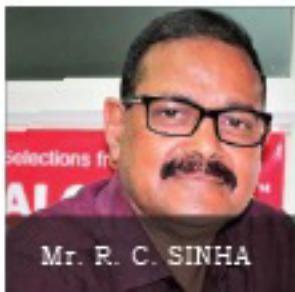




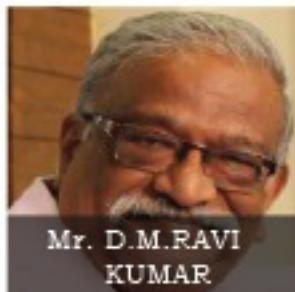
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OUR TEAM

GENERAL STUDIES



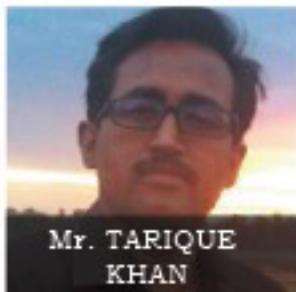
Mr. R. C. SINHA



Mr. D.M.RAVI KUMAR



Mr. SAROJ SAMAL



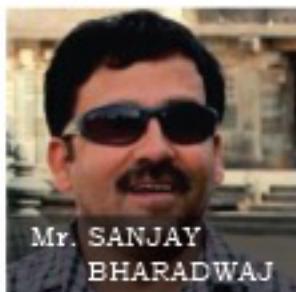
Mr. TARIQUE KHAN



Mr. PRIYESH SINGH SENGAR



Mr. SATYANARAYANA



Mr. SANJAY BHARADWAJ



Dr. ATUL TRIPATHI

Mr. KOUSHIK

Mr. PRANAY AGARWAL

Mr. CHETAN PRAKASH

Mr. NIHIL SAREEN

Mr. RAVI TEJA

Mr. UDAY SIMHA

Mr. SIVA KUMAR

Mr. VIJAY

OPTIONALS



SOCIOLOGY

Mr. SAROJ SAMAL

Public Administration



Mr. R.C. SINHA



Mr. D.M.RAVI KUMAR



MATHEMATICS

Mr. VINNAKOTA SRIKANTH



GEOGRAPHY

Mr. PRIYESH SINGH SENGAR

OTHER OPTIONALS

ANTHROPOLOGY

POLITICAL SCIENCE

TELUGU LITERATURE

HISTORY

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Polity and Governance

1. Fool-proof Nature of EVMs

Context:

An event claiming to demonstrate EVMs used by ECI can be tampered with, has been organized in London.

Electronic Voter Machines (EVMs):

EVMs used in elections are manufactured in Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL) under very strict supervisory and security conditions and there are rigorous Standard Operating Procedures meticulously observed at all stages under the supervision of a Committee of eminent technical experts constituted way back in 2010.

ECI reaffirms Non-Tamper ability of EVMs

- The ECI-EVMs are stand-alone machines designed to connect only amongst ECI-EVM units (Ballot Unit, Control Unit and VVPAT) through cables that remain in full public view.
- There is no mechanism in ECI-EVMs to communicate with any device through wireless communication on any Radio Frequency.
- All versions of ECI-EVMs are regularly and rigorously tested against low to high wireless frequencies. These tests include and go beyond the standard tests specified for electronic equipments II.
- ECI-EVMs are regularly tested for proper functioning under all kind of operating conditions. III. ECI-EVMs are also regularly tested for code authentication and verification.

2. Bhopal gas tragedy

Context: Supreme Court to hear petition on Bhopal gas leak payout. The Supreme Court decided to examine in April a curative petition by the government for more compensation to the victims of the Bhopal gas tragedy, over and above the \$470 million paid by Union Carbide.

About Bhopal gas tragedy:

- The Bhopal gas tragedy was a gas leak incident on the night of 2–3 December 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, Madhya Pradesh, India.
- It is considered to be the world's worst industrial disaster. Over 500,000 people were exposed to methyl isocyanate (MIC) gas
- The highly toxic substance made its way into and around the small towns located near the plant.
- Estimates vary on the death toll. The official immediate death toll was 2,259. The government of Madhya Pradesh confirmed a total of 3,787 deaths related to the gas release.

