapidly. AI systems have immense potential in cybersecurity. It can be trained to generate alerts for threats, identify new types of malware and protect sensitive data for organisations.

Body
Advantages of integrating Artificial Intelligence in cybersecurity

- **Continuous learning**
  - AI uses machine learning and deep learning to learn a business network’s behaviour over time.
  - By recognizing patterns on the network and clustering them, AI proceeds to detect any deviations or security incidents from the norm before responding to them.
  - Potential threats with similar traits to those recorded get blocked early enough.
  - The fact that AI keeps learning makes it difficult for hackers to beat its intelligence.

- **Identifies Unknown Threats**
  - Unknown threats can cause massive damage to a network. Worse still is the impact they can have before you detect, identify, and prevent them.
  - As attackers try new tactics from sophisticated social engineering to malware attacks, it is necessary to use modern solutions to prevent them.
  - AI has proven to be one of the best technologies in mapping and stopping unknown threats from ravaging a company.

- **Handle a Lot of Data**
  - AI’s automated nature allows it to skim through massive chunks of data and traffic.
  - Technology that uses AI, such as a residential proxy, can help you to transfer data.
  - It can also detect and identify any threats hidden in the sea of chaotic traffic.

- **Better Vulnerability Management**
  - AI helps you assess systems quicker than cybersecurity personnel, thereby increasing your problem solving ability manifold.
  - It identifies weak points in computer systems and business networks and helps businesses focus on important security tasks.
  - That makes it possible to manage vulnerability and secure business systems in time.

- **Reduces Duplicative Processes**
  - AI, while mimicking the best of human qualities and leaving out the shortcomings, takes care of duplicative cybersecurity processes that could bore your cybersecurity personnel.
  - It helps check for basic security threats and prevent them on a regular basis.
  - It also analyses your network in depth to see if there are security holes that could be damaging to your network.

- **Accelerates Detection and Response Times**
The best way to detect and respond to threats in time is by integrating AI with cybersecurity.

- **Securing Authentication**
  - AI secures authentication anytime a user wants to log into their account.
  - AI uses various tools such as facial recognition, CAPTCHA, and fingerprint scanners amongst others for identification.
  - The information collected by these features can help to detect if a log-in attempt is genuine or not.

**Conclusion**

The increasing rate of cyber-attacks has posed a great challenge in the recent times. AI gives the much-needed analysis and threat identification that can be used by security professionals to minimize breach risk and enhance security posture. AI can help discover and prioritize risks, direct incident response, and identify malware attacks before they come into the picture. So, even with the potential downsides, AI will serve to drive cybersecurity forward and help organizations create a more robust security posture.

**High Altitude Pseudo Satellite (HAPS)** offer persistence and flexibility to complement satellites and drones in both civilian and defence purposes in India. Elaborate. (250 words)

**Difficulty level:** Moderate

**Reference:** Indian Express

**Why the question:**

Public sector undertaking Hindustan Aeronautics Limited (HAL) is hoping to get approval soon for government funding to the tune of over Rs 700 crore for what is now a self-financed project to develop an indigenous High Altitude Pseudo Satellite (HAPS).

**Key Demand of the question:**

To write about the potential HAPS for both civilian and defence purposes in India.

**Directive word:**

**Elaborate** – Give a detailed account as to how and why it occurred, or what is the context. You must be defining key terms wherever appropriate and substantiate with relevant associated facts.

**Structure of the answer:**

**Introduction:**
Start by defining HAPS.

**Body:**

In brief, write about the working of HAPS, its concept and how it will complement satellites and drones.

Next, write about the application of HAPS in civilian purposes – Humanitarian Assistance, Disaster Relief, high-resolution coverage and emergency communications etc.

Next, write about the application of HAPS in defence purposes – unmanned warfare programme, HAPS could coordinate in strike missions providing versatile intelligence, surveillance etc.

**Conclusion:**

Write a way forward towards capacity building for HAPS in India.
Giving a giant leap to India’s military strike capabilities, State-owned aerospace and defence company Hindustan Aeronautics Limited (HAL) is building a first-of-its-kind High Altitude Pseudo Satellite (HAPS) with a Bengaluru-based start-up to assist Indian Armed Forces in strike missions. It is a Rs. 700 crore project.

Body

High Altitude Pseudo Satellite (HAPS): Concept overview

- HAPS are advanced unmanned flying systems, which operate in the stratosphere at an altitude of 70,000 feet continuously for 2-3 months, to maintain surveillance on the ground below.
- The solar energized system is designed to act as a bridge between Unmanned Aerial Vehicles (UAVs) and conventional satellites.
- The futuristic project has not been designed by any other country yet.
- The design work has already been initiated by HAL and HAPS will be induced by 2024-2025.

Applications of HAPS for civilian purposes

- Telecommunication and Remote sensing: HAPS are cost-effective and are easier to launch. These satellites can be controlled from anywhere using Beyond Line of Sight (BLOS) technology and comprises applications such as telecommunication and remote sensing for both civilian as well as military purposes.
- HAPS is particularly useful in providing communication in remote locations or in deep seas.
- Further, HAPS could offer advantages and complementary applications over satellites, terrestrial infrastructures, and Remotely Piloted Aircraft Systems (RPAS), at a relatively convenient price.
- It can be used in Humanitarian Assistance Disaster Relief (HADR) operations as well during natural disasters.

Applications of HAPS for defence purposes

- Surveillance: These unmanned aircraft may be airplanes, airships, or balloons and are stationed at a fixed place to enable versatile intelligence, surveillance, and reconnaissance (ISR) options thereby eliminating performance and capability limitations of satellites.
- Combat Air Teaming System: CATS drone is a deep penetration aerial attack system that enables a fighter pilot to remain safely within the country’s borders while being able to deploy missiles or swarms of drones deep into enemy territory to destroy targets.
- The stealth drones can carry up to 4 conventional munitions including cruise missiles, runway destroying bombs, and other payloads.
- The aerial vehicle has a capacity of flying at a speed of 350 km into the enemy’s territory guided by “mother ship,” – a light combat aircraft (LCA), which can enter the enemy region, drop its missile and return to base.
- On being aligned with CATS, HAPS can provide communication to the troops in strike missions with live video feeds and images.
Conclusion

Although the development of these unmanned stratospheric vehicles has been underway since the 1990s, the latest advancements in technologies have spurred the momentum with the latest iterations reaching advanced stages in terms of payloads, operations, and capabilities. This development of High-Altitude Pseudo Satellites (HAPS) platforms, which are among the latest aerospace technologies could revolutionize near-space operations.

Evaluate the learnings from the Mars Orbiter Mission (Mangalyaan) for India. How will these help in socio-economic development of India? (250 words)

Difficulty level: Tough

Reference: The Hindu

Why the question:

India’s Mars Orbiter spacecraft has completed seven years in its orbit, well beyond its designed mission life of six months.

Key Demand of the question:

To write about how findings from mission Mangalyaan will help in achieving our developmental goals.

Directive word:

Evaluate – When you are asked to evaluate, you have to pass a sound judgement about the truth of the given statement in the question or the topic based on evidence. You must appraise the worth of the statement in question. There is scope for forming an opinion here.

Structure of the answer:

Introduction:

Begin by writing about Mars Orbiter Mission and its objectives.

Body:

First, in the context of its stated objectives enumerate the learnings and findings from the mission as well as novel technology that was mastered.

Next, write about these will help in our developmental objectives – ‘frugal innovations’ benefits, development of cutting-edge technologies, civilian applications of technology etc.

Conclusion:

Conclude by writing further missions can shape not only the stature of India as a space power but as well aid in its developmental ambitions.

Introduction

The Mars Orbiter Mission (MOM), also called Mangalyaan is a spacecraft orbiting Mars since 24 September 2014. It was launched on November 5, 2013 by the Indian Space Research Organisation (ISRO). It is India’s first interplanetary mission and ISRO has become the fourth space agency to reach Mars, after the Soviet space program, NASA, and the European Space Agency. It is the first Asian nation to reach Mars orbit, and the first nation to do so on its first attempt.
Body

Learnings from the Mars Orbiter Mission (Mangalyaan) for India

- **Cost effectiveness:** It is the most cost-effective interplanetary mission (only 450 crore) NASA spent 4000 crore of rupees on MAVEN.
  - Mangalyaan was accomplished with the lowest cost. It proves that while focusing on cheap cost, quality can still be maintained. Indigenous manufacturing means superior quality.

- **Technological benefits:** The technology used in this mission has potential application in weather forecast, computer tech, health-medicine etc. in future.
  - The main lessons learnt were in the field of design and realisation of systems and subsystems, launch for interplanetary mission, insertion into other planet's orbit, operation of the spacecraft and scientific instruments around Mars orbit.

  - The mission has also revealed a lot about Mars’ atmosphere, volcanic activity, and dust devils, among other things.
    - With this information, planetary scientists can hypothesize about Mars’ distant past.

  - The explorations will help decipher why and how Mars lost its liquid water. This is important question essential for the long-term survival of human beings on Earth.

  - This may give us clues to the presence of microbial life on Mars.

**Socio-economic development of India through Mangalyaan experience**

- **Social benefits:** Space technology and assets are needed for everything from communications to weather forecasting.
  - No nation, especially a developing one, can ignore such technologies.
  - But such technologies and capacities cannot be developed without also developing India’s space capabilities in general, which is why the Mangalyaan is important.

- **Economic Benefits:** As ISRO establishes reputation, gets more contracts from foreign countries and more foreign exchange.

- **National security:** Space is a vital aspect of India’s security.
  - India does not live in a benign neighbourhood and it has had to balance between its development and security needs.

- **Effects on foreign policy:** It can be used as a tool to exercise soft power by sending space missions of third world countries and SAARC countries.

- **Proved the capability and efficiency of ISRO:** After successful competition of MoM ISRO’s status has increased.
  - Now, NASA is talking about setting up a Joint Mars Working Group.
  - The 30 September 2014 signing of an implementing agreement between the National Aeronautics and Space Administration (NASA) and Indian Space Research
Organisation (ISRO) to conduct the joint NASA-ISRO Synthetic Aperture Radar (NISAR) mission.

- Above all, such an achievement works as an inspiration and catalyst for innovation in the country and bringing more youth into the field of science

**Conclusion**

India’s Mars Orbiter spacecraft has completed **seven years in its orbit, well beyond its designed mission life of six months and** has swept with effortless ease into orbit around the Red Planet, making this country the **first to achieve such a feat in a maiden attempt.** It is a tribute to ISRO and the professionalism of its scientists and engineers that every minute detail for such a complex mission could be attended to in the course of a project completed in just one and a half years.
Awareness in the fields of IT, Space, Computers, robotics, nano-technology, biotechnology and issues relating to intellectual property rights.

Explain the challenges in enforcing Intellectual property rights (IPR) in India. A review of National IPR Policy, 2016 should be undertaken in the wake of new and emerging trends in spheres of innovation, which requires concrete mechanisms to protect them. Analyse. (250 words)

Difficulty level: Tough
Reference: New Indian Express

Why the question:
Intellectual property rights law and competition law have been treated as conflicting in nature as their goals seem to be at loggerheads with one another.

Key Demand of the question:
To write about the challenges in enforcing IPR regime in India and to suggest changes to IPR policy in the light of recent developments.

Directive word:
Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.

Structure of the answer:
Introduction:
Start the answer by giving an overview of IPR regime in India. Give stats with respect to applied and approved IPR’s.

Body:
In the first part, give brief overview of National IPR Policy, 2016 and mention the challenges in enforcing Intellectual property rights (IPR) in India – procedural and substantive constraints, legal aspects, conflict with competition law, low awareness, counterfeiting and piracy, IP Financing, etc. Mention IPR regime has gained further significance in light of the Government’s focus on ‘Make in India’ and ‘Atmanirbhar Bharat’ and Covid-19 pandemic.
Next write about changes to National IPR Policy, 2016 such as elaborating more on expanding innovation ecosystem of the country, organization of awareness drives on IPR, comprehensive advisories on increasing R&D activities, encouraging IP financing and involvement of State Governments in evolving a robust IPR regime.

Conclusion:
Conclude by summarising the benefits of a robust IPR regime.

