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G.S PAPER I

1. SOCIETY

Having proper social infrastructure ensures better impact on the learning outcomes for children in the country. Discuss

KEY POINTS

- The Social Infrastructure includes the health care, the management of the education and health services in India that form the basic social infrastructure.
- Inadequate access to safe drinking water and clean cooking fuel leads to serious health concerns.
- The 2019 NSSO Time Use survey shows that 42.8 per cent of households in rural areas continued to use firewood as their primary source of cooking fuel.
- This is consistent with a CAG report (2019) that notes that the average refill consumption is not at par with the increase in LPG coverage for Pradhan Mantri Ujjwala Yojana households, with the high cost of LPG refill being the primary deterrent.
- Only 38.76 per cent of rural households have indoor piped water connections.
- The “Har Ghar Jal” initiative under the National Jal Jeevan Mission (NJJM) aims to provide piped water for all rural households by 2024.
- Data from the 2011-12 Indian Human Development Survey (IHDS) suggest, on an average, women spend nearly 45-50 minutes per day in collecting water or fuel, with huge variation across states.
- The Annual Survey of Education Report 2020 survey indicates that only 30 per cent of rural children received learning materials.
- Providing both physical and financial access to time-saving infrastructure such as LPG and piped water that frees up mother’s time to supervise children’s learning outcome.

The idea of poverty line needs to be established comprehensively to recognise the state of the poor people in the country. Analyse

KEY POINTS

- The World Bank \$2-a-day (poverty line) might be inadequate but it would be a start and higher than the last line proposed by the C. Rangarajan committee.
- A survey in 2013 had said India stood at 99 among 131 countries, and with a median income of \$616 per annum, it was the lowest among BRICS.
- The fall of India in the Global Hunger Index to serious hunger category, National Family Health Survey or NFHS-5, which had worrying markers of increased malnutrition, infant mortality and maternal health.

- In 2019, the global Multidimensional Poverty Index reported that India lifted 271 million citizens out of poverty between 2006 and 2016.
- World Bank data estimated that 'the number of poor in India, on the basis of an income of \$2 per day or less in purchasing power parity, has more than doubled to 134 million from 60 million in just a year due to the pandemic-induced recession.
- Knowing the numbers and making them public makes it possible to get public opinion to support massive and urgent cash transfers.
- All policies can be honestly evaluated on the basis of whether they meet the needs of the majority.
- The massive slide into poverty in India that is clear in domestic and international surveys and anecdotal evidence must meet with an institutional response.

G.S PAPER II

2. POLITY

Federal coalition is required to preserve the idea of plurality in the country. Do you agree with this view? Comment

KEY POINTS

- There has been increasing centralisation in resource allocations and welfare interventions.
- The gap between the revenue that State governments are allowed to generate and the expenditure that they are expected to incur has been widening, particularly with the implementation of Goods and Services Tax (GST).
- Centre has been encroaching into domains under State government control through centrally sponsored schemes in sectors such as education and health where States are required to spend about 85% and 82% of public expenditure, respectively.
- The Centre has sought to insulate Indian big business from global competition by choosing not to enter into the Regional Comprehensive Economic Partnership (RCEP), but has eroded the power of small businesses through support for GST and the call for a single national market.
- Bigger players are more likely to benefit from a removal of State-level barriers to trade at the expense of smaller regional players.
- This re-calibration of State-capital relations works against smaller entrepreneurs and entrepreneurship.
- The use of executive and legislative aggression. Central institutions are increasingly weakening the policy levers of State institutions.
- For instance, the Centre has been meddling with the appointments of vice-chancellors in universities funded and run by State governments, undermining system of checks and balances.



- This erosion of federal relations is often countered through appeals to restore the constitutional powers of States.

Considering the issues in political party, administrative orders of Election commission of India greatly possess the judicial capacity to find better solution. Examine

KEY POINTS

- The EC does not take suo motu cognisance of cases and comes into the picture only when one party approaches it with its claim.
- The Commission then starts proceedings which are quasi-judicial in nature, under Section 15 of the Election Symbols (Reservation and Allotment) Order, 1968, by giving a notice to the other faction to give its version
- The EC examines the claims and counterclaims of the two factions to determine which one has the majority.
- The EC looks at the strength of each group, in the party's organisation and in the legislatures, applying the test of majority.
- Whenever the EC could not determine the strength of rival groups based on support within the party organisation, it fell back on testing the majority among elected MPs and MLAs.
- Many of these cases have landed in the Supreme Court. The most significant case was that of the INC in 1969 where the Supreme Court upheld the order of the ECI applying the test of majority (Sadiq Ali vs ECI, 1972).
- It has always been the practice of the commission to give a detailed, speaking order which will stand judicial scrutiny. This is why the EC's quasi judicial or administrative orders almost always pass the judicial test.

3. GOVERNANCE

The problems in India's criminal justice system must be addressed comprehensively to help the people repose faith in governance. Analyse

KEY POINTS

- In 2002, based on the recommendations of the 172nd report of the Law Commission of India, major changes were made in the Evidence Act.
- The Supreme Court, in *Aparna Bhat and Ors. vs the State of Madhya Pradesh & Ors.* (2021) specifically said that courts should desist from expressing any stereotype opinion.

Prison reforms

- Indian prisons face three obstacles: overcrowding, understaffing and underfunding.
- No separation between hard criminals and under trails.
- Justice Mulla Committee 1983, All India cadre for prison staff and Bringing prison under the concurrent list
- Government should form a National Policy on Prisons

Police reforms



- Police act in India is primarily based on 1861 act, which is contrary to democratic requirement.
- Lack of technological capabilities necessary to perform quality investigations.
- Allegiance towards ruling party.

Prakash singh case

- Constitute a State Security Commission (SSC) to ensure that state government does not exercise influence or pressure on the police.
- Ensure that the DGP is appointed through the merit-based transparent process and secure a minimum tenure of two years.

4. GOVERNMENT POLICIES

In various ways government of India can support the children who lost their parents due to pandemic. Explain

KEY POINTS

- Children are vulnerable during disasters. Their safety, health, holistic development, and even their very futures are at risk.

Ways to handle the problem

- Karnataka came up with a set of light-touch daily activities on YouTube and television to keep children engaged and stimulated.
- The state's 5,600-plus rural libraries were revitalised, with separate children's sections, bright murals, and new furniture.
- Short, medium and long-term measures are needed, along with empathy and kindness, for the care and protection of children affected or infected by Covid.
- Fake messages about adopting "Covid orphans" should be firmly dealt by Child adoption resource authority
- Foster care and adoption of children who have lost parents to Covid should take place only through the legal process.
- Child protection staff must be positioned at hospitals to help with children who are in the care of child services.
- Meanwhile, in the wake of the second wave, communities will need support to process their grief and recover from the loss of lives. Grief and trauma counsellors will need to be prepared for this responsibility.
- Master trainers can be identified and trained in districts, selected from high school teachers, nurses, mental health counsellors, and anganwadi supervisors. Children will need emotional support to speak about their loss.