- A government affidavit in 2006 stated that the leak caused 558,125 injuries, including 38,478 temporary partial injuries and approximately 3,900 severely and permanently disabling injuries.
- Others estimate that 8,000 died within two weeks, and another 8,000 or more have since died from gas-related diseases.
- The cause of the disaster remains under debate. The Indian government and local activists argue that slack management and deferred maintenance created a situation where routine pipe maintenance caused a backflow of water into a MIC tank, triggering the disaster.
- Union Carbide Corporation (UCC) argues water entered the tank through an act of sabotage.

3. MGNREGA

Context:

According to the Centre, the states may have to fund MGNREGA wages. The financial statement of MGNREGA scheme shows that as on January 30, 19 States and Union Territories had liabilities.

- Nationally, the scheme has a negative net balance of ¹ 4,101 crore. The Rural Development Ministry received a supplementary additional allocation of ¹ 6,084 crore. However, this is not adequate as after paying off liabilities, states would be left with a small amount. The fund crunch has already resulted in extensive wage payment delays.
- MGNREGA data shows that 81% of Fund Transfer Orders (FTOs) generated in January 2019 and 43% of FTOs from December 2018 still remain unprocessed by the Centre. This might necessitate states to fund MGNREGA themselves. West Bengal, Madhya Pradesh and Karnataka are among the States that are likely to use their own funds to pay workers.

About MNREGA:

- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), also known as Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) is Indian legislation enacted on August 25, 2005.
- The MGNREGA provides a legal

At a high

The Union Rural Development Ministry says the allocation for the rural job scheme is the highest ever during 2018-19, but activists cite pending dues and liabilities to contest the claim



99% of funds allocated were exhausted three months ahead of the end of the fiscal

₹6,084 crore is the additional allocation

₹61,084 crore is the total allocation

Fine print

- 15 States have a total negative net balance of ₹4,064 crore, which includes payments due to workers

- ₹9,040 crore is the pending liability from previous years

guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage.

- The Ministry of Rural Development (MRD), Govt of India is monitoring the entire implementation of this scheme in association with state governments.
- This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or un-skilled work to people living below poverty line in rural India. It attempts to bridge the gap between the rich and poor in the country.
- Roughly one-third of the stipulated work force must be women. ? Adult members of rural households submit their name, age and address with photo to the Gram Panchayat.
- The Gram Panchayat registers households after making enquiry and issues a job card. The job card contains the details of adult member enrolled and his /her photo. Registered person can submit an application for work in writing (for at least fourteen days of continuous work) either to Panchayat or to Programme Officer.
- The Panchayat/Programme officer will accept the valid application and issue dated receipt of application, letter providing work will be sent to the applicant and also displayed at Panchayat office.
- The employment will be provided within a radius of 5 km: if it is above 5 km extra wage will be paid.

4. 15 th Pravasi Bharatiya Divas

Context:

Prime Minister Narendra Modi and his Mauritian counterpart Pravind Jugnauth inaugurated the 15th edition of Pravasi Bharatiya Diwas at Deendayal Hastkala Sankul in Varanasi.

About Pravasi Bharatiya Divas

- Pravasi Bharatiya Divas (PBD) is celebrated on 9th January every year to mark the contribution of Overseas Indian community in the development of India. January 9 was chosen as the day to celebrate this occasion since it was on this day in 1915 that Mahatma Gandhi, the greatest Pravasi, returned to India from South Africa, led India's freedom struggle and changed the lives of Indians forever.
- PBD conventions are being held every year since 2003. These conventions provide a platform to the overseas Indian community to engage with the government and people of the land of their ancestors for mutually beneficial activities. These conventions are also very useful in networking among the overseas Indian community residing in various parts of the world and enable them to share their experiences in various fields.