Introduction
India, as a member of the World Trade Organization and signatory to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is obliged to align its intellectual property rights laws with the TRIPS agreement. The challenge comes not only from creating the laws but also their implementation considering the Indian government has to strike a balance between the needs of the country’s citizens and the rights of patent holders.

Body

Overview of IPR and patents in India

- The issue of IP enforcement has become all the more sensitive considering a bulk of patent applications in India are filed by foreign companies.
As an example, the data provided by the Indian IP office in its annual report of 2017-2018 shows the applications filed by foreign applicants were more than double (32,304) compared to those by Indian residents (15,550).

The International IP Index 2017 released by the US Chamber of Commerce, compares India’s intellectual property environment with that of 44 other world economies. The index ranked India at a dismal 43rd position out of 45 countries.

This shows that challenges to innovation continue to exist in India and, therefore, the government needs to build upon the positive rhetoric of its IPR policy with the substantial legislative reforms that innovators need.

Challenges in enforcing IPR in India

- **Priority Watch List: Special 301 Report** issued by the office of the United States Trade Representative (USTR) has India on the “priority watch list”.
  - The report mentions “Over the past year, India took steps to address intellectual property (IP) challenges and promote IP protection and enforcement. However, many of the actions have not yet translated into concrete benefits for innovators and creators, and long-standing deficiencies persist”.
  - India remains one of the world’s most challenging major economies with respect to protection and enforcement of IP.

- **Compulsory licensing:**

  - **Higher level of scrutiny:** Apart from the global patentability requirements for inventions to have novelty, inventive step and industrial applicability, the Indian patent act has specific provisions, covered under Section 3, that makes the patentability of an invention relating to subject matter such as
    - derivatives of a pharmaceutical drug;
    - patentability of stem cells;
    - diagnostic methods and kits
  
  As a result, these inventions face a higher threshold of examination and scrutiny.

  - **Section 3(k)** bars patentability of computer programs per se or algorithms. This objection exists as default for all computer-related inventions.

  - **Section 3(d)** restricts patentability of derivative/s of a pharmaceutical compound. A derivative has to show significant difference in therapeutic efficacy with respect to the parent compound for overcoming the barrier of Section 3(d).

  - **Backlog and time for final decision:** The basic challenge in the enforcement of patent rights is the time it takes for the court to make a final decision. A patent lawsuit ordinarily takes approximately five to seven years to be finally decided after trial, if contested by the other party.

  - **Compulsory licensing:** It is problematic for foreign investors who bring technology as they are concerned about the misuse of CL to replicate their products. It has been impacting India-EU FTA negotiations.
• **Combatting piracy and counterfeit products**: India is key exporter of counterfeit fake products such as foodstuffs, textiles, shoes, electronics etc. Enforcement of the Copyright act is weak, and piracy of copyrighted materials is widespread.

**Review of National IPR policy**

• Fostering an environment where innovation flourishes and a knowledge economy is built, is the key idea. Hence, the policy should have a balance.

• It should encourage patenting and at the same time ensure that patentability of a product/process does not deter further innovation and progress.

• Intellectual Property must not be about patent on paper but dearth of application in reality.

• The organisations such as CSIR and others must be encouraged to work upon socially useful applications of their patents.

• Support for innovation has to be accompanied with instruments that guard local companies against the misuse of market power, coercive bargaining and aggressive acquisition strategies.

• India needs to spread awareness on IPR in public and for its traditional industries to enable fair monetisation of IP Rights.

• It needs to safeguard its patents, copyrights and traditional knowledge by ensuring easy IPR rules.

• Success of India's flagship programmes – Make in India and Start up India – depends on the boost of innovation ecosystem with better IPR safeguardings.

**Conclusion**

Beliefs, attitudes and approaches towards IPRs in India must change for the sake of the ambitions articulated in this government's many initiatives—from **Make in India to Startup India and Smart Cities**. Indian policymakers do not adequately appreciate the fundamental reality that IP laws and policies are meant to incentivize innovation by establishing enforceable boundaries to protect new products, processes, and original works of expression. Adequate safeguards though necessary should not cripple innovation or new technology that can come to India and benefit the larger public.

**Value addition**

**National IPR Policy**

A comprehensive National IPR policy was adopted in May 2016, to stimulate innovation and creativity across sectors, and provide a clear vision regarding IPR issues. Objectives enshrined in the policy are hereunder:

• **IPR Awareness – Outreach and Promotion** – To create public awareness about the economic, social and cultural benefits of IPRs among all sections of society; • **Generation of IPRs** – To stimulate the generation of IPRs;

• **Legal and Legislative Framework** – To have strong and effective IPR laws, which balance the interests of rights' owners with larger public interest
Deep tech ecosystem in India is growing by leaps and bounds. A proper policy support and seamless investment can help leverage Indian Deep tech ecosystem in developing sustainable solutions for the country. Comment. (250 words)

**Difficulty level:** Difficult  
**Reference:** The Hindu

**Why the question:**
Deep tech, a term that includes advanced manufacturing and robotics, blockchain, AI, and big data, remains the fastest growing group globally. Fintech has also experienced substantial growth in last five years, the company noted in a report titled ‘The Global Startup Ecosystem 2021’.

**Key Demand of the question:**
To write about the growth of Deep tech in India, its potential and further steps need to realise its potential.

**Directive word:**
Comment – here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

**Structure of the answer:**
**Introduction:**
Begin by defining the deep tech.

**Body:**
First, write about the various types of deep tech. Give statistics which indicate the rapid growth of deep tech.

Next, write about the potential of deep tech to boost growth in healthcare, education, industrial and manufacturing, and other areas.

Next, write about the policy and investment opportunities that are need for the seamless growth of the sector. to boost growth in healthcare, education, industrial and manufacturing, and other areas

**Conclusion:**
Conclude with a way forward

**Introduction**
Deep tech, a term that includes advanced manufacturing and robotics, blockchain, AI, and big data, remains the fastest growing group globally. They aim at solving the most complex challenges in the world around us.

DeepTech refers to start-ups whose business models are based on high-tech innovation using recent technological advances in multiple areas. At present, 19% of tech start-ups are leveraging DeepTech solutions to build product competencies for their market expansion.

**Body**

Need for proper policy support for Indian Deep tech ecosystem
It has been argued that businesses prosper when governments sleep. But this may not hold true for deep tech start-ups in sensitive sectors.

- **Cost**: The cost of running industries need to come down if India has to compete with the likes of China, and sustain its momentum.

- **Institutional mechanism is needed** to encourage commercial utilisation of research done using government funds.
  
  - It has also been reported that there are proposals of having an overarching body at the centre that will be able to make quicker decisions on labour laws, taxation provisions, and land leasing.

- **Make In India** came at a time when there was a weakening of the global trade except in China and India.
  
  - It identified 25 sectors where India should focus on to build itself as a manufacturing economy. It also looked at developing the country’s start-up ecosystem.

- Focus on further strengthening the existing enterprises, infrastructure and aid in building high-quality enterprises.

- Government must plan to tackle the capital issue and ensure that medium and small business flourish by giving access to affordable funds.

- And lastly, ensure enhancing skills for future manufacturing.

- Globally, there is increased government interest in funding, supporting, and promoting self-reliance in sectors critical to national security like semiconductors, space infrastructure, 5G and defence.
  
  - For example, the US government actively promotes investments, hands out grants and contracts to companies such as SpaceX, BlueOrigin etc.
  
  - They also recently announced a $150 billion funding programme dedicated to semiconductors and chip manufacturing.
  
  - India must emulate the same. Innovation for Defence Excellence (iDEX), a defence ministry initiative, is one such effort to leverage the startup environment to improve India’s defence preparedness, equipment design and manufacturing capabilities.

**Conclusion**

If provided the right kind of support, it is foreseeable that the next generation of unicorns in our country will be powered by the deep tech startups that experiment, scale and forge strong partnerships with local and national governments.
Conservation, environmental pollution and degradation, environmental impact assessment
What is the difference between asset monetisation and privatisation? Form a critical analysis of the government’s idea of monetising operating assets to build fresh assets. (250 words)

Reference: The Hindu

Introduction
The Government has launched a National Monetisation Pipeline, or NMP to sell public assets or, more precisely, their revenue streams over the next four years. The pipeline mostly includes railway stations, freight corridors, airports, and renovated national highway segments (yielding toll revenue) amounting to ₹6-lakh crore, or 3% of GDP in 2020-21. As outlined in the Union Budget, the NMP aims to mobilise resources for financing infrastructure.

Body
Difference between asset monetisation and privatisation

- The NMP differentiates “asset monetisation” from “asset sale” by saying: “Asset Monetisation, as envisaged here, entails a limited period license/lease of an asset, owned by the government or a public authority, to a private sector entity for an upfront or periodic consideration.
- Asset monetisation as defined above is the same as the net present value (NPV) of the future stream of revenue with an implicit interest rate (whether it is a sale or lease of the asset).
- Sale, i.e. transfer of legal ownership of assets is only envisaged in cases such as disinvestment of stake, etc.
- Sale of minority equity does not lead to a change in managerial control.
- Privatisation on the other hand, seeks to sell state-owned companies to the private sector. It is the conversion of government-held assets to private owners, investors, etc.

Idea of monetising operating assets to build fresh assets

- The government has stressed that these are brownfield assets, which have been “de-risked” from execution risks, and therefore should encourage private investment.
- Roads, railways and power sector assets will comprise over 66% of the total estimated value of the assets to be monetised, with the remaining upcoming sectors including telecom, mining, aviation, ports, natural gas and petroleum product pipelines, warehouses and stadiums.
- In terms of annual phasing by value, 15% of assets with an indicative value of Rs 0.88 lakh crore are envisaged for rollout in the current financial year.
- The NMP will run co-terminus with the Rs 100 lakh crore National Infrastructure Pipeline (NIP) announced in December 2019.
• The estimated amount to be raised through monetisation is around **14% of the proposed outlay for the Centre of Rs 43 lakh crore under NIP.**

• NIP will enable a forward outlook on infrastructure projects which will create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive. NIP includes economic and social infrastructure projects.

• Other Initiatives for Infrastructure Development include Scheme of Financial Assistance to States for Capital Expenditure, Industrial corridors, etc.

**Critical Analysis**

• The NMP outlines mainly two modes of implementing the monetisation: public-private partnership (PPP) and "structured financing" to tap the stock market. PPP in infrastructure has been a financial disaster in India, as evident from what happened after the economic boom of 2003-08.

• After the 2008 financial crisis many PPP projects failed to repay bank loans. Banks were left holding the non-performing assets (NPAs).

• Further, as the bulk of the lending was to politically connected corporate houses and firms debt resolution came in the cross-hairs of the political and banking system.

• India is still reeling from the legacy of that period without any easy and credible solutions in sight.

• The slow pace of privatisation in government companies including Air India and BPCL has not been encouraging.

• Further, less-than-encouraging bids in the recently launched PPP initiative in trains indicate that attracting private investors’ interest is not that easy.

• Lack of identifiable revenue streams in various assets is another major problem. This is specifically relevant to the railway sector, which has seen limited PPP success as a mode of project delivery.

**Conclusion**

Until and unless these systemic problems are addressed, the private sector will find it difficult to harness the full value of these assets and the transfer of operatorship to them will offer at best a partial palliative. Private-public investment structures make sense, but they must be modelled to also generate social value.

Hydel power projects in the Himalayan belt are fraught with ecological dangers and needs rethinking on its suitability as well as sustainability. The risk is even more with the effects of climate change. Examine. (250 words)

*Reference: The Hindu*

**Introduction**

The central government’s unconditional push on renewable energy (RE), in recent years, has motivated the Himalayan states to seek RE status for the hydropower sector. In an affidavit placed in
the Supreme Court recently, the Environment Ministry has disclosed that it has permitted seven hydroelectric power projects, which are reportedly in advanced stages of construction. Ecological fragilities of Himalayas as seen through various disasters like the Kedarnath floods of 2013, the cloudburst in Chamoli district of Uttarakhand in 2021 have all once again underlined the risk of developing hydropower in the Himalayas.