Though government of India has taken considerable measures in eradicating child labour, challenges still persist. Elucidate

KEY POINTS

- A Government of India survey suggests that 95% of the children in the age group of 6-13 years are attending educational institutions (formal and informal) while the corresponding figures for those in the age group of 14-17 years is 79.6%.
- Child labour in India decreased in the decade 2001 to 2011, and this demonstrates that the right combination of policy and programmatic interventions can make a difference.
- Policy interventions such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005, the Right to Education Act 2009 and the Mid Day Meal Scheme have paved the way for children to be in schools.
- Concerted efforts towards convergence of government schemes is also the focus of the implementation of the National Child Labour Project.
- Ratifying International Labour Organization Conventions Nos. 138 and 182 in 2017, the Indian government further demonstrated its commitment to the elimination of child labour.
- As many schools and educational institutions are moving to online platforms for continuation of learning, the 'digital divide' is a challenge that India has to reconcile within the next several years.
- A strong alliance is needed towards ending child labour in all its forms by 2025 as countries around the world have agreed to in Sustainable Development Goal 8.7.

Government of India must work on addressing various issues to fulfill the intentions behind sustainable development goals. Analyse

KEY POINTS

- India's push in the right direction in achieving Sustainable Development Goals (SDGs) related to clean energy, urban development and health has helped it improve its overall SDG score from 60 in 2019 to 66 in 2021, according to NITI Aayog's SDG India Index 2020-21.
- Index reveals that there has been a major decline in the areas of industry, innovation and infrastructure besides decent work and economic growth, again made worse by the lockdowns imposed by the governments seeking to tackle the COVID-19 pandemic.
- The 2020-21 Index drops several economic indicators and gives greater weightage to social equality indicators such as representation of women and people from marginalised communities in legislatures and local governance institutions, and crimes against SC/ST communities.
- By dropping the well-recognised Gini coefficient measure and the growth rate for household expenditure per capita among 40% of rural and urban populations .

- SDG score on inequality seems to have missed out on capturing the impact of the pandemic on wealth inequality. This could be a significant miss as a UN assessment of the impact of COVID-19 had said that the South Asian region may see rising inequality.
- Methodological issues on measuring other SDGs have been flagged before, but the lack of adequate measurement of economic inequality seems to be a glaring miss.

The vision regarding electric vehicles in the country depends on various factors to ensure better developmental outcomes. Explain

KEY POINTS

- Both the Centre and the states have shown resolve to push electric-vehicle (EV) adoption, which ties in well with India's climate ambitions.
- Karnataka lowered land-acquisition costs for EV-component manufacturers, Delhi government had announced a slew of incentives, including subsidies for purchases and road tax waivers.
- Centre's Rs 18,000-crore Productive Linked Incentive scheme for battery manufacturing should spur large-scale battery manufacturing in the country.
- ICRA says electric two- and three-wheelers will constitute as much as 40% of the new vehicle sales in three years.
- India allows numerous charging connector standards (for fast-charging) which can be challenging for interoperability and thus lead to sub-optimal use of infrastructure.
- Given the dynamics in India, there is also a need to work on contactless charging, quite like what is being done in China and South Korea.
- The other aspect of the EV ecosystem that needs immediate attention is connecting charging infrastructure to renewable power.
- Even natural gas is no great substitute, since the life-cycle greenhouse gas emissions don't significantly differ between a battery-operated EV and an ICE-operated (fossil-fuel consuming) vehicle in such a scenario.
- If the government really wants to put India among the EV leaders, it will need to ensure that it gets it right on both charging infrastructure and energy mix for charging stations.

Government schemes have the necessary components to address the mental health issues but more needs to be done in the context of pandemic. Explain

KEY POINTS

- India introduced the National Mental Health Policy (NMHP) in 2014, and a rights-based Mental Healthcare Act in 2017, which replaced the Mental Healthcare Act of 1987.
- About 72% of member states had a standalone policy or plan for mental health in 2017.
- Government expenditure on hospitals dealing with mental health issues as a percentage of total government expenditure on mental health is 1.3% in India; in developed countries, it ranges from 3% to 15%.



- In India, the share of mental hospitals per 1,00,000 population is as low as 0.01 in line with developing countries, according to the WHO.

Additional measures

- India could reduce the treatment gap for mental disorders, increase the number of personnel in the mental health sector, work towards reducing discriminatory attitudes.
- More counselling facilities, especially in rural areas, with special support for women through the provision of women doctors are needed.
- More telemedicine, telephone-based helpline numbers, and mental health apps could help. Communities and families have an important role in this regard and so do community-based programmes.
- There needs to be a road map for mental health awareness. This should include the traditional media, government programmes, the education system, industry, and social media.
- Media awareness and government involvement is already happening in India but both can improve.

Discuss the measures that are required to be taken by the central government to tackle the economic challenges during the pandemic.

KEY POINTS

- A real GDP growth of 7.8 per cent would be required in 2021-22 to reach back to 2019-20 real GDP levels.
- It is also important to consider nominal GDP growth for 2021-22 since that would be a critical determinant of fiscal prospects.
- In the light of supply-side and cost-push pressures, the RBI has projected CPI inflation at 5.1 per cent.
- The government and the RBI are keen to keep the interest rate low despite this heavy borrowing.

Centre needs to do

- An increase in the provision for income support measures for the vulnerable rural and urban population.
- This would require an amount of Rs 1 lakh crore which may be partly provided through expenditure restructuring.
- In light of the recent decision, the budgeted expenditure on vaccination of Rs 0.35 lakh crore ought to be augmented, at the very least, doubled.
- Additional capital expenditure for select sectors, particularly healthcare, should also be provided for. This may be another Rs 1 lakh crore.
- Government need to plan for a fiscal deficit of about 7.9 per cent of GDP.
- The household sector's appetite for financial assets may not increase. The external sector's demand for Indian sovereign bonds may also be lukewarm.



The early enactment of the Electricity Bill 2021, is now an imperative in order to provide sustainable power supply across the length and breadth of country. Discuss

KEY POINTS

- Despite the Centre's Rs 1.25-lakh-crore liquidity infusion scheme to enable state distribution companies (discoms) to clear the dues of generators, a large number of renewable energy producers in many states remain to be paid.
- The situation in Andhra Pradesh is alarming due to the state government's insistence that old Power Purchase Agreements for solar and wind energy be renegotiated, against the recently discovered price through competitive bidding.
- The ministry of power had ordered that power shall be despatched by the National Load Despatch Centre and Regional Load Despatch Centre/s (NLDC / RLDC) only on production of a letter of credit (LC) for the desired quantum of electricity by the state discom.
- According to the High Court, the Centre had overreached powers accorded to it under the Electricity Act 2003, and the attempt to ensure that PPAs between the discoms and renewable energy generators are enforced and implemented was beyond its authority provided in the law.
- Given the exigency of the situation, as an immediate measure, the route of ordinance seems to be the only option. The power of the president of India to promulgate ordinances during recess of Parliament is provided for under Article 123 of the Constitution (legislative powers of the President).
- The president may, therefore, promulgate an ordinance, and even if the ordinance is to operate only for six weeks, some financial relief will be provided to the renewable energy generators.
- The ambitious national target of renewable energy capacity addition calls for an urgent review of the policy framework for India.
- There is need to look at a long-term solution keeping in mind that the states are equal stakeholders as the subject of electricity is in the concurrent list of the Constitution.