- During the event, individuals of exceptional merit are honoured with the prestigious Pravasi Bharatiya Samman Award to appreciate their role in India's growth. The event also provides a forum for discussing key issues concerning the Indian Diaspora.

Highlights of 15 th PBD

- The theme of PBD 2019 is “Role of Indian Diaspora in building a New India.”
- In reverence to the sentiments of the larger diaspora community to participate in Kumbh Mela and Republic Day celebrations, the 15th Pravasi Bharatiya Divas Convention was organized from 21 to 23 January 2019 instead of 9th January.
- The Convention will be held at Varanasi, Uttar Pradesh. After the Convention, participants would be given the opportunity to visit Prayagraj for Kumbh Mela on 24th January, 2019 and witness the Republic Day Parade at New Delhi on 26th January 2019.
- Prime Minister Shri Narendra Modi, Mr. Pravind Kumar Jugnauth, Prime Minister of Mauritius, were the Chief Guest of the Convention. Mr. Himanshu Gulati, Member of Parliament of Norway, was the Special Guest and Mr. Kanwaljit Singh Bakshi, Member of Parliament of New Zealand were the Guest of Honor at the Youth Pravasi Bharatiya Divas on 21st January, 2019.

5. Rural housing

Context:

The Government's flagship program Housing for All in rural areas has only achieved 66% of target. The government had aimed to complete 10 million houses in the first phase under the Pradhan Mantri Awas Yojana-Gramin (PMAY-G), the rural component of the scheme, by the end of the current fiscal. So far, about 6.7 million houses have been completed and 1.7 million are in the final stages of construction.

About Pradhan Mantri Awas Yojana (Grameen):

- Housing is one of the basic requirements for human survival. For a normal citizen owning a house provides significant economic and social security and status in society. For a shelter less person, a house brings about a profound social change in his existence, endowing him with an identity, thus integrating him with his immediate social milieu.
- In pursuance to the goal - Housing for all by 2022, the rural housing scheme Indira Awas Yojana has been revamped to Pradhan Mantri Awaas Yojana – Gramin and approved during March 2016.
- Under the scheme, financial assistance is provided for construction of pucca house to all houseless and households living in dilapidated houses. It is proposed that one crore households would be provided assistance for construction of pucca house under the project during

the period from 2016-17 to 2018-19.

- The scheme would be implemented in rural areas throughout India except Delhi and Chandigarh. The cost of houses would be shared between Centre and States.

Funding Pattern:

- Under PMAY, the cost of unit assistance is to be shared between Central and State Governments in the ratio 60:40 in plain areas and 90:10 for North Eastern and hilly states.
- The unit assistance given to beneficiaries under the programme is Rs 1,20,000 in plain areas and to Rs 1,30,000 in hilly states/difficult areas /Integrated Action Plan (IAP) for Selected Tribal and Backward Districts. Presently the NE States, States of HP, J&K and Uttarakhand and all 82 LWE districts are identified as difficult and hilly areas. The unit size is 25 sq.m including a dedicated area for hygienic cooking.
- The beneficiary is entitled to 90 days of unskilled labour from MGNREGA. The beneficiary would be facilitated to avail loan of up to Rs.70,000/- for construction of the house which is optional.
- Funds will be transferred electronically directly to the account of the beneficiary.

Why problem in achieving the target?

Due to unavailability of land, the states are unable to allocate land to the beneficiaries for house construction. However, the Centre had written to the states about a large number of landless poor not being sanctioned houses because of land unavailability, and asked States to speed up the process of land allocation.

International Relations

6. A new Arms Race

Context:

The U.S.'s pullout from Intermediate-Range Nuclear treaty with Russia could launch new arms race between the two countries.

INF treaty

- The INF Treaty was signed following the Euro missile crisis in the late 1970s and 1980s, when the Soviet Union's mobilizing of cruise missiles that could hit most of Europe prompted the US to deploy to the region ballistic missiles that could reach Moscow in 10 minutes.
- The pact banned all ground-based missiles with ranges between 500km and 5,500km, ridding Europe of an entire category of destabilizing weapons - nearly 3,000 ground-launched intermediate ballistic and cruise missiles were destroyed.
- The treaty does not cover air- or sea-launched weapons, and did not include other powers such as China, North Korea, Iran and Israel, allowing these countries to grow their stockpile of weapons.