Body

<table>
<thead>
<tr>
<th>MAJOR HYDROPOWER PROJECTS IN UTTARAKHAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the dam</td>
</tr>
<tr>
<td>Tehri Dam</td>
</tr>
<tr>
<td>Alaknanda Hydroelectric Project</td>
</tr>
<tr>
<td>Chilla Power Plant</td>
</tr>
<tr>
<td>Chithro Power Plant</td>
</tr>
<tr>
<td>Dhakrani</td>
</tr>
<tr>
<td>Mineri Bhali-2</td>
</tr>
<tr>
<td>Rampangi</td>
</tr>
</tbody>
</table>

Source: Uttarakhand Power Corporation Limited (UPCL)

Hydel power projects in the Himalayan belt are fraught with ecological dangers:

- India is heavily invested in dam development and growth of hydropower, largely in the Himalaya region plan to construct dams in 28 river valleys in the hills, to cut carbon emissions.
- The dangers of such projects include potential earthquake impacts, severe biodiversity loss and, importantly, extreme danger to communities downstream.
- The HKH region is very rich in globally significant biodiversity, and large hydropower development projects may disturb or destroy the habitats of several terrestrial plant and animal species.
- Studies in the HKH found that deforestation can occur, leading not only to diversity loss in forest ecosystems, but also affecting the communities depending on forests for their livelihoods.
- Limited exploitation of hydropower potential is also partly due to problems associated with the geological features of the region.
- The HKH region is in a seismic zone, so it is imperative to take earthquake resilience into account during construction, to avoid adverse future impacts on populations.
- The ‘river-bed profile’ across the major HEPs of Uttarakhand has changed significantly, suggesting the possibility of disasters in future.
Impact of climate change on further exacerbating the existing risks:

- The IPCC (Intergovernmental Panel on Climate Change) Special Report on the Ocean and Cryosphere in a Changing Climate found that in the Himalayan ranges, there could be variations in overall water availability, but floods, avalanches and landslides were all forecast to increase.
- Changes in monsoonal precipitation could also bring more frequent disasters.
- Environmental experts have attributed the glacial melting to global warming.
- Glacier melt and permafrost thaw are projected to decrease the stability of mountain slopes and increase the number and area of glacier lakes, which in turn increases the chances of Glacial Lake Outburst Floods.
- The thermal profile of ice is increasing, which means that the temperature of ice that used to range from -6 to -20 degrees C, was now -2 degrees C, making it more susceptible to melting.
- It was these changing phenomena that made infrastructure projects in the Himalayan regions risky.
- Moreover, with increased instances of cloudbursts, and intense spells of rainfall and avalanches, residents of the region were also placed at increased risk of loss of lives and livelihood.

Measures needed:

- The need of the hour is a pause on hydropower in the Himalayas in order to stop further devastation.
- Government should adhere to the recommendation made by the expert committees that there should be no hydropower development beyond an elevation of 2,200 meter in the Himalayan region.
- There needs to be a complete stop to subsidies to the hydropower sector based on the ‘green’ tagging. The ‘renewable’ tag for hydropower should be mulled upon.
- An independent scientific review or assessment of the immediate or long-term implications of construction work for hydropower development especially in the Himalayas should be commissioned.
- A revision of terms of reference of impact assessment studies should be done on the basis of this.
- There should be an independent inquiry or audit of the social, environmental and safety norms compliance of all under-construction and operational projects, specifically projects where accidents have already been reported.
- Himalayas needs an independent dam safety cell that will have members from all concerned departments.
- India needs a dam safety law.
• **Citizens’ engagement and public consent mechanisms** need to be strengthened at the planning stage and a grievance redressal mechanism for addressing issues brought forth by public needs to be put in place post clearance.

**Way forward:**

• **Micro-hydel projects** may also be promoted, as these have less of an adverse social and environmental impact on local communities.

• **Large, ‘smart’ hydropower projects** may be developed, taking into account the economic, environmental and social concerns of local and downstream communities, in addition to national economic benefits.

• Technical provisions in smart projects can minimize the impacts on aquatic life and terrestrial ecosystems.

• The need is to rigorously study **the impact of policy on the Himalayas and confine hydro projects to those with the least impact**, while relying more on low impact run-of-the-river power projects that need no destructive large dams and reservoirs.

How is climate change impacting agriculture in India? Discuss the steps that are needed to adapt to the ongoing climate crisis. (250 words)

**Difficulty level:** Moderate

**Reference:** [Indian Express](https://www.indianexpress.com/)

**Key Demand of the question:**
To write about the impact of climate change on Indian agriculture and suggest steps to adapt to it.

**Directive word:**
**Discuss** — This is an all-encompassing directive — you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

**Structure of the answer:**
**Introduction:**
Begin the answer by context.

**Body:**
Mention the way in which climate change in impacting agriculture. Reduced yields, encouraging weed and pest proliferation. Changes in precipitation patterns, crop failures and long-run production declines etc. Cite statistics to substantiate your points.

Write about the measures that are needed to mitigate its impact.

**Conclusion:**
Conclude with a way forward.

**Introduction**
India’s agricultural sector, which contributed 16 percent of the country’s GDP in 2017, supports the livelihoods of 43.9 percent of the population. Employment in this sector has decreased by 10 percentage points within a decade, from 53.1 percent in 2008 to 43.9 percent in 2018. The sector is facing manifold problems such as crop failures, non-remunerative prices for crops, and poor returns on yield. Agrarian distress is so severe, that it is pushing many farmers to despair; about 39 percent of the cases of farmer suicides in 2015 were attributed to bankruptcy and indebtedness

**Body**
India’s risk profile to climate change:
India is fortunate to have the monsoon, but it is also uniquely vulnerable to rising temperatures.

India is ranked **14th on the Global Climate Risk Index 2019**.

With **rain-fed agriculture** practised in **over 67% of our total crop area**, weather variability can lead to heavy costs, especially for coarse grains (which are mostly grown in rain-fed areas).

Farms emitted 6 billion tonnes of GHGs in 2011, or **about 13 percent of total global emissions**. That makes the agricultural sector the world’s second-largest emitter, after the energy sector.

With over **60% of Indian agriculture dependent on rainfall**, farming is a high-risk gamble dependent upon the vagaries of the monsoons and local meteorological conditions.

With increasing climate variability, the need for advance warning to farmers of the likely occurrence of irregular or extreme weather events is becoming urgent.

Climate change affects all the three aspects of food security: **availability, access and absorption**. When production decreases, availability of food decreases. Climate change hits poor the most. They don’t have income to buy the food, so their access to it is affected. This, in turn, has an impact on health and affects absorption.

Around **570 million farms** across the world are facing the threat of climate change at present. **Climate change has about 4-9 per cent impact on agriculture** each year. As agriculture contributes 15 per cent to India’s GDP, climate change presumably causes about **5 per cent loss in GDP**.

According to one estimate, they may face a **24-58% decline in household income** and **12-33% rise in household poverty** through exacerbated droughts.

India has **over 120 million hectares suffering from some form of degradation**.

Rise in average temperatures would significantly impact our kharif crops.

**The potential solutions:**

**Climate-smart agriculture:**

- Promotion of conservation farming and dryland agriculture
- Providing each village with timely rainfall forecasts, along with weather-based forewarnings regarding crop pests and epidemics in various seasons
- Refocussing our agricultural research programmes on dryland research, with adoption of drought-tolerant breeds that could reduce production risks by up to 50%.
- A mandate to change planting dates, particularly for wheat, should be considered, which could reduce climate change induced damage by 60-75%.
- Organic agriculture enhances natural nutrient cycling and builds soil organic matter, which can also support resilience to climate change and sequester carbon in soils.

**Finance & Credit:**

Telegram: [https://t.me/insightsIAStips](https://t.me/insightsIAStips)

Youtube: [https://www.youtube.com/channel/UCpoccbCX9GElwaile4HljwA](https://www.youtube.com/channel/UCpoccbCX9GElwaile4HljwA)

Facebook: [https://www.facebook.com/insightsonindia](https://www.facebook.com/insightsonindia)
• Expansion of insurance coverage to cover all crops, and an expanded Rural Insurance Development Fund

• Increase in supply of credit

• Subsidized interest rates through government support

• Basic income by the government to the most vulnerable farmers, as was recently announced

**Compensatory afforestation:**

• India is estimated to have lost over 26 million hectares of forest land and 20 million hectares of grasslands/shrublands between 1880 and 2013. Even now, urbanisation means that India consumes about 135 hectares of forest land a day.

• Actual on-ground implementation of compensatory afforestation is required to ensure we do not lose any net forest cover.

• State CAMPAs (Compensatory Afforestation Fund Management and Planning Authority) should be mandated to meet regularly.

• State-level forest departments record keeping must be revamped, particularly on assessment and realisation of dues on compensatory afforestation activities.

**Empowering the Indian Forest Service:**

• The Indian Forest Service (IFS) also needs restructuring. This needs to remain a specialised service, and not be run through deputations from other services.

• In the environmental domain, the IFS needs to be given the status equivalent to the police or the army.

• State-of-the-art training to its personnel must be provided.

• Specialisation should be encouraged in wildlife, tourism and protection for new recruits.

**Green smart cities:**

• Cities adjacent to national parks and sanctuaries, need to be converted into green smart cities with upgraded waste recycling processes.

**Van Dhan Yojana:**

• The Van Dhan Yojana, as adopted by the State government in Rajasthan, can be scaled up towards building a green mission to save our non-protected forests i.e. outside the existing national parks and sanctuaries.

• Heritage towns should be given more attention — cities like Sawai Madhopur, Bharatpur, Chikmagalur and Jabalpur

**Way forward**

• **Prudent investments and policy reform** can help make India resilient to climate change.

• Any adaptation to ongoing climate change will require **climate justice**.
This can be induced by expansion of joint research and development partnerships like the U.S.-China Clean Energy Research Centre, pairing India’s emerging smart cities with green cities in the West.

India needs to decarbonise by reducing emissions, there is no doubt about that. But the West needs to pay its bills too.

Why is Montreal protocol considered the most successful global climate treaty?
Evaluate India’s performance in implementing the Montreal Protocol. (250 words)

Difficulty level: Easy
Reference: Financial Express

Why the question:
This year’s theme for International Day for the Preservation of the Ozone Layer is ‘Montreal Protocol – Keeping us, our food and vaccines cool’ and the United Nations is celebrating the Montreal Protocol’s unprecedented act of humanity.

Key Demand of the question:
To write about the reasons which makes the Montreal protocol as success and India’s performance with respect to it.

Directive word:
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

Structure of the answer:
Introduction:
Begin the answer by writing about the Vienna Convention and subsequent Montreal Protocol.

Body:
In the first part, write the reasons which make Montreal protocol most successful global climate treaty – negotiations, funds, universal ratification, clear articulation and innovation in substitutes etc.

Next, write about the India’s performance – phasing out Chlorofluorocarbon, Ratifying Kigali Amendment to Montreal Protocol, Hydrochlorofluorocarbons Phase out Management Plan (HPMP) etc. Cite stats with respect to India’s performance and mention its shortcomings.

Conclusion:
Suggest a way forward to completely phase out Ozone depleting substances.

Introduction
The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption of nearly 100 ozone depleting substances (ODS). The Montreal Protocol sits under the Vienna Convention for the Protection of the Ozone Layer. It phases down the consumption and production of the different ODS in a step-wise manner, with different timetables for developed and developing countries. Developing and developed countries have equal but differentiated responsibilities, but most importantly, both groups of countries have binding, time-targeted and measurable commitments.

Body
Montreal protocol: the most successful global climate treaty

• The Montreal Protocol mandated the complete phase-out of CFCs and other ozone-depleting substances (ODS), which it has successfully managed to do in the last three decades.
The protocol was adopted in 1987, becoming the only United Nations treaty to be ratified by its 198 member-states.

This effort has led to the healing of the ozone layer hole which, in turn, protects humans, economies, and ecosystems.

Researchers believe that the size of the ozone hole has shrunk by around 4 million sq. km since 2000 and is not as deep as it used to be, thanks to the collective efforts of nations to cut the use of chlorofluorocarbons and other dangerous gases.

The Montreal Protocol offers a model of a successful environmental treaty that brought nations together to act swiftly on protecting the ozone layer.

In 2016, Nations that were party to the protocol got together in Kigali, Rwanda, to discuss the phasing down of hydrofluorocarbons (HFCs) as the next step towards addressing ozone depletion, also necessary to curb global warming.

Kigali Amendment to Montreal Protocol came into effect in 2019.