The occurrence of overlapping hazards pushes Government of India to the need for long-term preparedness along with multi-disciplinary approach. Explain

KEY POINTS

- The Western Coast (Gujarat in particular) and then the eastern coast (Odisha and West Bengal) were battered with cyclones Tauktae in the west and Yaas in the east.
- While cyclones and storms are not unusual on the Eastern coast (witnessed Aila, Bulbul, Amphan in the past), what was unique this time was that an environmental hazard happened in the middle of another mega hazard – the Covid-19 pandemic.
- Accordingly, the disaster risk reduction activities need to be geared towards first an interdisciplinary diagnosis of various risk drivers.



- Last year millions of hectares over the Ganga-Brahmaputra flood plains and the delta have been subjected to riverine and flash floods on clockwork regularity.
- Vulnerability, or the propensity of loss, is itself an outcome of complicated processes.
- However, this understanding of vulnerability often equates it with exposure and biophysical factors. Hence limiting the exposure, either through zoning or planned retreat, becomes an important way of reducing this biophysical vulnerability.
- But vulnerability also emerges from underlying socio-economic-political conditions. Often the (socially, economically and politically) marginalised population have to reside in such precarious areas.
- National disaster management act 2005 has to be used effectively to minimize the hazards.

5. CIVIL SOCIETY

The role of Non-governmental organizations is crucial in providing better health care facilities at grass-root level in rural India. Substantiate

KEY POINTS

- According to the Rural Health Statistics (RHS 2019-20), there are 155,404 rural Sub Centres (SC), 24,918 Primary Health Centres (PHCs) and 5,183 Community Health Centres (CHCs).
- As per RHS 2018, there is a shortfall of 18% SCs, 22% PHCs and 30% CHCs. What makes it worse is the inaccessibility of PHCs and CHCs.
- India has a doctor-population ratio of 1:1445; the World Health Organisation (WHO) recommends a ratio of 1:1000. The doctor population ratio in Bihar is 1:28,391.
- A care facility in Parsa (outside Patna) was home-cooked meals by women group members who prepared the meals at the homes and provided to the facility.
- One of the key elements of the National Health Mission is the Village Health, Sanitation and Nutrition Committee (VHSNC).
- The committees were formed to take collective actions on issues related to health and its social determinants at the village level.
- These along with the local youth can be trained as care givers with basic training on Covid care from clinically reputed institution.
- Rogi Kalyan Samitis which can play a critical role in setting up, functioning, monitoring and resourcing of the Covid management facilities.
- These Samitis have the power to prescribe, generate and use the funds with it as per its best judgement for smooth functioning and maintaining the quality of services.
- This makes them critical players in managing Covid facilities. In fact, NGOs can work in coordination with the Samitis to set up Covid facilities in rural areas.



6. EDUCATION

Performance grading index can transform the performance of schools as recognised by right to education act 2009 in the country? Analyse

KEY POINTS

- The Union Education Ministry has been attempting to get States into a competitive mode in upgrading their school education system by recognising progress with a Performance Grading Index (PGI) that assigns them a score.
- In the latest set of scores and grades for the pre-COVID-19 year, 2019-20, the Andaman and Nicobar islands, Chandigarh, Kerala, Punjab and Tamil Nadu have performed the best, although they still fall short of the 951-1,000 points slab, the highest possible.
- It should be heartening to 33 States and Union Territories that their PGI scores have improved over the previous year.
- The score is derived using databases on 70 parameters such as access, equity, governance processes, infrastructure and facilities, and learning outcomes that are mostly self-reported by the States.
- This initiative is laudable, but it can work only if governments and Opposition parties see value in strong and open school education, and work to strengthen access, equity and infrastructure by budgeting fees and funds for universalisation.
- India's school system has to contend with not just patchy access and infrastructure, but major equity issues that have come to the fore during the pandemic.
- The PGI scores show that the southern and western States are on firm ground to achieve this, while those in central India and parts of the east and Northeast are less resourced.

With the introduction National Education Policy 2020, transformative education policy framework is the need of the hour to effectively boost the student learning capacity. Examine

KEY POINTS

- India's new National Education Policy (NEP) 2020 is responsive to the call to integrate technology at every level of instruction.
- It envisions the establishment of an autonomous body, the National Education Technology Forum (NETF), to spearhead efforts towards providing a strategic thrust to the deployment and use of technology.
- India is well-poised to take this leap forward with increasing access to tech-based infrastructure by flagship programmes such as Digital India.
- Conditional on good learning design, technology holds promise and has incredible potential in enabling greater personalisation of education and enhancing educational productivity.
- The Hamara Vidhyalaya in Namsai district, Arunachal Pradesh, is fostering tech-based performance assessment.

- Samarth in Gujarat is facilitating the online professional development of lakhs of teachers in collaboration with IIM-Ahmedabad;
- Jharkhand's DigiSATH is spearheading behaviour change by establishing stronger parent-teacher-student linkages;
- lessons may be drawn from the Government of India's Aspirational Districts Programme on tech-enabled monitoring and implementation that emphasises citizen engagement, partnerships and effective service delivery.
- Special attention must be paid to address the digital divide at two levels — access and skills to effectively use technology and leverage its benefits.
- The NITI Aayog's India Knowledge Hub and the Ministry of Education's DIKSHA and ShaGun platforms can facilitate and amplify long term learning.

7. HEALTH

By reducing premature mortalities due to Non-communicable diseases will make India resilient to the viral pandemics of the future. Discuss

KEY POINTS

- India's Covid case fatality at 1.16 per cent is nearly half of the global average of 2.17 per cent.
- India began implementing the multi sector NCD action plan to achieve 25 per cent reduction in premature mortalities due to NCD by 2025.
- The Atmanirbhar Swasth Bharat scheme is a major initiative, which will invest over Rs 64,000 crore in setting up 17,800 rural and 11,000 urban health and wellness centres.
- Under Ayushman Bharat, India has expanded the scope of primary healthcare to include screening and diagnosis of NCD like CVD, cancer and chronic respiratory diseases.
- The PM's health insurance scheme covers 100 million of the most vulnerable population and eliminates out-of-pocket expenditures for the poorest which could be as high as 72 per cent if not covered by public insurance.
- The replacement of polluting fuel wood with LPG under the PM Ujjwala Yojana in 90 million families has significantly reduced the risk of the chronic lung diseases and cancer that women were exposed to.
- A key lesson emerging from this international call to action was to synergise the strengthening of health sector by ensuring universal access.
- Achieving the SDG by reducing one-third of premature mortalities due to NCD will make India resilient to the viral pandemics of the future.



A key lesson from the pandemic is that India needs to transform its rural health care infrastructure for better livelihood. Explain

KEY POINTS

- The second wave of the novel coronavirus pandemic has exposed the inadequate and poor health infrastructure in the rural areas.
- The fact shared by Union Minister of State for Health and Family Welfare suggest that 29,337 primary health centres (PHCs) are required in the rural areas of the country.
- In the fast-changing health scenario, we should have one expanded PHC for every 10 villages along with the provision of some beds and other minimum necessary facilities.
- It is of utmost importance that governments everywhere engage with all kinds of rural community organisations such as panchayats, gram sabha, notified area committees, municipal bodies and non-governmental organisations in minimising the adverse impact of the pandemic on rural life.
- For that purpose, in Haryana, we constituted Swasthya Kalyan Samitis, or SKSs for all CHCs, PHCs which has proved to be an effective management.
- The chain of SHCs, PHCs and CHCs can very well take care of the multiple health needs of our people. They should have the health data of people in their respective areas.
- It will enable them to identify those likely to slip into the secondary or tertiary care zone.