What's the issue?

The United States first alleged in its July 2014 Compliance Report that Russia is in violation of its INF Treaty obligations "not to possess, produce, or flight-test" a ground-launched cruise missile having a range of 500 to 5,500 kilometers or "to possess or produce launchers of such missiles."



Subsequent State Department assessments in 2015, 2016, and 2017 repeated these allegations. Russia denies that it is in violation of the agreement. On December 8, 2017, the Trump administration released a strategy to counter alleged Russian violations of the Treaty.

Way Forward:

- With the INF Treaty all but gone, all eyes are on the New Strategic Arms Reduction Treaty (New START), a 2010 pact that limits the US and Russia to no more than 700 deployed strategic missiles and bombers and no more than 1,550 deployed strategic warheads.
- The treaty expires in two years, but can be extended by up to five years.
- “If New START lapses in 2021, no treaties will constrain US and Russian nuclear forces, a break from some 50 years of nuclear arms control between Washington and Moscow”.

7. Fraudulent Visa

Context:

The recent arrest of 129 Indians on the charge of willfully violating immigration laws to stay and work in the United States sends a stark message to youth looking for better prospects abroad.

What's the issue?

In the sting operation carried out by the U.S. Department of Homeland Security, which threatens to encompass many more Indians in the ‘University of Farmington’ case, the contentious issue is whether they fell victim to unscrupulous recruiters who offered to secure an I-20 student document that allowed them to undertake paid work using the provision for Curricular Practical Training, or knowingly engaged in fraud.

- Going by the indictment of eight recruiters of Indian origin, they knew they were violating U.S. immigration law when they enrolled students using fraudulent and unlawful means, and their profits included negotiated referral fees paid into their accounts by undercover agents.
- The prosecution has alleged that each student who enrolled in the ‘university’ was aware that there would be no classes, credit scores or academic requirements, and the intention was merely to “pay to stay” and gain access to employment. These statements are, of course, subject to scrutiny during the trial of the alleged recruiters.
- The University of Farmington case in Michigan is not the first instance of Indian students falling foul of U.S. immigration laws, although it stands apart as a racket exposed by a sting operation.

Way forward:

The Ministry of External Affairs has made the correct distinction between students who may have been duped and the recruiters. Students who are eligible to pursue studies at an authorized university in the U.S. should,

therefore, get a further opportunity and not be subjected to summary deportation or humiliation. It must also not prejudice the prospects of such students who may apply in future for legal entry.

8. Venezuelan Crisis:

Context:

Due to Severe shortages of medicine, medical supplies, and food make it extremely difficult for many families to have access to the most basic health care and to feed their children.

Government crackdown has led to thousands of arbitrary arrests, hundreds of prosecutions of civilians by military courts, and torture and other abuses against detainees. Arbitrary arrests and abuses by security forces, including by intelligence services, continue. Extremely high rates of violent crime and hyperinflation are also key factors in many people's decision to leave the country.

How South America is affected?

- Venezuela has seen a mass exodus of citizens fleeing poverty, hyperinflation, failing public services and shortages of basic necessities.
- According to the United Nations, over 3 million Venezuelans have been displaced in the region since 2015 as the fallout from the country's economic crisis took hold.
- Around between 10 and 12 per cent of Venezuelans currently live abroad in more than 90 countries due to displacement and Migration by force.
- Venezuela's crisis has not been contained within its borders. They are arriving in countries hungry and sick.
- They are commonly suffering from severe malnutrition, diarrhoea, no vaccinations, and lack of prenatal care, and their arrival is spreading eradicated diseases to neighbouring countries.
- According to the Ministry of Health of Colombia, it has received, cases of malaria, malnutrition, 49 deaths to HIV and 26 maternal mortalities were reported in 2017 alone.