India’s performance in implementing the Montreal Protocol

Comprehensive Ozone Depleting Substances (Regulation and Control) Rules, 2000 were developed and put in place under the Environment (Protection) Act 1986, which were utmost important for the successful implementation of ODS phase-out in a vast country like India.

The unique feature of these Rules was banning the use of CFCs and halons in manufacturing of new equipment as early as from 1st January, 2002, being high-ODP chemicals.

India phased-out production and consumption of virgin halons as early as 2002, being high-ODP chemicals.

India accelerated the phase-out of production and consumption of CFCs with effect from 1st August, 2008, 17 months ahead of the Montreal Protocol schedule except use of pharmaceutical grade CFCs in manufacturing of MDIs for Asthma, COPD and other respiratory ailments within the country.

The phase-out of ODSs in MSMEs, which were widely scattered were handled using an innovative approach, realizing that MSMEs are having relatively a large share in Indian economy.

India successfully met the 2013 target of freeze of HCFC production and consumption and 10% phase-out targets of HCFCs in 2015, as per the accelerated phase out schedule of the Montreal Protocol.

India has voluntarily followed a low carbon development path in HPMP Stage.
India is the first country in the world to develop a Cooling Action Plan, which addresses cooling requirement across sectors and lists out actions which can help reduce the cooling demand and to reduce both direct and indirect emissions.

Conclusion

India, during the last 30 years has made outstanding contributions for the protection of ozone layer. To add to its efforts, the Union Government recently approved the ratification of the Kigali Amendment to the Montreal Protocol on phasing down climate-damaging refrigerant Hydrofluorocarbons (HFCs).

Biodiversity loss can have significant direct human health impacts if ecosystem services are no longer adequate to meet social needs. Examine. (150 words)

Reference: Indian Express

Introduction

A report in 2018 estimated that while humans constitute only 0.01% of all living things by mass, we have caused the loss of 83% of all wild animals and half of all plants on earth. By this, we not only deny ourselves the aesthetic pleasure of enjoying nature’s beauty in its splendid array of diverse life forms but also imperil our own health and well-being.

Body

Biodiversity: overview

Biological diversity is the resource upon which families, communities, nations and future generations depend. It is the link between all organisms on earth, binding each into an interdependent ecosystem, in which all species have their role. It is the web of life.

- India has four biodiversity hotspots and 90% of this area has been lost, according to the Centre for Science and Environment’s (CSE) new report entitled ‘State of India’s Environment in Figures 2021’.
- As per the data compiled in the report, the Indo-Burma hotspot is the worst affected and has lost 95% of its vegetation area, going from 23.73 lakh sq. km to 1.18 lakh sq. km.
- Another worrying aspect is that in these four hotspots, 25 species have also become extinct.

Loss of biodiversity: Impact on human health

- Prone to disaster: Biodiversity builds resilience against natural disasters like floods and storms, besides offering protective barriers against pandemics.
  - Loss of over 35% of the earth’s mangrove forests has made us vulnerable to floods and is resulting in rising sea levels that threaten coastal agriculture.
- Deforestation and zoonosis: Deforestation, with loss of multiple plant species, is damaging soil integrity and causing landslides precipitated by loose soil.
  - Deforestation also leads to increased spread of zoonotic infections, by removing the protective boundaries between wildlife and human communities.
• **Food security**: The availability of biodiversity is often a “safety net” that increases food security and the adaptability of some local communities to external economic and ecological disturbances.
  
  o Farming practices that maintain and make use of agricultural biodiversity can also improve food security.

• **Ecosystem services**: According to IUCN, the World Conservation Union, the monetary value of goods and services provided by ecosystems is estimated to amount to some US$33 trillion per year.

• **Energy security**: Wood fuel provides more than half the energy used in developing countries. Shortage of wood fuel occurs in areas with high population density without access to alternative and affordable energy sources.

• **Clean water**: The continued loss of forests and the destruction of watersheds reduce the quality and availability of water supplied to household use and agriculture.

• **Health**: A balanced diet depends on the availability of a wide variety of foods, which in turn depends on the conservation of biodiversity. Moreover, greater wildlife diversity may decrease the spread of many wildlife pathogens to humans.

• **Global warming**: Carbon sequestration refers to the long term removal or capturing of carbon from the atmosphere to control or mitigate global warming, and this is done naturally using biological, physical and chemical processes.
  
  o A decline in these services means a decline in the capturing of carbon dioxide from the atmosphere.

**Conclusion**

Biodiversity in natural ecosystems is of the utmost importance. It helps provide the resources and services that we rely on every day. The development and urbanization of humans poses a serious risk for natural biodiversity.

If nothing is done to reduce these changes, there will be disastrous consequences. There are many things we can do in politics, science, and even in our daily lives to help fix these issues. As humans we need to understand the risks associated with our consuming lifestyles and work hard to fix what is already damaged and prevent future harm.

**Value Addition**

Goods and Services provided by ecosystems include:

• Provision of food, fuel and fibre

• Provision of shelter and building materials

• Purification of air and water

• Detoxification and decomposition of wastes

• Stabilization and moderation of the Earth’s climate

• Moderation of floods, droughts, temperature extremes and the forces of wind
• Generation and renewal of soil fertility, including nutrient cycling
• Pollination of plants, including many crops
• Control of pests and diseases
• Maintenance of genetic resources as key inputs to crop varieties and livestock breeds, medicines, and other products
• Cultural and aesthetic benefits
• Ability to adapt to change

Climate Action and Finance Mobilization Dialogue (CAFMD) aims to advance inclusive and resilient economic development but there is much more potential in Indo-U.S bilateral relations for both to emerge as global leaders in the climate action and clean energy sectors. Analyse. (250 words)

Reference: Live Mint

Introduction

India and the United States of America (USA) launched the “Climate Action and Finance Mobilization Dialogue (CAFMD)”. The CAFMD is one of the two tracks of the India-U.S. Climate and Clean Energy Agenda 2030 partnership launched at the Leaders’ Summit on Climate in April 2021, by Prime Minister Narendra Modi and US President Joseph Biden.

Body

Objectives of CAFMD

CAFMD would have three pillars

• Climate Action Pillar: This would have joint proposals looking at ways in emissions could be reduced in the next decade.
• Setting out a Roadmap: To achieving the 450GW in transportation, buildings and industry.
• Finance Pillar: This would involve collaborating on attracting finance to deploy 450 GW of renewable energy and demonstrate at scale clean energy technologies.

Potential of Indo-US relations to emerge as global leaders in climate action and clean energy sectors

• Expanding clean energy programs, such as the prior Partnership to Advance Clean Energy, focused on energy efficiency and solar and wind energy, and potentially adding electric vehicles, battery storage and renewable grid-integration that align with India’s priorities.
• Developing new areas for cooperation, such as climate resilience, climate-resilient infrastructure, sustainable finance, air quality, electric mobility, among others.
• Strengthening global partnerships, including greater ambition under the Paris Agreement, ratification of Montreal Protocol’s Kigali Amendment to phase down dangerous hydrofluorocarbons (HFCs), advancement of the International Solar Alliance.

Telegram: https://t.me/insightsIAStips
Youtube: https://www.youtube.com/channel/UCpoccbCX9GEiwaile4HIjwA
Facebook: https://www.facebook.com/insightsonindia
(ISA), expanded USAID cooperation on energy, accelerating Mission Innovation, among others.

- Ramping up climate finance, investments and trade with India and emerging markets to support clean energy through the International Development Finance Corporation (IDFC), S. Export-Import bank and other international platforms, such as the Green Climate Fund.

- Fostering subnational climate action at the state- and city-levels with meaningful funding to create opportunities for cross-country learning, capacity building and implementation on the ground.

Conclusion

Through this collaboration, the United States and India aim to demonstrate how the world can align swift climate action with inclusive and resilient economic development, taking into account national circumstances and sustainable development priorities.

Value addition:

Background

- The dialogue will strengthen India-US bilateral cooperation on climate and environment.

- It will also help to demonstrate how the world can align swift climate action with inclusive and resilient economic development, taking into account national circumstances and sustainable development priorities.

- The US will collaborate with India to work towards installing 450 GW of renewable energy by 2030.

- Currently, India’s installed power capacity is projected to be 476 GW by 2021-22 and is expected to rise to at least 817 GW by 2030.

Recent India-US collaborations in Climate Action

- The United States and India are launching the “U.S.-India Climate and Clean Energy Agenda 2030 Partnership.”

- Led by President Biden and Prime Minister Modi, the Partnership will represent one of the core venues for U.S.-India collaboration and focus on driving urgent progress in this critical decade for climate action.

- Both the United States and India have set ambitious 2030 targets for climate action and clean energy.

- In its new nationally determined contribution, the United States has set an economy-wide target of reducing its net greenhouse gas emissions by 50–52 percent below 2005 levels in 2030.

The alarming rate of sea level rise can have varied yet devastating effects on the coastal states. Examine the vulnerability of India to global warming induced sea level rise. (250 words)

Difficulty level: Moderate
Reference: The Hindu

Why the question:
Close to 700 million people worldwide live along the coast and there continue to be plans to expand coastal cities. Therefore, understanding the risks involved from climate change and sea level rise in the 21st and 22nd centuries is crucial.

Key Demand of the question:
To write about the impact of seal level rise on coastal states and examine India’s vulnerability to it.

Directive word:
Critically examine – When asked to ‘Examine’, we have to look into the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a fair judgment.

Structure of the answer:
Introduction:
Begin by giving statistic regarding the rise of sea level due to global warming.

Body:
In the first part, write about how rise in sea level impacts the coastal states in various ways – Shoreline erosion and degradation, Amplified storm surges, Permanent inundation, and Saltwater intrusion etc.
Examine how the above will make India vulnerable in various aspects such as employment, land, community livelihood, infrastructure etc.
Suggest measures for adaptation to sea level rise.

Conclusion:
Conclude with a way forward to mitigate the impact of global warming – the major cause of sea level rise.

Introduction

Sea level rise is an increase in the level of the world’s oceans due to the effects of global warming and other factors. According to a draft report of United Nations Intergovernmental Penal on Climate Change destructive changes have already been set in motion. The draft report says that even with most optimistic emission reduction scenario, by the year 2050 many low-lying megacities and small island nations will experience extreme sea level events every year. Report says that the big four – United States of America, China, India and European Union will face most devastating fall out of the ocean and ice related impacts of climate change.

Body

Alarming rate of sea level rise

- Sea levels have risen by between 180 to 200 mm since 1900.
- Nearly 0.7% of the world’s land area is at a risk of episodic coastal flooding by 2100, impacting 2.5-4.1% of the population assuming there are no coastal defences or adaptation measures in place.
- By 2100, the global population potentially exposed to episodic coastal flooding will increase from 128-171 million to 176-287 million.

Consequences of sea-level rise on coastal states

- Loss of habitat: Almost 3 billion people are living within 200 km of the coasts and islands all over the world.
- A sea level rise will lead to **loss of habitation** and hence leads to **de-urbanization**.
  - **Indonesia** is planning to shift its capital from **Jakarta**, the “world’s fastest-sinking city” owing to sinking of land by 25 cm per year.
  - It may also significantly **affect tourism and recreation** through impacts on landscapes (e.g., beaches), cultural features etc.

- **Agriculture**: SLR will affect agriculture mainly through **land submergence**, soil and fresh groundwater **resources salinisation**, and land loss due to permanent coastal erosion, with consequences on production, livelihood diversification and food security.

- **Coastal fisheries and aquaculture**: The negative effects of SLR on fisheries and aquaculture are indirect, through adverse impacts on habitats (e.g., coral reef degradation, reduced water quality in deltas and estuarine environments, soil salinisation, etc.).

- **Impact on Small Island Nations**: Because of small islands’ high coastline to land area ratio, most of their human settlements, agricultural lands, and critical infrastructure are at or near the coasts.

**Vulnerability of India to global warming induced sea level rise**

- As per the study by **Hyderabad-based Indian National Centre for Ocean Information Services**, Sea levels along the Indian coast are projected to rise between 3.5 inches to 34 inch (2.8 feet) by the end of century due to global warming.

- **India’s coastal regions**, **home to about 170 million of the country’s 1.4 billion people**, are on the front lines of a shifting climate, experiencing sea-level rise, erosion, and natural disasters such as tropical storms and cyclones.
  - The latest evidence of this vulnerability occurred in **May 2020**, as the strongest storm recorded in decades in the Bay of Bengal—**Cyclone Amphan**—hit, forcing several million people to evacuate.