Improving nutrition calls for a systems approach, cutting across various components in the country. In the context of pandemic, analyse

KEY POINTS

- The government has prioritised addressing malnutrition through the Prime Minister's Overarching Scheme for Holistic Nourishment (POSHAN) Abhiyaan and with updated POSHAN 2.0 guidelines.
- The introduction of community-based programmes for severe acute malnutrition, Jan Andolans, and community-based events, has led to the implementation of a holistic approach to addressing malnutrition.
- Poshan Abhiyaan also emphasised the importance of a data-driven approach to plan and manage delivery of nutrition services through anganwadi workers (AWWs).
- It is this need to monitor and improve interventions to address malnutrition that led to the development and deployment of the "Poshan Tracker" by the Ministry of Women and Child Development.
- It aims to provide a holistic view of distribution and access of nutrition services by anganwadi centres and AWWs to eligible groups.
- Its centralised data architecture enables interfaces with digital technology systems of other ministries, to help ensure that households which fall in the critical 1,000-day period receive benefits.
- Improving nutrition calls for a systems approach, cutting across health, food and care systems with data-backed digital tools providing an enabling backbone to scale evidence-based interventions.



- Recognising this, the government, working closely with development partners and community groups, in Uttar Pradesh, Bihar, Odisha and other states, has supported setting up “Poshan Vatikas” or nutrition gardens.

Should the right access to health care be made as a fundamental right to shift our approach towards better healthcare? Examine

KEY POINTS

- Bandhua Mukti Morcha v. Union of India established that with respect to workers, the constitutional right to life is inclusive of the right to health, brought to light the limitations of the country's healthcare systems to serve its poorest.
- The judicial interpretation of the right to life and liberty under Article 21 in several judgments as inclusive of health was crucial, but has its limitations.
- The universal access to healthcare is now as achievable as it is indispensable.
- Ayushman Bharat is an ambitious scheme with great potential, but there is a difference between a rights and a service-delivery model of development.
- If health is a fundamental right, it will give a spine to the entire health ecosystem, empower doctors and healthcare workers, and ensure transparency, inclusivity, and accountability.
- Moreover, it will pave the way for special legislation, capable institutions, increased budgets, medical training and research, wellness and prevention, and outreach of services.
- The right to education too had long been upheld as implicit to the right to life before the constitutional amendment that established it as fundamental in its own right.
- Now, the primary school enrolment rate is over 95 per cent, a target believed to be impossible 15 years ago.
- This is the time for a constitutional amendment to make health a fundamental right.

India's intention to achieve zero hunger Sustainable development goal is closely interlinked with the policy making towards climate change. Explain

KEY POINTS

- NITI Aayog recently released the SDG India Index 2020-21, highlighting the national and states' progress on SDGs.
- Some of the significant statistics specific to the SDG-2, the goal on zero-hunger include, 34.7% children aged under five in India are stunted; 40.5% children between 6-59 months are anaemic.
- India's food system faces negative consequences of the Green Revolution technologies.
- While Indian agriculture is increasingly getting adversely impacted by the vicissitudes of climate change, it also is a significant contributor to GHG emissions.

- As per third Biennial Update Report submitted by Government of India to UNFCCC, agriculture sector contributes 14% of the total emissions.
- The natural farming practices are the commonest example, which have since been tried and scaled up in parts of India (Andhra Pradesh) bring synergy towards ecosystem services and biodiversity conservation.
- Conservation agriculture offers solutions with good agronomy and soil management such as zero-tillage or no-till farming, crop rotation, in-situ crop harvest residue management/mulching, etc, and industrial uses like baling and bio-fuel production.
- POSHAN Abhiyaan, India's national nutrition mission, can play an effective role in addressing the issues of persistent malnutrition by bringing all relevant ministries and stakeholders together.
- According to FAO estimates, winning the fight against food loss and waste can save India \$61 billion in 2050 through increased industry profitability and reduced food insecurity.

8. INTERNATIONAL RELATIONS

Having multi-faceted engagement with Africa, the foreign policy implementation needs a comprehensive review. Critically Analyse

- **KEY POINTS**
- India-Africa trade is on a decline. According to the Confederation of Indian Industry, in 2020-21, India's exports to and imports from Africa stood, respectively, at \$27.7 billion and \$28.2 billion, a reduction of 4.4% and 25% over the previous year.
- India's investments in Africa too saw a decrease from \$3.2 billion in 2019-20 to \$2.9 billion in 2020-21. India's top three exports to Africa are mineral fuels and oils (processed petroleum products), pharmaceutical products and vehicles.
- A recent World Health Organization survey revealed that 41 African countries had fewer than 2,000 working ventilators among them.
- While China has successfully used the pandemic to expand its footprint by increasing the outflow of its vaccines, unfortunately India's 'vax diplomacy' has suffered a setback.
- This came in the wake of the debilitating second wave of COVID-19 in the country and the shortage of vaccine raw materials from the U.S. Geopolitical tensions in Asia.
- The third India-Africa Forum Summit was held in 2015. The fourth summit, pending since last year, should be held as soon as possible, even if in a virtual format.
- Fresh financial resources for grants and concessional loans to Africa must be allocated, as previous allocations stand almost fully exhausted.
- The recent India-EU Summit has identified Africa as a region where a partnership-based approach will be followed.



G.S PAPER III

9. INDIAN ECONOMY

Boosting arbitration process is one of the most important ways to revive the economy in the country. Discuss

KEY POINTS

- When the Arbitration and Conciliation Act 1996 was amended in 2015, to ensure time-bound completion of arbitration with minimal judicial interference.
- Contracting parties are more likely to opt for jurisdictions which permit third-party funding.
- In 2014, the government expressed its desire to have a phase-wise opening of the legal sector.
- If the government the largest litigant incorporates arbitration clauses, a robust economy around arbitration could get built, reducing the work-load of the courts.

Ways to revive the economy

- Improvement in the ease of doing business for the stake holders, as per ease of doing business index 2020, India has improved its rankings.
- More compliance with laws and regulations by the stakeholders.
- Ease of dispute resolution process, work-load of judiciary reduces further.
- Produces a better investment climate for the investors.
- Ease of entry and exit policies.

The increase in use of digital payments in the country shows Central government success in enabling financial inclusion. Do you agree with this view? Analyse

KEY POINTS

- A YouGov survey showed that 67 per cent of urban Indian women responding to the survey use digital modes of payment on a general basis.
- The digital payment boom is indicative of a larger paradigm shift in the ease of access to financial services.
- By giving unique digital identity Aadhaar and by building the Jan-Dhan-Aadhar-Mobile and Universal Payment Interface platform, the government has been creating the ground for greater financial inclusion.
- The Pradhan Mantri Jan Dhan Yojana has added 42.4 crore bank accounts in the past seven years, of which 28 crore are owned by rural Indians.
- Over 23.5 crore women now own bank accounts across rural and urban India. While Jan Dhan was the first pillar of the JAM trinity, Aadhaar card seeding and bank account linkages to mobile numbers have empowered people.