In the state of Roraima, Brazil in 2017, there were 2,576 malaria cases imported from Venezuela, representing 55% of all imported cases, according to

In Ecuador, measles cases were confirmed, 75% of which were among Venezuelan citizens. The Ministry of Health also confirmed 12 imported malaria cases in 2018, nine of them from Venezuela. Women fleeing Venezuela's desperate infant mortality situation are crossing into countries to give birth.

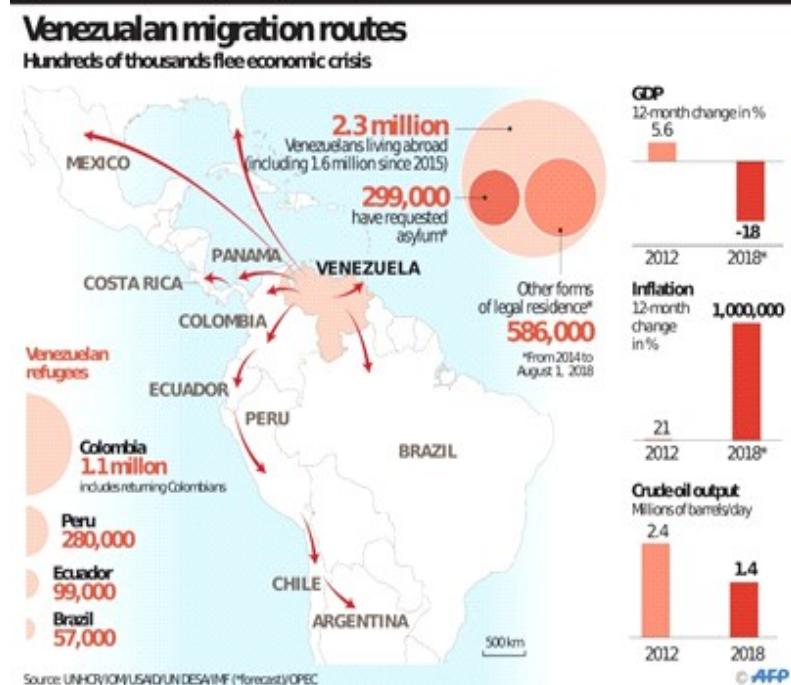
Most of these babies are stateless, since in Colombian legislation, it only offers citizenship to children who have at least one Colombian parent.

An "invisible generation" of Venezuelans is being born, who do not legally exist in either country. Venezuela has caused the region to undergo a health regression. Hospitals and clinics in receiving countries have already collapsed, creating a huge strain on state and local healthcare systems. The biggest obstacle is not having enough human capital, supplies or financial resources to keep operations going.

Conclusion:

Venezuelans have been doing their homework and laying the organizational groundwork for change. Political parties, trade unions, universities, NGOs, and the Catholic Church have come together in an initiative called Venezuela Libre.

They have been working on a detailed economic plan, amply discussed with the international community, to overcome the crisis and restore growth. This is an eye opener for the international community to identify flaws and providing remarkable solutions to the present problem.



9. A new year in diplomacy

Context:

India is going to see an eventful diplomatic tie in 2019, with various changes in ties around the world. With regional groupings gaining more momentum than the international ones, the starting of another cold war is on lines. With problems of large extent within its boundaries also, India is in a critical situation to overcome both the internal and external problems that surrounds it.

Changing ties

The nations around the world are trying to spread their influence across the boundaries, which might lead to instability. Russia's capture of three Ukrainian naval ships and over 20 crew members in the disputed Azov Sea has refocused international attention on the conflict on Europe's eastern corridors and Azov sea. Similarly, China using its Belt and road initiative increased its influence throughout various parts of Asia. Increasing tensions of trade war between China and USA has invariably affected the economies of other countries.

Belt and Road Initiative (BRI)

- BRI is an ambitious China's ambitious development strategy and

framework that aims to boost its connectivity and trade that will connect Asia, Africa, Middle East and Europe.