- Climate change is expected to **inundate significant sections** of **Mumbai by 2050**, impacting millions of people.

- **India lost 235 square kilometers of land to coastal erosion** between 1990 and 2016, placing people’s livelihoods and homes in jeopardy, with flight to safer places occurring voluntarily or, as a last resort, through government intervention.

- Scientific prediction suggests that **36 million Indians** are likely to be living in areas experiencing **chronic flooding by 2100**.

- Sea level around **Asia in the North Indian Ocean has increased faster than global average**, with coastal area loss and **shoreline retreat**.

- Similarly, mega cities such as **Mumbai, Chennai, and Kolkata** are at high risk of **flooding and sea-level rise**, with millions living in these urban coastal areas likely to be relocated to safer places in the future.
  - In such circumstances, forced migration and displacement would be inevitable in the absence of well-managed, pre-emptive relocation of populations from high-risk areas.
Adaptation measures

- **Integrated coastal management**: It will help in resource management following an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area.
  - Coastal Regulation Zone notifications issued under Environmental Protection Act, 1986 will help in this integrated management.

- **Community ownership**: Policy makers should engage stakeholders in the early stages of decision-making and throughout the entire decision-making process to enhance overall resilience in coastal areas, while supporting community ownership.

- **Barriers to urban areas**: Rotterdam has offered a model to other cities seeking to combat flooding and land loss. Rotterdam has built barriers, drainage, and innovative architectural features such as a “water square” with temporary ponds.

- **Adaptation to Sea Level Rise**
  - Relocating utility infrastructure, such as treatment plants and pump stations, to higher elevations would reduce risks from coastal flooding.
  - Understanding and modelling groundwater conditions will inform aquifer management and projected water quantity and quality changes.
  - Coastal restoration plans may protect water utility infrastructure from damaging storm surge by increasing protective habitat of coastal ecosystems such as mangroves and wetlands.
  - The injection of fresh water into aquifers can help to act as a barrier, while intrusion recharges groundwater resources.

- **Limiting global warming**: More use of renewable energy (wind, solar) can help reduce carbon emissions. Nations must act fast to attain their NDC’s and work on carbon sequestration.

**Conclusion**

The Paris Agreement provides a clear vision on limiting global warming and thus, Sea level rise. There must be awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it. Sea level rise is a slow disaster that will become magnanimous and all steps must be taken to ensure that such disasters are mitigated.

**Disaster and disaster management.**

Cyclones will further amplify with impact of Climate change and significantly increase the vulnerability of the coastal population. Developing appropriate coping strategies and risk reduction plans, along with greater public awareness, is a must disaster management in India. Analyse. (250 words)

*Difficulty level: Moderate*

*Reference: The Hindu*
Why the question:
Cyclone Gulab which made landfall on Sunday evening at Kalingapatnam left a trail of destruction in the north coastal districts of Andhra Pradesh, throwing normal life out of gear.

Key Demand of the question:
To write about the further vulnerability of coastal states to the cyclones in the face of climate change and measures needed to adapt and cope with it.

Directive word:
Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.

Structure of the answer:
Introduction:
Start with brief introduction on cyclones that have affected India in recent times.

Body:
In first part, cite increasing frequency of cyclones on both the eastern and western coast of India due to impact of climate change.
Next, bring out the economic costs and human costs as a result of devastation caused by the severe cyclones.
Write about the steps that are needed. Enhancing national, state, district and local level advocacy partnerships and knowledge management for mainstreaming disaster risk reduction, Developing hazard risk management tools, methodologies and practices etc.

Conclusion:
Conclude with a way forward.

Introduction

Cyclone is a region of low atmospheric pressure surrounded by high atmospheric pressure resulting in swirling atmospheric disturbance accompanied by powerful winds. They occur mainly in the tropical and temperate regions of the world.

Body

Increasing frequency of cyclones in India

- India has a coastline of about 7,516 km, 5,400 km along the mainland, 132 km in Lakshadweep and 1,900 km in the Andaman and Nicobar Islands.
- Although the North Indian Ocean (NIO) Basin (including the Indian coast) generates only about 7% of the world’s cyclones, their impact is comparatively high and devastating, especially when they strike the coasts bordering the North Bay of Bengal.
- On an average, five to six tropical cyclones form every year, of which two or three could be severe.
- More cyclones occur in the Bay of Bengal than the Arabian Sea and the ratio is approximately 4:1. This is now changing due to impact of climate change.
- Research evidence shows more cyclones forming over the Arabian Sea when compared to the Bay; overall there were eight storms of concern to India in 2019, and five last year, Amphan being a super cyclone.

Social and economic costs of cyclone

- Displacement: As many as 39 lakh people in India were displaced in 2020 due to climate disasters and conflicts, making it the fourth worst-hit country in the world to have such a high number of internal displacements.
• **Food and water shortage:** This is a major issue, especially for those cut off from major lines of communication and highways. For instance, a week after **Cyclone Fani battered Odisha**, survivors reeled under shortages of food, water and power.

• **Loss of life:** As many as **117 cyclones hit India in 50 years** from 1970-2019 claiming over 40,000 lives, according to a study on extreme weather events.
  
  o **Cyclone Tauktae which hit the Gujarat coast** as an extremely severe cyclonic storm, left a trail of destruction in several states **killing nearly 50 people**.

• **Poverty:** A new **World Bank report** finds the impact of extreme weather on poverty is more devastating than previously understood, responsible for annual consumption losses of **$520 billion** and pushing **26 million people into poverty every year**.

• **Damage to assets and property:** Very strong winds may damage installations, dwellings, communication systems, trees, etc. resulting in loss of life and property. Rebuilding takes huge resources and effort, affecting the development especially due to recurring disasters.

**Steps to be taken to mitigate impact of disaster**

• **Coastal belt plantation:** Providing a cover through green belt sustains less damage as forests act as a wide buffer zone against strong winds and flash floods. Without the forest the cyclone travel freely inland.

• **Hazard mapping:** Meteorological records of the wind speed and the directions give the pattern of occurrence of cyclone for particular wind speeds. A hazard map will illustrate the areas vulnerable to cyclone in any given year and estimate the severity of the cyclone and various damage intensities in the region.

• **Land use control:** It can be designed so that least critical activities are placed in vulnerable areas. Location of settlements in the flood plains is at utmost risk. Citing of key facilities must be marked in the land use. Policies should be in place to regulate land use and building codes should be enforced.

• **Engineered structures:** This needs to be built to withstand wind forces. Good site selection is also important. Majority of the buildings in coastal areas are built with locally available materials and have no engineering inputs. Good construction practices should be adopted such as:

  o **Cyclonic wind storms inundate the coastal areas.** It is advised to **construct on stilts or on earth mound**.

  o **Houses can be strengthened to resist wind and flood damage.** All elements holding the structures need to be properly anchored to resist the uplift or flying off of the objects. For example, avoid large overhangs of roofs, and the projections should be tied down.

  o **A row of planted trees** will act as a shield. It reduces the energy.

  o **Buildings storing food supplies must be protected against the winds and water.**

  o **Protect river embankments.**

  o **Communication lines** should be installed **underground**.
o Provide **strong halls for community shelter** in vulnerable locations.

- **Flood management:** Torrential rains, strong wind and storm range leads to flooding in the cyclone affected areas. There are possibilities of landslides too. Flood mitigation measures must be incorporated.

- **Improving vegetation cover:** The roots of the plants and trees keep the soil intact and prevent erosion and slow runoff to prevent or lessen flooding.
  
  o The use of tree planted in rows will act as a windbreak.
  
  o Coastal shelterbelt plantations can be developed to break severe wind speeds.
  
  o It minimizes devastating effects.

- Improved early warning systems are a must to ensure preparedness.

**Conclusion**

Cyclone Disaster Management encompasses mitigation and preparedness measures for cyclones. Installing disaster-resilient power infrastructure in the coastal districts, providing concrete houses to poor and vulnerable households, and creating massive community awareness campaigns are essential.

**Value Addition**

**National Cyclone Risk Mitigation Project (NCRMP):**

- *It was launched by* the Ministry of Home Affairs with the support of the World Bank. It addresses the cyclone risks in the country.

- *Its aim is to* undertake suitable structural and non-structural measures to mitigate the effects of cyclones in the coastal states and UTs of India.

- *The objectives are:*  
  
  o Improving early warning dissemination systems
  
  o Enhancing the capacity of local communities to respond to disasters
  
  o Improving access to emergency shelter, evacuation, and protection against wind storms, flooding, and storm surge in high areas
  
  o Strengthening Disaster Risk Management (DRM) capacity at central, state, and local levels.

- **Implementation:** National Disaster Management Authority (NDMA) in coordination with participating State Governments and the National Institute for Disaster Management (NIDM).

- **Coverage:** The Project has identified 13 cyclone-prone States and Union Territories (UTs) with varying levels of vulnerability. These States/UT have further been classified into two categories:
  
  o **Category I:** Higher vulnerability States namely Andhra Pradesh, Gujarat, Odisha, Tamil Nadu, and West Bengal.
Linkages between development and spread of extremism.

What are the core components of the Tribal Panchsheel? Examine its relevance in the present day to prevent spread of extremism and to achieve tribal justice. (250 words)

Difficulty level: Moderate

Reference: Live Mint

Why the question:

Globalization and industrialization have uprooted villages, disrupted ancient cultures and forced Tribals to give up their traditional occupations. Many have become migrant wage workers in unorganized-sector units, living one meal at a time.

Key Demand of the question:

To write about the Tribal Panchsheel and its relevance in addressing the tribal issues in the present day.

Directive word:

Examine – When asked to ‘Examine’, we must investigate the topic (content words) in detail, inspect it, investigate it and establish the key facts and issues related to the topic in question. While doing so we should explain why these facts and issues are important and their implications.

Structure of the answer:

Introduction:

Begin by giving context about the Tribal panchsheel and its core components.

Body:

First, give an historical perspective by mentioning that the marginalization of Tribals can be traced back to the British Raj. The development projects post-independence needed acquisition of land and this context leading to the introduction of Tribal Panchsheel by Nehru.

Further discuss how the Tribal cultures are being uprooted in the context of globalisation in the present day and how it is leading to their alienation resulting in extremism.

Mention the various statutes and schemes brought in to protect and support the Tribal population and analyse their impact on achieving tribal justice.

Conclusion:

Conclude by saying Inclusion without Intrusion should be the approach and performance of the schemes and programmes for Tribals must be analysed based on tribal justice.

Introduction

Tribal people constitute 8.6% of the nation’s total population, over 104 million people according to the 2011 census. The forest occupies a central position in tribal culture and economy. Jawaharlal Nehru, first Prime Minister of India, formulated the following five principles for the policy to be pursued vis-à-vis the tribals.

Body

Core components of Tribal Panchsheel:

- People should develop along the lines of their own genius, and the imposition of alien values should be avoided. Try to encourage every way their own traditional arts and culture.

- The tribal rights in land and forest should be respected.

- Train and build up a team of their own people to do the work of administration and development. Try to avoid introducing too many outsiders into tribal territory.
• We should **not over administer** tribal areas or overwhelmed with a multiplicity of schemes. Administrate in accordance with their **own social and cultural institutions**.

• We should judge the result, not by statistics or the amount of money spent, but by the **human character that is evolved**.

**Relevance in the present day to prevent spread of extremism and to achieve tribal justice:**

• Globalization and industrialization have uprooted villages, disrupted ancient cultures and forced Tribals to give up their traditional occupations.

• Many have become migrant wage workers in unorganized-sector units, living one meal at a time.

• Unbridled interaction between tribes and the general population has resulted in indigenous cultures being suppressed.

• In the name of “ease of doing business”, the last several years have seen an accelerated process of displacement and dispossession of Adivasi communities and a takeover of their land and forest-based resources, increasing the numbers of migrant workers from Adivasi communities.

• Adivasis are more vulnerable to the general hostility towards the poor displayed by state agencies, particularly the police.

• India has not ratified the International Labour Organization’s 1989 Convention on the Rights of the Indigenous Peoples, which recognizes Tribal rights over land and natural resources. This ratification would assert India’s choice to assimilate Tribals while respecting their social and cultural autonomy.