- The JAM trinity has helped people know their account status, receive scholarships and fellowships, get fertiliser and LPG subsidy, disability pensions and farm income support.
- With an estimated saving of Rs 1.8 lakh crore, the success of DBT is a positive aspect for the central government.
- This is also critical to achieving the Sustainable Development Goals to which India remains committed, especially when it comes to fighting poverty, reducing gender inequalities and ushering in greater social equity, among others.

To ensure better economic recovery, the government needs to create fiscal support measures and quicken the pace of vaccinations. Explain

KEY POINTS

- Index of Industrial Production (IIP) estimates show all three sectoral constituents of the index mining, manufacturing and electricity suffered reverses.
- Manufacturing, which accounts for 77.6% of the IIP, saw production shrink 12.6%, and contributed significantly to a 13% sequential contraction in overall industrial output.
- Output of capital goods and consumer durables also lagged the corresponding 2019 levels by 14.3% and 11.6%, respectively, signalling that the outlook for investment in production capacity and discretionary consumption remains disconcertingly weak.
- the Composite PMI Output Index slid from 55.4 in April to 48.1 in May indicating a moderate reduction in activity.
- To ensure an abiding recovery, the government needs to expedite targeted, demand-creating fiscal support measures and drastically quicken the pace of vaccinations.
- The quick pace of vaccinations will help people to avert pandemic in future.
- Vaccinations also create better awareness among people and help them to take measures accordingly.
- Vaccinations need to be affordable and be made available to all, this is the responsibility of state government as health is a state subject.
- Also, cooperative federalism is required to prevent the spread of infection at appropriate time, thereby preventing economic crisis in the country.

As India moves to its aim of a cleaner, greener \$5-trillion economy, a roadmap for attracting green finance is essential. Do you agree with this view? Explain

KEY POINTS

- India is a signatory of and strong advocate for the United Nations Framework Convention on Climate Change (UNFCCC), under the Paris convention.
- The International Energy Agency (IEA) estimates that India will need to invest \$1.4 trillion over the next 20 years in the process.



- Green financing requires finding the right capital willing to take risks of failure.
- The recent change in political priorities towards climate change around the world means that funds like the GCF could see renewed large inflows
- Similarly, the Global Environment Facility (GEF), set up by 40 donor countries, including the US, the UK, Germany, France and Australia, has so far funded 78 projects worth \$570 million in grants and \$4.8 billion through co-financing in India.
- As countries move towards net zero, they will hit binding constraints on the carbon that companies (or consumers) in such countries can emit.
- The total carbon-equivalent emissions in the world are about 50 billion tonnes a year.
- Global agreements like the Kyoto Protocol need to be put in place to get this market moving.
- Policy innovation is required in (1) identifying technologies that work for India and nurturing these into viable businesses, (2) executing fair and just transition plans for impacted people and industries, and (3) enabling new instruments and sources of capital.

It is time to kick start concept of green print to convert India's economy into a sustainability powerhouse. Do you agree with this view? Comment

KEY POINTS

- More than 100 countries have pledged net-zero greenhouse gas emissions in the next 30-40 years. G-7 members have said they would stop international financing of coal by next year for projects not fitted with carbon capture and storage technology.
- The European Commission is expected to propose carbon border tariffs. The aim is to put EU firms on a par with competitors.
- India must strongly highlight the failure of the larger polluters to meet their targets (for emission reduction and for climate finance).
- It should also target the EU's carbon tariffs proposal, building a coalition of other major economies opposed to the unilateral move and preparing a legal challenge at the WTO.
- Equity means the playing field is intentionally tilted to account for historical responsibilities. If India waits to react on either front, it will be too late.
- India will have to decarbonise until the economy adapting to climate shocks (many times worse than the pandemic). It should insist on greener credentials or by carbon tariffs in major export markets.
- India will also have to transform itself to a industrial leader, balancing environment and economy aspects.
- In order to have a sustainable environment, green print is necessary for the country, it can come through renewable energy market, green bonds, shifting towards green source of energy.

Micro small medium enterprises financing deficit can be narrowed down with help of policy and behavioral changes. Do you agree with this view? Comment

KEY POINTS

- The world over, micro, small and medium (MSME) enterprises are the backbone of a healthily balanced economy.
- The MSME Development Act of 2006 proposed guidelines for resolving the problem of delayed payments. Further, the Factoring Regulation Act, 2011, helped codify the factoring business to address payment delays.
- As per a recent report, Unlocking Credit for India's Job Creators, brought out by the Global Alliance of Mass entrepreneurship (GAME), the total outstanding payments to be made by buyers to registered MSMEs in India could be about ₹ 15 trillion.
- The trade receivables discounting system (TReDS) initiated by the Reserve Bank of India (RBI) is a unified platform for sellers, buyers and financiers to facilitate the financing of trade receivables of MSMEs from corporate, including government departments and public sector undertakings (PSUs).
- In January 2018, the Economic Survey noted that the goods and services tax (GST) offered exciting possibilities for not just ushering in a single market, but also for other efficiency gains.
- This would grant buyers and sellers access to e-invoices through a single window for factoring and also enhance competition and liquidity, reducing the price of factoring.
- A committee headed by U.K. Sinha had recommended that a credit enhancement mechanism for extending guarantees/comforts with respect to invoices accepted by smaller/lower-rated corporates be evolved.
- This could be facilitated by the National Credit Guarantee Trust Corporation and the department of financial services.

As the country faces an employment problem, skill development for youth has to be based on future employability. In the context of pandemic, analyse

KEY POINTS

- The government's skilling missions from the past and the current flagship scheme, the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), have helped. But the PMKVY dashboard says only 75% of those certified have been placed so far.
- Of the 49.72 lakh enrolled for short-term training, 45.37 lakh have been trained and 37.58 lakh assessed—only 19.75 of this lot have been reported by the training partner as placed.
- India's the working class is likely to see falling employment opportunities with the pandemic having badly bruised MSMEs.
- Dedicated skills universities, such as the one run by TeamLease, are probably a good idea where, in association with industry organisations, students can get a diploma along with some basic education.
- The government can, wherever possible, provide some kind of stipend since students may need to give up their jobs as well.

- Another crucial factor to get the skilling ecosystem right would be to have an easy-access electronic platform that matches skills available in villages and small towns to the job opportunities in the nearby cities as well as elsewhere in the country.
- Companies must play a big role too, either through CSR or through direct involvement in skilling. Else, the country faces an employment problem that could get increasingly challenging with each year of delay.

As the monetary policy needs to stay accommodative, it is time for Reserve Bank of India to take measures to soften the inflation blow. Explain

KEY POINTS

- Rising inflation hurts lenders and benefits borrowers. The government, one of the biggest borrowers, stands to benefit as high inflation will lower the national debt load in relation to the size of the economy.
- The Union budget 2021-22 assumed a 14.4 per cent growth in nominal GDP, actual growth is set to exceed over 16 per cent as per estimates.
- But nominal GDP estimate has gone up from 15 per cent to around 16.5 per cent as we now expect WPI and CPI to average 7.4 per cent and 5.3 per cent respectively.
- Lower food inflation, coupled with higher non-food inflation means reduced purchasing power for farmers the terms of trade.
- Inflation trends, specifically input prices (reflected better by WPI), matter for corporate performance as well.
- The RBI will have to closely monitor inflation trends and calibrate its policy response. It has not intervened on high inflation since the onset of the pandemic and, rightly so, in order to support growth.
- But the current spell of inflation is over a high base and a continuation of recent trends will persuade it to turn the focus back on inflation.
- Rising inflation reduces returns on fixed income instruments, including bank deposits, which account for over 50 per cent of households' financial savings.
- This has already induced a shift to riskier asset classes such as equities, which has ramifications for overall financial stability.