- It was proposed by Chinese President Xi Jinping in 2013.
- It comprises two components of Silk Road Economic Belt & Maritime Silk Road. The initiative is part of China's revived 21st century Silk Road diplomacy that seeks to push it to take a bigger role in global affairs as a major global power. It is basically investment and trade promotion scheme aiming to deepen economic connections between China and rest of the world.

Indian Scenario

- Russia which is considered as all weather friend to India since independence, has come into picture with Russia's increase in strategic partnership with China.
- Japan has also increased its ties with China, which could affect India in a longer run.
- In 2018, China had initiated certain moves to create a China-Myanmar Economic Corridor on the lines of the China-Pakistan Economic Corridor (CPEC).
- The Chinese Navy is also poised to challenge India's position in the Indian Ocean. Chinese submarines already outnumber India's here.
- China is also preparing to put pressure on India by seeking control of the Kyaukpyu Port on the Arakan Coast in Myanmar and planning the Kra Canal that connects the Andaman Sea with the Gulf of Thailand.
- With informal summits like Wuhan, India might indulge in more positive ties with China in 2019.
- Pakistan facilitated China's involvement in Afghanistan, in order to create stability in the region.
- The China Pakistan Economic Corridor is growing at rapid phase.
- India will also need to use all its resources to assist Bangladesh to limit the influence of radical Islamist groups there.

Internal Issues

- The major part of internal security problems arises from the regions of Kashmir and northeast.
- While, Pakistan sponsored terror groups being a major reason for disturbances in Kashmir, government's new citizenship amendment bill has been the source of violence in north east.
- Apart from security issues, other major problems that are to be solved in 2019, are said to be farmer distress, attack on marginalized section of people, cow vigilantism, mob lynching etc.

Way forward

Considering the difficult external and internal situation, the path to peace may be hard. On the external affairs part, India must increase its positive diplomatic ties with various countries with more engaging formal and informal summits. In terms of internal affairs, the problems must be addressed by the government by carefully analyzing the historical background and future implications of the issue.

Economy

10. Unemployment in India

Context:

India's unemployment rate hit a 45-year-high of 6.1 per cent in 2017-18, as per the **unreleased** National Sample Survey Office's (NSSO's) periodic labour force survey (PLFS) of the Ministry of Statistics and Programme Implementation.

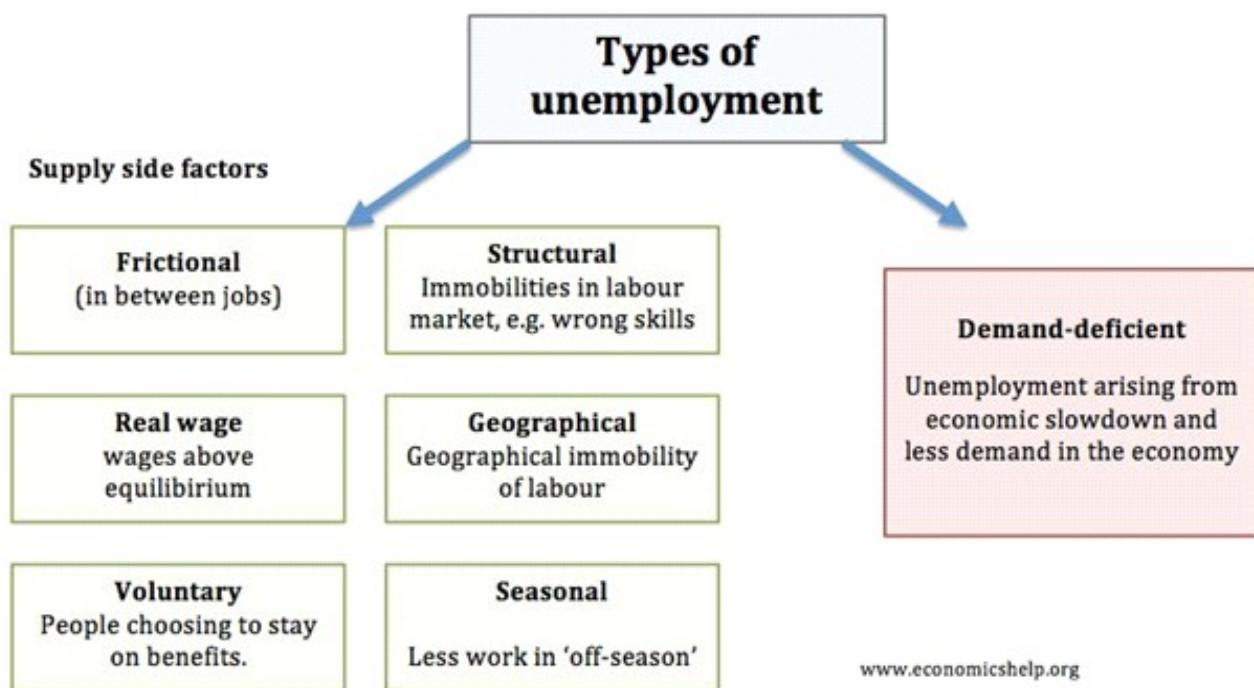
Unemployment:

Unemployment is a phenomenon that occurs when a person who is capable of working and is actively searching for the work is unable to find work.

People who are either unfit for work due to physical reason or do not want to work are excluded from the category of unemployed.

The most frequent measure of unemployment is unemployment rate. The unemployment rate is defined as a number of unemployed people divided by the number of people in the labour force.

Labour Force: Persons who are either working (or employed) or seeking or available for work (or unemployed) during the reference period together constitute the labour force.



Key findings of the Draft report

The report showed that the unemployment rate among the youth was at a higher level compared to previous years and "much higher compared to that in the overall population".

- The rate of unemployment among men in rural areas between the ages of 15 and 29 years jumped to 17.4 percent in 2017-18 compared to 5 percent in 2011-12.

- The unemployment rate among women in rural areas stood at 13.6 percent in 2017-18 compared to 4.8 percent in 2011-12, according to the survey.
- Unemployment among youth in urban areas was higher than in rural areas – 18.7 percent for men and 27.2 percent for women in 2017-18.
- More among the educated were jobless in 2017-18 than they were in 2004-05. For educated women in rural areas, unemployment was at 17.3 percent in 2017-18 compared to 9.7 percent-15.2 percent during 2004-05 to 2011-12.
- For educated men in rural areas, the unemployment rose to 10.5 percent in 2017-18 compared to 3.5 percent to 4.4 percent during 2004-05 to 2011-12.
- The labour force participation rate, which is the proportion of population working or seeking jobs, declined from 39.5 percent in 2011-12 to 36.9 percent in 2017-18.
- The labour force participation has been declining since 2004-05. The dip was at a higher pace in 2017-18 compared to 2011-12, but at a lower speed than what was witnessed in 2009-10.

The economic and social consequences of unemployment are :-

- Non utilization of manpower; human resources are not fully utilized. It is sheer wastage for the society.
- Loss of output in the economy because unemployed persons only live as consumer not as producers.
- Thus living only as consumer will add up the consumption not the production. They don't earn nor do they save for investment; thus capital formation is low.
- Due to disguised unemployment there is a low level of productivity which implies lesser surplus from an output for future generation.
- Thus these consequences leads to not only low level of present output but also the low level of future output because of lesser surplus for future investment.
- Unemployment leads to low quality of life which leads to the state of perpetual sufferings.
- Higher the degree of unemployment; higher will be the inequality in the distribution of income and wealth.
- Unemployment divides the Soviet into have or have not. Accordingly class conflict that compounds the problem of social unrest.
- Unemployment leads to the vicious circle in society by causing problems like illiteracy; poverty; etc.

Thus social consequences of unemployment is that it is a social menace as it denies social justice and enhances social unrest by increasing the disparity between have and haven't.

11. Goods and Services Tax Appellate Tribunal (GSTAT)

Context:

The Union Cabinet, chaired by the Prime Minister, has approved the creation of National Bench of the Goods and Services Tax Appellate Tribunal (GSTAT).