• Thus, with so many issues faced by the tribals, the Tribal Panchsheel becomes ever more than relevant in today’s times.

**Conclusion**

The potential of a pragmatic action plan in consonance with Panchsheel is yet to be fulfilled. The crevice between policy and performance seems to widen over time, while inclusion without intrusion remains a challenge to be addressed

**Value addition:**

**Significance of Tribal Panchsheel:**

• **It shaped the tribal policy of India in the 1950s.**

• **It avoided the extreme of two standpoints (i.e. anthropological approach – which treated tribals as ‘museum specimens’ to kept apart, for their study and observations and other approachers – which sought to destroy their individuality, development process and culture that was imposed being alien).**

• **Even Scheduled Tribes Commission (1961) endorsed it and made recommendations within the framework of Panchsheel like rights over land, forest, rehabilitation, etc.**
What are the causes of insurgency in the north-eastern India? Comment on the Karbi-Anglong Peace Accord and its potential in resolving conflicts in Assam. (250 words)

**Difficulty level:** Moderate

**Reference:** Indian Express

**Why the question:**
The Centre, the Assam government and insurgency groups from the state have signed an agreement to bring peace to the North-eastern state’s Karbi-Anglong district.

**Key Demand of the question:**
To write about causes for insurgency in N.E India and the potential and limitations of Karbi-Anglong Peace Accord.

**Directive word:**
Comment– here we must express our knowledge and understanding of the issue and form an overall opinion thereupon.

**Structure of the answer:**

**Introduction:**
Begin by giving context of the insurgencies in North east India that are still a hindrance in the regional development.

**Body:**
Draw a small map of the north-east showing major insurgent conflicts in the region.

First, Mention the causes of the insurgency under various heads such as economic, political, social, cultural/ethnic reasons. Write briefly about its impact highlighting the issues associated with AFSPA, Naxalism and International borders.

Next, Mention the main features of the Karbi-Anglong peace accord such as the special development package, Memorandum of settlement, Autonomous District Councils etc. Bring out its potential as well as its limitations.

**Conclusion:**
Conclude by mentioning that such peace accords are a step in the right direction to fight against insurgency but the limitations must soon be addressed for an effective outcome.

**Introduction**
North East India has been witnessing insurgency since 1950s. It has numerous insurgent groups spread across many states. They have made demands ranging from a separate nation-state to statehood within the Indian Constitution and autonomy under the state government. At one point, more than 120 militant groups operated in India’s northeast. In recent years, the Indian government has had some success in achieving stability in the region, using tactics from negotiations to military operations to root out militants. Nevertheless, the region remains a potential tinderbox.

**Body**

**Factors responsible for insurgency in North-East India**

- **Sense of Isolation, Deprivation and Exploitation:** Distance from New Delhi and meagre representation in the Lok Sabha has further reduced the vox populi being heard in the corridors of powers, leading to more disillusionment in the dialogue process, thereby making call of the gun more attractive.

- **Demographic Changes:** The influx of refugees from former East Pakistan (now Bangladesh) into Assam led to a dramatic change in the demographic landscape of the region.

- **Lack of Economic Development:** Union Government’s economic policies have also fuelled resentment and insecurity amongst the people. Due to various factors, the development of
NE has lagged behind thereby resulting in lack of employment opportunities. Thus, the youth are easily lured by various insurgent groups in order to earn easy money.

- **Internal Displacement**: Internal displacement is also an ongoing problem. From the 1990s to the start of 2011, over 800,000 people were forced to flee their homes in episodes of **inter-ethnic violence** in western Assam, along the border between Assam and Meghalaya, and in Tripura.

- **External Support**: There is ‘increasing evidence’ of China’s revival of its ‘covert offensive’ in the region. Pakistan’s Special Services Group (SSG) also trained the Naga guerrillas in the 1960s through their bases in East Pakistan (now Bangladesh).

- **Multi-Ethnicity**: NE is the **most ethnically diverse region** in India. It is home to around 40 million people including 213 of the 635 tribal groups. Each of these tribes is having its own distinct culture. Thus, each tribal sect resents being integrated into mainstream India as it means losing their own distinct identity.

- **Perceived Excesses by Indian Army**: The promulgation of Armed Forces Special Powers Act (AFSPA) in most of the NEI has further alienated the local populace. Though imperative for strengthening the hand of IA for CI operations, it is often portrayed as draconian by various Human Rights (HR) organisations and thus has been vilified by various insurgent groups.

- **Easy availability of Arms and ammunition**: from hostile neighbours and the **Porosity of the border with Myanmar** due to difficult terrain has helped in infiltration of insurgents.

- The chief sources of funding are extortion, arms and drugs smuggling. **Proximity to the Golden triangle** ensures funding for separatist/secessionist organisations via support of illegal drug smuggling.

The **Karbi-Anglong Peace Accord** is a tripartite agreement signed by the Centre, five insurgent groups active in Karbi Anglong, and the Assam government. Hailed as a “historic” move, the accord aims to “**end the decades old crisis**” and ensure Assam’s territorial integrity and comes months after more than 1,000 members of armed outfits came forward to surrender and give up the path of violence.

**Potential of Karbi-Anglong Peace Accord in ensuring peace in North-East India**

- The Peace accord marks the culmination of an extended process of negotiation to end insurgency in the region.

- This **Memorandum of Settlement** will ensure greater devolution of autonomy to the Karbi Anglong Autonomous Council, protection of identity, language, culture, etc. of Karbi people

- It focusses on the development of the Council area, without affecting the territorial and administrative integrity of Assam.

- Under the agreement, the armed groups will shun violence and join the democratic process while the government will facilitate the rehabilitation of their cadres.

- It would promote peace and prosperity in Assam and ensure the development of the North-eastern region.

- It will ensure a life of dignity and respect for those who have surrendered arms by facilitating opportunities for livelihood and employment.
Conclusion

The peace deal alone cannot ensure peace, as Autonomous councils are often captured by ex-militants who use fear and intimidation to assert themselves. So we must look beyond peace deals towards transitioning society into a democratic construct.

Value addition:

**Salient Features of the Karbi-Anglong Peace Accord**

- A **Special Development Package** of Rs. 1000 crore over five years will be given by the Union Government and Assam Government to undertake specific projects for the development of Karbi areas.
- The Karbi armed groups have agreed to **abjure violence** and join the **peaceful democratic process** established by law of the land.
- The Agreement also provides for the rehabilitation of cadres of the armed groups.
- The Government of Assam shall set up a **Karbi Welfare Council** for the focussed development of Karbi people living outside the KAAC area.
- The **Consolidated Fund of the State** will be augmented to supplement the resources of KAAC.
- Overall, the present settlement proposes to give more legislative, executive, administrative and financial powers to KAAC.

Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cybersecurity; money-laundering and its prevention.

Owing to the technological complexity and anonymity associated with social media, it has become a safe haven for cybercrimes. Critically analyse to what extent the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 will reduce crimes on social media? (250 words)

**Difficulty level:** Moderate

**Reference:** The Hindu

**Why the question:**

The Supreme Court on Thursday expressed concern over fake news being spread over social media platforms and web portals stating that they exhibit no accountability.

**Key Demand of the question:**

To write about the complexity of cybercrimes and the scope of Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 in reducing it.

**Directive word:**

Critically analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a balanced judgment on the topic.

**Structure of the answer:**

**Introduction:**

Begin by highlighting the mass forum that social media opens up but with a lot of potential crimes such as cyberstalking, hacking of personal data, cybertheft etc.
Body:
Bring out the impact of above. Cite facts and figures to substantiate your points.
List out the various provisions brought out by the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 such as the social media entities to have a Grievance Redressal Officer (GRO), having the ability to trace the first source of an information in matters of sovereignty and Integrity of India etc.
Mention the challenges posed with the rules such as compromise of Individual privacy, technological challenges in tracing of information etc.
Suggest additional measures that are needed to make social media a safe space.

Conclusion:
Conclude by saying the striking a balance between the fundamental rights and their reasonable restrictions has been a constant challenge, even more so in the digital world.

Introduction
Recently, Chief Justice of India remarked that, many social media and news media communalise content leading to polarisation in the country. The remark from the CJI came while hearing petitions highlighting how some media outlets aired communal content linking the spread of the coronavirus to a Tablighi Jamaat meet held at Nizamuddin in Delhi. The hearing witnessed Chief Justice Ramana upbraid the lack of accountability on the part of social media platforms.

Body
The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021

- **Due diligence by intermediaries**: Intermediaries are entities that store or transmit data on behalf of other persons. Intermediaries include internet or telecom service providers, online marketplaces, and social media platforms.

- The due diligence to be observed by intermediaries includes: (i) informing users about rules and regulations, privacy policy, and terms and conditions for usage of its services, (ii) blocking access to unlawful information within 36 hours upon an order from the Court, or the government, and (iii) retaining information collected for the registration of a user for 180 days after cancellation or withdrawal of registration.

- Intermediaries are required to report cybersecurity incidents and share related information with the Indian Computer Emergency Response Team.

- **Significant social media intermediaries**: A social media intermediary with registered users in India above a threshold (to be notified) will be classified as Significant Social Media Intermediaries.

- Additional due diligence to be observed by these intermediaries include: (i) appointing a chief compliance officer to ensure compliance with the IT Act and the Rules, (ii) appointing a grievance officer residing in India, and (iii) publishing a monthly compliance report.

- Intermediaries which provide messaging as a primary service must enable the identification of the first originator of the information on its platform.

- This originator must be disclosed if required by an order from the Court or the government. Such order will be passed for specified purposes including investigation of offences related to sovereignty and security of the state, public order, or sexual violence.
IT Rules and its efficacy on reduction of crimes via social media

- The government announce that the Code is “soft-touch oversight” mechanism to deal with issues such as persistent spread of fake news, abuse of these platforms to share morphed images of women and contents related to revenge porn or to settle corporate rivalries.

- The speed and reach of digital media especially social media have meant that subversive rumours and fake news get aired with impunity.
  - This has resulted in serious law and order problems.

- In India, this phenomenon has assumed dangerous proportions. Fake news and hate speech have led to lynchings and communal flare-ups in many parts of the country. This menace needs to be curbed.
  - e.g.: Delhi Riots, DG Halli riots in Bangalore.

- It is very important that crores of social media users be given a proper forum for resolution of their grievances in a time bound manner against the abuse and misuse of social media.

- Checks and balances against executive excesses is in place as a court order is needed to extract information from social media companies. Additionally, no such order would be passed in cases where other less intrusive means were effective in identifying the originator of the information and the intermediary would not be required to disclose the contents of any electronic message.

- The government must be mindful that it did not over-regulate leaving a deleterious impact on the users’ right to privacy and free speech.

Critical analysis and way forward

- In the current form, these guidelines could undermine the principles of open and accessible Internet and violate the right to privacy and free speech of users, particularly in the absence of robust data protection law.

- These could also lead to an erosion of the ‘safe harbour’ protection given to intermediaries under Section 79 of the IT Act.

- There is no denying that there are problems with online content, which the government has rightly highlighted now.

- Its release has referred to a 2018 Supreme Court observation that the government “may frame necessary guidelines to eliminate child pornography, rape and gangrape imageries, videos and sites in content hosting platforms and other applications”, besides making a mention of discussions in Parliament about social media misuse and fake news.

- Besides the regulation, data privacy law must be passed immediately as it has been on the back burner. State must also be held accountable in upholding privacy rights of its people.

Artificial Intelligence (AI) in cybersecurity can provide robust protection and generate rapid responses to cyber threats. Discuss the advantages of integrating A.I in cybersecurity. (250 words)

Difficulty level: Moderate

Reference: Live Mint
**Why the question:**
Artificial intelligence (AI) is being looked upon as the next frontier to make cyber-defence robust and scalable.

**Key Demand of the question:**
To write about the potential advantages of AI in tackling cybersecurity.

**Directive word:**
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

**Structure of the answer:**
Introduction:
Begin by writing about the AI in the context of cyber security.

*Body:*
First, giving context of rising cyber security threats. Cite stats and examples.
Next, write about the potential of AI in this regard to tackle the threats – early recognition of threats, Categorize Threats, Quick response, Robust monitoring and protect sensitive data etc.