Considering India's development, finding free trade agreement (FTA) partners will be a shot in the arm for manufacturing industry in the country. Explain

KEY POINTS

- The thrust on FTAs with large developed markets like the US, Canada and the European Union has been gaining momentum for some time.
- FTA creates an extended market by including access to the FTA partner countries' market, a positive relationship between FTAs and FDI would emerge.



- Due to tariff eliminations, the markets of the FTA partner countries can be served from a single unified location. This effect allows some firms to grow beyond what they would have been able to achieve in the national market of a single country.
- A country with a modest market size but FTA access to large markets is likely to score over a large country with a big standalone market, especially if it can offer other incentives and create a more conducive environment.
- For example, Vietnam, which in itself is not a very large market, has successfully leveraged its preferential tariff access to many large Western and Asian markets through its trade agreements.
- Another example is Bangladesh, which has duty-free access to the EU, UK and Canada in textiles under their GSP (General System of Preferences) for LDC countries, thereby making Bangladesh a preferred destination for FDI in textiles and a competitor for Indian textiles.
- Finding FTA partners in large Western markets would indisputably be a boost in the arm for the manufacturing industry in the country and would allure many more.

Considering the situation of economic contraction, it can be a wise decision to revisit the privatisation of public enterprises. Do you agree with this view? Analyse

KEY POINTS

- Privatisation of the public sector, including banks, has been part of the wish list of economic reformers since 1991. This was at the core of the 'Washington Consensus'
- Unemployment has risen, incomes for growing numbers are falling, bank non-performing assets (NPAs) may be ballooning, and the fiscal deficit is rising.

Sick enterprises

- With its political strength, the Government should be able to close sick enterprises in a time-bound manner with a generous handshake for labour.
- Where private management through privatisation or induction of a strategic partner is the best way to restore value of these enterprises.
- Air India and the India Tourism Development Corporation (ITDC) hotels are good examples.
- With profitable public enterprises, the Government can continue to reduce its shareholding by offloading shares and even reducing its stake to less than 51% while remaining the promoter and being in control.

Implications

- The number of Indian private firms which can buy out public sector firms are very few.
- Successful large corporates need to be encouraged to invest and grow both in brownfield and greenfield modes in the domestic as well as international markets.
- This would be better for India entering a higher growth trajectory with an increase in investment rates which have been falling.

- With privatisation, this would end and unnecessarily generate social unrest.
-

10.AGRICULTURE

- ***It is time to provide a balance between India' agricultural exports and environmental aspects for a sustainable agriculture. Explain***

- **KEY POINTS**

- Agri-exports touched \$41.8 billion in FY 2020-21, registering a growth of 18 per cent over the previous year.
- Rice and sugar are well-known water guzzlers. They are heavily subsidised through cheap/free power for irrigation as well as fertilisers, especially urea.
- The biggest concern with surging rice and sugar exports from India is on the sustainability front.
- It is well known that a kg of sugar has a virtual water intake of about 2,000 litres. In 2020-21, India exported 7.5 million tonnes of sugar, implying that at least 15 billion cubic metres of water was exported through sugar alone.
- Farming practices such as alternate wetting drying (AWD), direct-seeded rice (DSR) and micro-irrigation will have to be taken up on a war footing.
- Indian agriculture was most globally integrated, with agri-trade (exports plus imports) touching 20 per cent of the agri-GDP.
- It has slid to 13.5 per cent by FY2020-21, indicating India is becoming less globally competitive in exports and more protectionist in imports, presumably in the name of Atmanirbhar Bharat.
- It is high time that policymakers revisit the entire gamut of rice and sugar systems from their MSP/FRP to their production in an environmentally sustainable manner.
- An export-led strategy also needs to minimise logistics costs by investing in better infrastructure and logistics.
- ***In rural economy, agricultural sector continues to remain crucial for any strategy of economic revival. Do you agree with this view? Comment***

- **KEY POINTS**

- Economic growth had already decelerated to 4% in 2019-20, the sharp decline in GDP was partly a result of the trend of a slowdown in economic activity since 2016-17.
- Agriculture was the only major sector (other than electricity, gas, water supply and other utility services) which reported an increase in Gross Value Added (GVA) in 2020-21.
- It not only provided jobs to returning migrants but also sustained the economy in the rural areas.
- Agriculture has not only been the biggest saviour during the period of the pandemic but has consistently been an important driver of the economy throughout the last five years.



- Unlike last year, the Government has not increased the allocation this year for the National Rural Employment Guarantee Scheme (NREGS).
- Agricultural wages continue to stagnate, one indicator of declining demand is the decline in wholesale prices of most of the agricultural commodities.
- The net result is a peculiar situation where output prices for dominant agricultural commodities in the domestic market are declining while consumer prices of essentials such as edible and pulses are contributing to rising inflation.
- Rising inflation further threatens to reduce the purchasing power of the rural economy struggling with declining incomes and job losses.
- Despite these setbacks, the rural economy including the agricultural economy continues to remain crucial for any strategy of economic revival.

11. ENERGY

The idea of Power Decarbonisation Obligations could work with effective governance in order to provide a sustainable renewable energy supply in the country. Explain

KEY POINTS

- In order to incentivise renewable energy, the Indian Electricity Act 2003, gave legal teeth to Renewable Purchase Obligations that mandate all electricity distribution licensees must purchase or produce a minimum specified quantity of their electricity from renewable energy sources.
- The discoms continue to incur “fixed costs” even when they do not draw power. In quite a few cases, the fixed costs paid by discoms to coal-based gencos may actually be more than the current prices of solar or wind power per kWh.
- This then leads us to question the continued relevance of RPOs and RECs and the option of evolving a more logical and robust system that can expedite decarbonisation of India’s power sector by 2050
- This new system could be called Power Decarbonisation Standards. The system would set a progressive threshold for decrease in purchase of coal-based power and a corresponding increase in purchase and absorption of renewable power by discoms.
- The Power Decarbonisation Standards, if adopted, would also ensure that a comprehensive plan is put in place to limit the setting up of new coal plants
- These can also be designated as Carbon Credit Certificates (CCCs) to be granted to the discoms by the regulators for annual reduction in purchase of coal power after a cut-off date.
- These CCCs could also become market-based financial instruments that can be traded domestically to start with, and, later on, internationally when the markets mature.



12. INTERNAL SECURITY

The cyber attacks in recent days have exposed the vulnerabilities in critical infrastructure in developed countries, so India has to develop reinforcements against such attacks. Examine

KEY POINTS

- Defending civilian targets and infrastructure against rising cyberattacks will stretch the capability of governments
- an audacious ransomware attack by Russia/East Europe-based cybercriminals, styled DarkSide, on Colonial Pipeline (which is the main supplier of oil to the U.S. East Coast
- These attacks were all primarily on civilian targets, though each one was of critical importance.
- the 2012 cyberattack on Aramco, employing the Shamoon virus, which wiped out the memories of 30,000 computers of the Saudi Aramco Oil Corporation, has ever since been one reason for the very frosty relations between different countries in West Asia and the Gulf region.
- in India, for example, has tripled — and mid-sized companies, in particular, today face a catastrophic situation, if attacked, and may even have to cease operations.
- A National and sectoral 24X7 mechanism has been envisaged to deal with cyber threats through National Critical Information Infrastructure Protection Centre (NCIIPC).
- Computer Emergency Response Team (CERT-In) has been designated to act as a nodal agency for coordination of crisis management efforts. CERT-In will also act as an umbrella organisation for coordination actions and operationalization of sectoral CERTs.
- India needs to have large scale digitization of public services
- Building Critical information infrastructure to protect the cyber security systems.