*Conclusion:*
Conclude by mentioning way forward that needs to approach to make AI in cybersecurity scalable.

**Introduction**
Artificial Intelligence (AI) is the branch of computer science concerned with developing machines that can complete tasks that typically require human intelligence. The cyberattack surface in modern enterprise environments is massive, and it’s continuing to grow rapidly. AI systems have immense potential in cybersecurity. It can be trained to generate alerts for threats, identify new types of malware and protect sensitive data for organisations.

**Body**
 Advantages of integrating Artificial Intelligence in cybersecurity

  - **Continuous learning**
    - AI uses machine learning and deep learning to learn a business network’s behaviour over time.
    - By recognizing patterns on the network and clustering them, AI proceeds to detect any deviations or security incidents from the norm before responding to them.
    - Potential threats with similar traits to those recorded get blocked early enough.
    - The fact that AI keeps learning makes it difficult for hackers to beat its intelligence.

  - **Identifies Unknown Threats**
    - Unknown threats can cause massive damage to a network. Worse still is the impact they can have before you detect, identify, and prevent them.
    - As attackers try new tactics from sophisticated social engineering to malware attacks, it is necessary to use modern solutions to prevent them.
    - AI has proven to be one of the best technologies in mapping and stopping unknown threats from ravaging a company.

  - **Handle a Lot of Data**
- AI’s automated nature allows it to skim through massive chunks of data and traffic.
- Technology that uses AI, such as a residential proxy, can help you to transfer data.
- It can also detect and identify any threats hidden in the sea of chaotic traffic.

### Better Vulnerability Management

- AI helps you assess systems quicker than cybersecurity personnel, thereby increasing your problem solving ability manifold.
- It identifies weak points in computer systems and business networks and helps businesses focus on important security tasks.
- That makes it possible to manage vulnerability and secure business systems in time.

### Reduces Duplicative Processes

- AI, while mimicking the best of human qualities and leaving out the shortcomings, takes care of duplicative cybersecurity processes that could bore your cybersecurity personnel.
- It helps check for basic security threats and prevent them on a regular basis.
- It also analyzes your network in depth to see if there are security holes that could be damaging to your network.

### Accelerates Detection and Response Times

- The best way to detect and respond to threats in time is by integrating AI with cybersecurity.
- AI scans your entire system and checks for any possible threats.

### Securing Authentication

- AI secures authentication anytime a user wants to log into their account.
- AI uses various tools such as facial recognition, CAPTCHA, and fingerprint scanners amongst others for identification.
- The information collected by these features can help to detect if a log-in attempt is genuine or not.

### Conclusion

The increasing rate of cyber-attacks has posed a great challenge in the recent times. AI gives the much-needed analysis and threat identification that can be used by security professionals to minimize breach risk and enhance security posture. AI can help discover and prioritize risks, direct incident response, and identify malware attacks before they come into the picture. So, even with the potential downsides, AI will serve to drive cybersecurity forward and help organizations create a more robust security posture.
What kinds of cyber weapons are used in cyber-warfare? Do you think India should try and achieve deterrence by focussing on building cyber weapons? Critically Examine. (250 words)

Difficulty level: Moderate
Reference: Live Mint

Why the question:
Citing studies by a Russian cyber security firm, Forbes magazine’s Thomas Brewster reported last week that hackers associated with the Indian government (designated ‘Bitter APT’ by the industry) used commercially available zero-day exploits to break into Chinese and Pakistani government-linked computers.

Key Demand of the question:
To debate if India should increase cyberwarfare capabilities to achieve deterrence.

Directive word:
Critically analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary. When ‘critically’ is suffixed or prefixed to a directive, one needs to look at the good and bad of the topic and give a balanced judgment on the topic.

Structure of the answer:
Introduction:
Begin by defining cyber-warfare.

Body:
In the first part, mention the various kinds of cyber weapons – Viruses, phishing, computer worms and malware, distributed denial-of-service (DDoS) attacks, hacking, spyware or cyber espionage, ransomware and propaganda or disinformation campaigns etc.
Next, argue the impact Cyber warfare can have on our country. Substantiate with examples. Aruge for building cyber armament directly by the state.
Next. Argue on the other side as to unconventional nature of cyber warfare, lack of proper accountability and training etc.

Conclusion:
Conclude by passing a judgement on whether or not India should work towards building cyber warfare deterrents.

Introduction
Cyber warfare involves the actions by a nation-state or international organization to attack and attempt to damage another nation’s computers or information networks through, for example, through computer viruses or denial-of-service attacks.

Although cyberwarfare generally refers to cyber-attacks perpetrated by one nation-state on another, it can also describe attacks by terrorist groups or hacker groups aimed at furthering the goals of particular nations.

Body
Cyber weapons used in cyber-warfare

- **Malware** is a type of application that can perform a variety of malicious tasks.
  - Example, Mirai malware using botnet of 5 lakh devices, had caused servers of Dyn, a leading domain name service to crash.
  - **Ransomware** is a type of malware that locks the devices. Eg WannaCry, Petya
- **Spyware**: Pegasus, a spyware was in news and according to WhatsApp, the spyware was deployed on at least 1,400 targets, including lawyers, activists, dissidents and diplomats.

- **Phishing**: Phishing attacks often arrive in the form of an email pretending to be from a legitimate organization, such as your bank, the tax department, or some other trusted entity.

- **Distributed Denial-of-Service (DDoS) attack**: A DDoS attack is where an attacker essentially floods a target server with traffic in an attempt to disrupt, and perhaps even bring down the target.
  - **Saposhi Malware** is capable of taking over electronic devices and turning them into bots (device taken over by malware) which can then be used for any purpose, including DDoS attacks which, with enough firepower, can cripple entire industries.

- **SQL injection**: SQL injection is a type of attack which is specific to SQL databases. SQL databases uses SQL statements to query the data, and these statements are typically executed via a HTML form on a webpage.

- **Cryptojacking** is where cyber criminals compromise a user’s computer or device and use it to mine cryptocurrencies, such as Bitcoin.
  - Cryptojacking is not as well-known as other attack vectors, however, it shouldn’t be underestimated.

- **A zero-day exploit** is where cyber-criminals learn of a vulnerability that has been discovered in certain widely-used software applications and operating systems, and then target organizations who are using that software in order to exploit the vulnerability before a fix becomes available.

### Need for cyber deterrence capabilities by India

- **Credible offensive cyber capability** is necessary for at least two reasons. First, India presents attackers with a vast, sprawling target sphere, large parts of which are unguarded and perhaps even unguardable.

- It is thus **not feasible to rely** solely on perimeter security—the equivalent of stationing troops all along the border—as a strategy for cyber defence.

- It becomes necessary to deter adversaries from attacking in the first place.

- Deterrence in information warfare is a multi-layered concept, but requires the possession of effective cyber weapons to be credible.

- The other reason to possess—and be seen to possess—cyber weapons is to ensure a place at the **high table as a ‘cyber have’** should countries eventually get down to negotiate digital arms control.

### Downside of cyberwarfare

- Since there are different ranges on which cyber warfare can take place, most of the issues are linked with the level of warfare and thus the intent of the attack as well.
• For instance, the attack could be made for something as simple and small as accessing fellow employees’ financial records, but it could also be as severe and as big as terrorism attacks, which can affect entire nations, and at times, more than one nation as well.

• The first and foremost issue linked to cyber warfare is the issue of privacy concerns.
  o Edward Snowden incident shows the kind of state surveillance imposed on citizens in America in the aftermath of 9/11.

• It is this very reason why so many are so reluctant to shift towards an entirely online and digital life, since having everything digitized means that every memory, every action, and every choice that a person takes, is being stored somewhere which could, later on, be accessed for an ulterior motive.

• And like all other situations, in this one too, the poorer and more backward nations suffer the most since they don’t have the funding or the resources to set up stronger defences for their nations.

• Thus, it eventually becomes a game of the developed and richer nations, who can even treat smaller and weaker nations as puppets because of the high level of power they hold over them.

Conclusion
It is imperative that India’s Infrastructure needs to be protected with the latest security features. The country’s economy is highly dependent on secure banking and finance systems while it is even more important to safeguard critical installations such as nuclear plants, transport sector for national security. Public-Private partnerships can strengthen cooperation in the area of cyber-security.

The cyber generation must learn from its nuclear predecessor, when India was designated a non-nuclear weapon state in perpetuity for the only reason that it had held off testing a nuclear device before an arbitrary date.

Value Addition

India’s deterrence capacity in cyberwarfare

• CERT-IN is the national nodal agency to respond in crisis situation. For example, in October 2017, CERT had issued alert about Reaper which is highly evolved malware capable of hacking devices like Wi-Fi routers and security camera.

• CERT-fin has also been launched exclusively for financial sector.
  o Cert-Fin will work closely with all financial-sector regulators and stakeholders on issues of cyber security.
  o It will collect, Analyse and disseminate information on cyber incidents across financial sectors. It will forecast and send alerts on cyber security incidents. Cert-Fin will contribute to strengthening of the cyber security of the country.

• CERT-in is also operating Cyber Swachhata Kendra, a Botnet Cleaning and Malware Analysis Centre
- National Critical Information Infrastructure Protection Centre (NCIIPC) to battle cyber security threats in strategic areas such as air control, nuclear and space.
- Cyber Surakshit Bharat Initiative to strengthen Cybersecurity ecosystem in India. It is first public private partnership of its kind and will leverage the expertise of the IT industry in cybersecurity.
- National cyber coordination Centre (NCCC) is set up to scan internet traffic coming into the country and provide real time situational awareness and alert various security agencies.
- Cyber Forensic Lab set up in Bangalore, Pune, Kolkata in collaboration with NASSCOM

Role of external state and non-state actors in creating challenges to internal security.
The Naga peace process continues to be a stalemate and despite the Naga Peace Accord of 2015 the obstacles and differences between stakeholders are yet to be resolved to achieve finality. Discuss. (250 words)
Difficulty level: Moderate
Reference: Live Mint
Why the question:
Assam Chief Minister Himanta Biswa Sarma and his Nagaland counterpart Neiphiu Rio held closed door interaction with NSCN(IM) chief negotiator Thuingaleng Muivah a day after the resumption of talks between the Centre and NSCN(IM) to find a solution to the vexed Naga political issue.
Key Demand of the question:
To write about the obstacles to the Naga peace talks and suggest steps to resolve them.
Directive word:
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.
Structure of the answer:
Introduction:
Begin by giving context about Naga Peace Accord of 2015
Body:
In 2015, the Centre signed a framework agreement with the NSCN (I-M) to resolve the Naga issue, but both sides maintaining secrecy about its contents.
Write about the friction between NSCN(I-M) and interlocutor R.N Ravi over some contents of the deal. Mention other hurdles such as sovereignty issues, demand for Greater Nagalim, Issues with non-Naga groups, Extortions by certain Naga groups and factions within the Nagas.
Conclusion:
Conclude with a way forward on securing a long lasting and peaceful deal with all the stakeholders with the restart of talks.
Introduction
The NSCN (IM) entered into a ceasefire agreement with the Centre in 1997 and the two have been holding talks since then, while a conglomerate of seven different Naga national political groups (NNPGs) also got into separate talks with the Centre since 2017. The Centre signed a “framework agreement” with NSCN (IM) in 2015, and an “agreed position” with the NNPGs in 2017. However, the NSCN (IM)’s demand for a separate Naga flag and constitution has been a delaying factor in signing a final deal on the protracted Naga political issue.
Body

Naga Peace Accord and deadlock

- **Enlarged Peace Talks**: Talks were expanded in 2017 by including other Naga groups under the banner, the Naga National Political Groups (NNPGs).

- **Bilateral to Multilateral Negotiations**: The Framework Agreement envisaged a bilateral truce between two entities, but today it is seen to be a multilateral one with involvement of seven prominent Naga groups.

- **Deadlock in Talks Since October 2019**: The deadlock was on the insistence for a separate flag and constitution by the NSCN(IM) to make way for India and Nagaland to be independent allies in a shared-sovereignty federal relationship.

- **Differences within Naga Groups**: The NSCN (I-M) still insists on a “Greater Nagalim”. However, most of the NNPGs based in Nagaland have sought to settle the issue without disturbing the State boundaries while keeping the “Greater Nagalim” question in abeyance.