In the wake of new modes of terrorism, international cooperation can be a possible solution to handle them effectively. Explain

KEY POINTS

- The use of drones to attack an Indian Air Force base in Jammu brought a new mode of terrorism for the country.
- In 2018, Syrian rebels used homemade drones to attack Russian military bases in Syria.
- In 2019, Houthi rebels claimed responsibility for bombing Saudi oil installations using drones.
- New modes of sabotage and violence enabled by technology reduce costs and risk of identification for terrorists while increasing their efficacy.
- Simultaneously, security agencies would find conventional tools redundant in combating terrorism.



- The existing international framework for controlling the proliferation of technology that can be weaponised, such as the Wassenaar Arrangement and Missile Technology Control Regime, is also largely useless in the emerging scenario.
- States including India have sought to deal with terrorism with a combination of stringent laws, invasive surveillance.
- This approach has only had limited success in ensuring peace anywhere while the human and material costs have been high.
- The exponential proliferation of new technologies and Artificial Intelligence, vertically and horizontally, will make the task of combating terror even more challenging.
- . From turning passenger planes into missiles in 2001, terrorism has come a long way and now to drones.
- Enhanced international cooperation and consensus on the development and deployment of technologies are required to deal with the challenge.

13. S & T

The missions of NASA to venture into planet Venus is based on their potential for scientific value and the feasibility of their development plans. Examine

KEY POINTS

- NASA has selected two missions to the planet Venus, Earth's nearest neighbour. The missions called DAVINCI+ and VERITAS have been selected based on their potential for scientific value and the feasibility of their development plans.
- Venus is the second-brightest object in the sky after the moon, appears bright because of its thick cloud cover that reflects and scatters light, called as Earth's twin because of their similar sizes, the two planets have significant differences between them.
- Both missions are part of the space agency's Discovery Program, which began in 1992 to give scientists the chance to launch some missions that use fewer resources and have shorter developmental times.
- DAVINCI+ is short for 'Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging' and is the first US-led mission to the planet's atmosphere since 1978.
- VERITAS is short for 'Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy' and will map the planet's surface to determine its geologic history and understand the reasons why it developed so differently from Earth.
- This mission will also map the emissions from Venus's surface that may help in determining the type of rocks that exist on Venus. It will also determine if active volcanoes are releasing water vapour into the atmosphere.

As India prepares for the pandemic situation, increasing genomic sequencing and use of scientific evidence for decision making are essential. Explain

KEY POINTS

- If there is one tool in the COVID-19 pandemic response, which India has been slow in adoption and has used sub-optimally, it is genomic sequencing.
- An effective COVID-19 pandemic response requires, inter alia, keeping track of emerging variants and then conducting further studies.
- Unfortunately, there is not enough attention to scale up genomic sequencing, which as per the original plan was supposed to cover 5% of confirmed COVID-19 cases.
- The challenge of insufficient genomic sequencing is further compounded by the pace at which data is being shared, especially when the emergence of strains is so vital in tracking and responding to a pandemic.
- The Delta variant became the most circulating variant in Delhi and was found in nearly 60% of the samples analysed, is 50% more transmissible than the Alpha variant.
- India needs to scale up genomic sequencing, across all States. There should be sufficient and representative samples collected for genomic sequencing
- The Indian government needs to invest and support more scientific and operational research on vaccine effectiveness.
- The data should be analysed on a regular basis and should include various stratifiers such as age, gender.
- As Indian States plan to open up after COVID-19 restrictions, the settings with predominantly the Delta variant in circulation should aim for far stricter adherence to COVID appropriate behaviour, in public places.

Amidst the pandemic, India has to stay competitive enough in the space sector in order to provide efficient services to its customers. Analyse

KEY POINTS

- The Covid-19 pandemic has put India's space activities into suspension. To maximise the impact of reforms, the government must end hibernation of the space launch sector.
- China launched the first module of its space station in the low-Earth orbit, and also launched its first 6G satellite.
- India's global share in the total space launches continues to be low at 1.8%. With the new competition, the satellite customer base that India's commercially successful PSLV enjoyed for 20 years is shrinking considerably.
- Case in point: 2014 NASA-ISRO joint project—the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite—that is delayed by a year due to slow development of ISRO's second-largest launch vehicle, the GSLV-Mk-II.

To be competitive

- Private companies born during the pandemic must have uninhibited access to space testing infrastructure for quick vehicle development.

- ISRO must urgently acquire SSLV space-proven credentials and make GSLV MK-III fit for its human spaceflight mission, Gaganyaan.
- Testing and on-field evaluation of reusable space planes for orbital and sub-orbital flights needs to be accelerated.
- India now has more launch vehicles in testing and operational phases than ever before. This requires the Director General of Civil Aviation (DGCA) to expand its ambit into commercial space transportation.

The new discipline, synthetic biology can act as a foundation for modern industrial revolution and will lead to creation of industry 5.0. Justify

KEY POINTS

Synthetic biology

- A demand for low-calorie sugar led to the processed foods industry seeking synthetic biology.
- A scalable route to a superior sugar substitute normally found in minute quantities in stevia leaves.
- Changing consumer preferences and investments in zero-calorie alternatives made by synthetic biology have led to a 50% decline in global sugar prices in the last decade.
- A company has built a proprietary database of 75,000 bio-molecules derived from soil microbes alone. It calls this a “metagenomic database”
- Ability to read nature in a quick and affordable manner out in the field has been powered by low-cost DNA sequencing technology, thus forming the basis of modern industrial revolution.
- Here the requirement of labour is drastically minimized, but the technology is highly advanced.
- For example, a leading vegan hamburger company utilises *Pichia pastoris* to produce heme molecules that recreate the taste and aroma of animal blood without having to kill animals at all.
- The only way to improve people’s quality of life and reduce their impact on the environment is through biology, leading to the creation of industry 5.0.
- The world will witness a new paradigm in manufacturing, with biology, and a new paradigm with deep implications for the health of our planet and for all its residents.

How the feminist approach to technological aspect solve the social impacts of pandemic induced crisis situation in South Asian region? Elaborate

KEY POINTS

- According to Global System for Mobile Communications (GSMA) estimates, over 390 million women in low- and middle-income countries do not have Internet access.
- South Asia has more than half of these women with only 65% owning a mobile phone.
- In India, only 14.9% of women were reported to be using the Internet. This divide is deepened by earlier mandates to register online to get a vaccination appointment.



- While improving awareness of how to access vaccination and help are crucial to protecting women, the mindset around digital technology and device ownership must also change.
- As part of the Generation Equality Forum, the goal is to double the number of women and girls working in technology and innovation.
- By 2026, the aim is to reduce the gender digital divide and ensure universal digital literacy, while investing in feminist technology and innovation to support women's leadership as innovators.
- More girls need to choose STEM (science, technology, engineering, and mathematics) as their academic focus, enter digital technology careers, and aspire to be the next leaders in digital technology.
- According to GSMA, closing the gender gap in mobile Internet usage in low- and middle-income countries would increase GDP by U.S.\$700 billion over the next five years.

14. ENVIRONMENT

A global carbon incentive scheme can push every nation to mitigate the consequences of climate change. Analyse

- **KEY POINTS**
- The basic rationale is to create a UN administered Global Carbon Incentive Fund (GCIF) to which countries would contribute if their carbon emissions per capita are above the global average.
- The least costly way to reduce global emissions would be to give every country similar incentives.
- While India should not keep building more dirty coal plants as it grows, Europe should be closing down the plants it already has.
- Countries below the global per capita average would receive a commensurate payout (Uganda, for example, would receive around \$2.1 billion).
- The GCI also would address the fairness problem. Low emitters, which are often the poorest countries and the ones most vulnerable to climatic changes they did not cause, would receive a payment with which they could help their people adapt.
- GCI recognizes that what a country does domestically is its own business. It can easily be raised by common agreement.
- But a GCI is by far the best option available. As rich countries cast about for remedies to domestic inequality, they should spare a thought for inequality between countries, which the pandemic and the unequal vaccine roll-out will only worsen.



The National Biodiversity Mission recognizes need for human resources required to meet complex environmental challenges of the 21st century. Elaborate

KEY POINTS

- In consultation with the Ministry of Environment, Forest, and Climate Change and other Ministries approved an ambitious National Mission on Biodiversity and Human Well-Being (NMBHWB).
- A Bengaluru-based Biodiversity Collaborative is working with the National Biodiversity Authority to hold consultations and prepare road maps of the Mission.
- The Mission will strengthen the science of restoring, conserving, and sustainably utilising India's natural heritage, embed biodiversity as a key consideration in all developmental programmes.
- Mission will allow India to emerge as a leader in demonstrating linkage between conservation of natural assets and societal well-being.
- In response to these critical and interrelated issues, the Mission offers a holistic framework, integrated approaches, and widespread societal participation.
- Mitigation programmes will lessen the impacts of climate change and other natural disasters, such as pandemics and floods.
- The Mission will help India meet its commitments under the new framework for the Convention on Biological Diversity (CBD), and UN SDGs related to pressing social issues including poverty alleviation, justice and equity, and protection of life.
- This will require training professionals of the highest calibre in sustainability and biodiversity science, along with an investment in civil society outreach.

Why nations must use conference of parties 26 to address the enormous threat of climate change? Examine

KEY POINTS

- India has a strong record on tackling climate change, including impressive domestic targets to have 450GW of renewable energy by 2030, and establishing the International Solar Alliance and the Coalition for Disaster Resilient Infrastructure (CDRI).
- India played a critical role in delivering the landmark Paris Agreement and we are working just as closely with India in the run-up to COP26, the 26th UN Climate Change Conference of the Parties.
- The Climate Action Tracker estimates that countries' current emissions reduction targets have us on course for average temperature rises of 2.4°C.
- To limit warming to 1.5°C, we must halve global emissions by 2030. So this is the decisive decade.
- This is what makes this year's COP so critical, and as hosts of COP26, the U.K. is pressing for urgent action around four key goals.

- In the U.K. we have found that setting ambitious short-term targets backed up by a net zero target has given a clear signal that the future is low carbon.
- Developed countries need to deliver the \$100 billion they promised annually to support developing countries.
- The U.K. is pushing for all developed countries to increase their climate finance commitments ahead of COP26, to deliver the right flow of finance and technology to meet the needs of countries such as India in their transition.

It is critical to position natural gas as a transition fuel for reduction in Green House Gas emissions and enable the entry of hydrogen fuel in the country. Analyse

KEY POINTS

- Natural gas currently has a 6.6% share in India's energy mix and is targeted to increase to 15% by 2030. Natural gas is the cleanest fossil fuel, but only has a 40% smaller emission-footprint than coal.

Measures

- It is essential to deploy this technology for all new capacity additions. This will reduce the overall carbon intensity of the steel industry, and green hydrogen can eventually be introduced as it becomes cost-competitive with natural gas.
- India has 17,000 km of natural gas transmission pipelines, and there are plans to add another 15,000 km in the coming decade.
- This provides an opportunity to deploy hydrogen-ready pipelines and associated infrastructure. Pipelines typically have a lifetime of over 40-50 years, and the turnover is slow.

Hydrogen

- Green hydrogen is currently at least three and seven times as expensive as natural gas and coal, respectively, per unit of energy.
- Natural gas can also be utilised in new technologies that produce hydrogen and solid carbon (black). This eliminates carbon dioxide emissions and produces a useful by-product.
- Hydrogen so derived will be competitive with green hydrogen and can be utilised to build demand for green hydrogen of the future.
- If planned well, natural gas can play the role of a bridge fuel and not act as a barrier to the entry of green hydrogen.

The impending cooling demand transition in the country provides huge potential and so energy efficiency is crucial to adapt to climate change. Discuss

KEY POINTS

- More frequent and intense heat waves are expected with a rise in global temperatures due to climate change.

- India, with currently low penetration levels of air conditioners (ACs), will likely require substantial cooling services to keep citizens healthy and productive.
- The India Cooling Action Plan projects the number of room air conditioners to become about four times in the next decade, making India the world's largest energy user for cooling.
- The desired levels of cooling vary greatly even among relatively homogenous communities.
- It is interesting to note that the India Cooling Action Plan in its estimation of residential cooling demand, assumes that an average household uses an AC for eight hours a day.
- Large-scale adoption of efficient cooling appliances will be essential to providing the required thermal comfort in a low carbon manner.
- A third of the households did not know of the Star Labelling programme, which is a government programme mandatory for refrigerators and air conditioners.
- In India infrastructure, and behaviours of cooling technologies are yet to be made, there is a unique opportunity to lock-in energy efficient consumption patterns.

In spite of having broad legal framework on forest rights, the country needs a system to support them. Elaborate

KEY POINTS

- One of Asia's largest tropical grasslands, Banni is home to great biological diversity and is the lifeline of its pastoralist communities.
- However, climate change and the invasion by *Prosopis juliflora* a species that covers nearly 54 per cent of the grassland have severely impacted its unique ecology.
- Maldhari community in the region uproot *Prosopis* in the pre-monsoon period and when it rains, the native grass species' regenerate from their rootstock.
- Local communities applying their deep knowledge of the local ecology to become "decision-makers" in restoring their commons is indeed novel in India.
- Through the Forest Rights Act (FRA), 2006, adivasis and other traditional forest-dwelling communities, including pastoralists, are legally empowered to decide on the management and restoration of their community forest resources (CFR).
- Be it social forestry in the 1970s, tree growers' cooperative societies in the 1980s, Joint Forest Management in the 1990s or the National Afforestation Programme and Green India Mission, studies have found them to have limited restoration benefits.
- These initiatives have drawn criticism for paying little attention to the land and forest tenure of local communities, failing to incorporate traditional ecological knowledge.
- The recognition of these rights, however, has happened at an extremely slow pace.

Less than 5 per cent of the total potential area has been brought under Community forest rights.