Other issues in the peace process

- The agreement released by the NSCN-IM in August 2020 stated “sharing the sovereign power” and provide for an “enduring inclusive new relationship of peaceful co-existence of the two entities”.

- The **NSCN-IM claims that the word ‘new’** is politically sensitive as it goes to define the meaning of **peaceful co-existence of the two entities** (two sovereign powers) and it strongly indicates **outside the purview of the Constitution**.

- The position of NSCN (IM) has been **“with India, not within India”**.

- Conceding to this demand, especially after the abrogation of Article 370, seems improbable for the Government.
In November 2017, N Ravi signed an agreement with seven groups who had come together under the banner of the Naga National Political Groups (NNPGs), which did not include the NSCN (IM).

- The IM, which considers itself the principal representative of Naga aspirations, has been a rival of many of the NNPG groups. In a letter to Prime Minister Narendra Modi in 2020, the IM accused Ravi of attempting to “segregate the Naga civil society”.

- The NSCN-IM had claimed that the interlocutor Mr. Ravi, “craftily deleted the word new from the original” to justify his own narrative and circulated to the other Naga groups including NNPGs.

- NSCN-IM was also angered by Mr. Ravi’s letter to Nagaland CM, alleging the collapse of law and order and that armed gangs who question the sovereignty and integrity of the nation” were engaging in “blatant extortion”.

Way forward

- The government has roped in former IB officer Mishra as the new pointsperson for talks.
- It is important to understand that there cannot be an accord without the NSCN(IM). It continues to get young recruits and wields considerable influence in the region.
- The idea is to slowly bring them to accept what India can give.
- One of Mishra’s tasks would also be to delicately close the gap between the IM and NNPGs, which shared a good relationship with Ravi.

The menace of Left-wing extremism which is the single largest internal security threat in India is on a decline. It is indeed a welcome news but the Maoist threat remains a potent challenge to be overcome. Discuss. (250 words)

**Difficulty level: Easy**

**Reference:** The Hindu

**Why the question:**
The geographical influence of Maoists has contracted to only 41 districts in the country, a sharp reduction from 96 such districts in 10 States in 2010, according to data provided by the Ministry of Home Affairs (MHA).

**Key Demand of the question:**
To write about the declining trends of Maoism but the need for further vigil and action to successfully overcome it.

**Directive word:**
Discuss – This is an all-encompassing directive – you must debate on paper by going through the details of the issues concerned by examining each one of them. You must give reasons for both for and against arguments.

**Structure of the answer:**

**Introduction:**
Begin by citing stats about the declining trends of Maoism.

**Body:**
First, write the reasons that led to this decline – various developmental approaches as well as internal security capacity building.

Next, write how the Naxalist movement still remains a potent threat to the internal security of India in the various ways. Cite examples and data to substantiate your points.
Next, suggest various measures that are further required to tackle this issue.

Conclusion:
Conclude with a way forward on taking a multi prong approach to defeat Maoism.

Introduction

Left Wing Extremism (LWE) movement has its roots in the Naxalbari area West Bengal in the 1960’s. These Maoists insurgents started running a parallel system of administration in parts of central and Eastern India. They kill civilians, destroy public buildings and extract ransom from businessmen. In the recent years, however, LWE movement is showing decline, because of the shift in the approach of the successive Governments. The recent statement by Home Minister noted that the geographical influence of the Maoists has reduced from 96 districts in 10 States in 2010 to 41 now.

Body

Maoist threat remains a potent challenge:

- LWE still poses multiple challenges such as ‘radicalization of youth’; hindering the development initiatives; threat to the political stability of LWE areas; etc
- The Maoist insurgency still has potency in South Bastar in Chhattisgarh, the Andhra-Odisha border and in some districts in Jharkhand.
- These States must focus on expansive welfare and infrastructure building even as security forces try to weaken the Maoists.
- Frequent skirmishes and attacks have not only affected the security forces but also left many tribal civilians caught in the crossfire.
- A purely security-driven approach fraught with human rights’ violations has only added to the alienation among the poor in these areas.

Measures needed by government to tackle the Maoist insurgency:

- **Modernizing the police force**: The scheme focuses on strengthening police infrastructure by construction of secure police stations, training centers, police housing (residential) and equipping police stations with required mobility, modern weaponry, communication equipment and forensic set-up etc.
  - On the administrative side, changes include separation of investigation from law and order, specialized wings for Social and Cyber Crimes are initiated in several states.
  - Various technological reforms are pushed including modernization of the control room, fast tracking Crime and Criminal Tracking Network and System (CCTNS), pushing for National Intelligence Grid (NATGRID) and pushing for incorporation of new technology into policing
- **Social Integration**: State Governments have surrender and rehabilitation policy, while the Central Government supplements the efforts of the State Governments through the Security Related Expenditure (SRE) Scheme for LWE affected States.
  - Additional incentives are given for surrendering with weapons/ammunition.
  - The surrenderers are also imparted vocational training with a monthly stipend for a maximum period of 36 months.
Skill Development: Skill Development in 34 Districts affected by Left Wing Extremism under implementation from 2011-12 aims to establish ITIs and Skill Development Centers in LWE affected districts.

- **Infrastructure Development:** Road Connectivity, communication needs to be rapidly scaled up in LWE affected districts. E.g.: Mobile towers being set up in remote areas.

- **Community policing** improves interface with citizens and makes police more sensitive. E.g. (i) Janamaithri Suraksha Padhathi, Kerala (ii) Friends of Police Movement (FOP), Tamil Nadu (iii) Suraksha Setu – Safe City Surat Project

- **Improve communication network:** There should be sharing of information & knowledge to improve the functioning of police force.

- **Better Surveillance and Monitoring** with standardization, deployment and integration of private security surveillance system.

**Conclusion**

The Union government and the States must continue to learn from successes such as the expansion of welfare and rights paradigms in limiting the movement and failures that have led to the continuing spiral of violence in select districts. Through a holistic approach focusing on development and security related interventions, the LWE problem can be successfully tackled.

**Security challenges and their management in border areas – linkages of organized crime with terrorism.**

In this era of global politics when Chinese belligerence is heightening, India and the world must recognise how the BRI is aiming to reshape the global order in fundamental ways and address it. Analyse. (250 words)

**Difficulty level:** Moderate

**Reference:** Live Mint

**Why the question:**
The Blue Dot Network formed by the US, Japan and Australia was intended to counter China’s BRI. But how effective this option will prove remains unclear.

**Key Demand of the question:**
To write about the threats posed by China’s BRI and steps taken in that regard.

**Directive word:**
Analyse – When asked to analyse, you must examine methodically the structure or nature of the topic by separating it into component parts and present them in a summary.

**Structure of the answer:**

**Introduction:**
Begin by describing the One Belt One Road initiative of China.

**Body:**
First, write about the various concerns for India in particular. Both geopolitically, on border security as well as economically.

Next, write about the concerns for the world from BRI and global order. Mention the recent developments.

Next, write about the steps taken by India and world to counter the BRI of China.

**Conclusion:**
Write how with its Western partners, now New Delhi can hope to shape an alternative to Chinese predatory practices and push back against Beijing’s economic agenda.

Introduction

China’s Belt and Road Initiative (BRI), launched in 2013 by President Xi Jinping during official visits to Kazakhstan and Indonesia, is among the world’s most ambitious infrastructure projects ever conceived. It is a union of development and investment initiatives that would stretch from East Asia to Europe, and in the process significantly expand China’s economic and political influence in these massive regions.

Body

India’s concerns regarding China’s BRI

India has opposed BRI citing grounds of territorial sovereignty.

- **Growing Assertion:** China’s BRI stands on the pillars of both geopolitical and economic motivations. It runs parallel to China’s growing assertiveness in its bilateral relations, as seen in its increasingly hawkish actions in its immediate region and beyond.

- **Debt-trap in neighbourhood:** The story of Sri Lanka’s hambantota, for example, being saddled by the burden of unsustainable debt to China is well-documented.
  
  o In 2018, former Malaysian President Mahathir Mohamad suspended work on certain BRI ventures in his country over concerns of mounting debts to China.
  
  o All these areas are India’s very own backyard and it has security implications for India.

- **CPEC:** India’s objection to the China-Pakistan Economic Corridor (CPEC) is that it runs through parts of Pakistan Occupied Kashmir (PoK), and this has led to the Indian government’s decision to stay away from the BRI summit in the past.
• **Connecting to Gwadar**: The ultimate aim is to connect from Xinjiang to Gwadar, through CPEC. This will ensure that China overcomes the Malacca dilemma and secures an alternate path. India’s leverage in the Indian ocean will be lost.

• **Military deployment**: The fact that the Chinese have begun to deploy 30,000 security personnel to protect the projects along the CPEC route makes it an active player in the politics of the Indian sub-continent. Clearly, this is a case of double standards.

**Concerns of the world over BRI and recent developments**

• **Chinese led globalisation**: BRI runs “counter” to the agenda of liberalising trade and “pushed the balance of power in favour of subsidised Chinese companies”.

• **Debt crisis**: When these emerging debt crises in BRI countries materialize, they will *undermine global economic growth and macroeconomic stability* at a time when the COVID-19 pandemic has already led to the sharpest global economic contraction since the Great Depression.
  
  o Debt crises also have the potential to increase the risk of a financial crisis.
  
  o Sri Lanka, the Maldives, and Malaysia had second thoughts on some of the infrastructure projects over fears of a “debt trap”, and allegations of corruption in BRI projects became election issues.

• **Anti-competitive**: The EU and USA have contested that BRO is anti-competitive. BRI creates unfair advantages for Chinese companies, leaving U.S. and other foreign companies unable to compete in a number of BRI countries.

• **Critics of the BRI** say it is designed to bolster China’s political and military influence, bringing little reward to other nations, and warn that it could be used to *spread technologies capable of spying on Western interests*.

**Steps taken by India and other to counter BRI**

• India has tried to *convince countries that the BRI is a plan to dominate Asia*, warning of what some analysts have called a “String of Pearls” geoeconomics strategy whereby China creates unsustainable debt burdens for its Indian Ocean neighbours in order to *seize control of regional choke points*.

• BRI will make China’s claims of South China sea more aggressive. India has convinced the QUAD to reign in efforts regarding the same. ASEAN is also pushing for code of conduct in south China sea.

• **Asia-Africa Growth corridor**: The aim of the Asia-Africa Growth Corridor is to develop *infrastructure and digital connectivity* in Africa through *Indo-Japan collaboration*.
  
  o It is touted as a counter move to China’s BRI in African region.

• **The Blue Dot Network** formed by the US, Japan and Australia was intended to counter China’s BRI.

• **G-7 plan**: The infrastructure plan is being led by United States president Joe Biden.
The Build Back Better World (B3W) initiative, will provide a transparent infrastructure partnership to help narrow the $40 trillion, the leaders at the G7 summit hoped.

The B3W plan discussed by the US, Britain, Canada, France, Germany, Japan and Italy calls for spending hundreds of billions of dollars in collaboration with the private sector while adhering to climate standards and labour practices.

Conclusion

Any connectivity initiative must be based on universally recognized international norms. They must follow principles of openness, transparency and financial responsibility and must be pursued in a manner that respects sovereignty, equality and territorial integrity of nations. India must ensure cooperation of like-minded nations to counter BRI’s aggressive strategy and provide viable alternatives to nations.

Value Addition

Overview: BRI

- The plan, initially named ‘One Belt, One Road’, is two-pronged: the overland Silk Road Economic Belt, and the Maritime Silk Road.

- On land, Beijing aims to connect the country’s underdeveloped hinterland to Europe through Central Asia; the maritime component will build ports and railways to connect the fast-growing Southeast Asian region to China’s southern provinces.

- More than 60 countries—home to nothing less than two-thirds of the world’s population—have signed on to BRI projects, or else have indicated an interest.

- Morgan Stanley has predicted that China’s overall expenses over the entire duration of the BRI could reach $1.2–1.3 trillion by 2027
INDIAN
ADMINISTRATIVE SERVICE

TOP 100
RANKS, SINCE 2014

3 LOCATIONS
BENGALURU, DELHI, HYDERABAD

1 INSTITUTE
INSIGHTS IAS

#UnleashTheIASInYou!
www.insightsonindia.com
The website that redefined IAS Exam preparation