About:

- The National Bench of the Appellate Tribunal shall be situated at New Delhi. GSTAT shall be presided over by its President and shall consist of one Technical Member (Centre) and one Technical Member (State).
- Goods and Services Tax Appellate Tribunal is the forum of second appeal in GST laws and the first common forum of dispute resolution between Centre and States.
- The appeals against the orders in first appeals issued by the Appellate Authorities under the Central and State GST Acts lie before the GST Appellate Tribunal, which is common under the Central as well as State GST Acts.
- Being a common forum, GST Appellate Tribunal will ensure that there is uniformity in redressal of disputes arising under GST, and therefore, in implementation of GST across the country.
- Chapter XVIII of the CGST Act provides for the Appeal and Review Mechanism for dispute resolution under the GST Regime.
- Section 109 of this Chapter under CGST Act empowers the Central Government to constitute, on the recommendation of Council, by notification, with effect from such date as may be specified therein, an Appellate Tribunal known as the Goods and Services Tax Appellate Tribunal.
- Tribunal for hearing appeals against the orders passed by the Appellate Authority or the Revisional Authority.

GST and its associates:

1) Goods and Services Tax (GST)

It is an indirect tax (or consumption tax) levied in India on the supply of goods and services. GST is levied at every step in the production process, but is meant to be refunded to all parties in the various stages of production other than the final consumer. Goods and services are divided into five tax slabs for collection of tax - 0%, 5%, 12%, 18% and 28%. However, Petroleum products, alcoholic drinks, electricity, are not taxed under GST and instead are taxed separately by the individual state governments, as per the previous tax regime.

The tax came into effect from July 1, 2017 through the implementation of One Hundred and First Amendment of the Constitution of India. The tax replaced existing multiple cascading taxes levied by the central and state governments.

2) GST Council

GST Council is the governing body of GST having 33 members. GST Council is an apex member committee to modify, reconcile or to procure any law or act or regulation based on the context of goods and services tax in India. The council is headed by the union finance minister assisted with the finance minister of all the states of India. The GST council is responsible for any revision or enactment of rule or any rate changes of the goods and services in India.

3) Goods and Services Tax Network (GSTN)

The GSTN software is developed by Infosys Technologies and the Information Technology network that provides the computing resources is maintained by the NIC. "Goods and Services Tax" Network (GSTN) is a nonprofit organization formed for creating a sophisticated network, accessible to stakeholders, government and taxpayers to access information from a single source (portal).

12. Interim Budget 2019

Context:

Union Finance Minister Piyush Goyal presented an Interim Budget for 2019 in Parliament.

- An Interim Budget usually doesn't list out new schemes or doesn't unveil any policy measures. The government will present the vote on account for the next four-to-five months. A full-fledged Budget will be presented after the House reassembles after the general election.

Vote-on-Account

- An outgoing government presents only an interim Budget or seeks a vote on account. It leaves it to the next government to present the full Budget.
- The constitution says that no money can be withdrawn by the government from the Consolidated Fund of India except under appropriation made by law. For that an appropriation bill is passed during the Budget process.
- However, the appropriation bill may take time to pass through the Parliament and become a law. Meanwhile, the government would need permission to spend even a single penny from April 1 when the new financial year starts.
- Vote on account is the permission to withdraw money from the Consolidated Fund of India in that period, usually two months. Vote on account is a formality and requires no debate
- When elections are scheduled a few months into the new financial year, the government seeks vote on account for four months. Essentially, vote on account is the interim permission of the parliament to the government to spend money.

So vote on account is just an interim permission to spend money as against a full Budget which is an elaborate financial statement of expenditure and receipts including changes in taxes and government policies.

Highlights from Mr. Goyal's budget speech:

- No income tax for earnings up to ₹ 5 lakh. Individuals with gross income of up to ₹ 6.5 lakh need not pay any tax if they make investments in provident funds and prescribed equities. Standard tax deduction for salaried persons raised from ₹ 40,000 to ₹ 50,000.
- TDS threshold on interest on bank and post office deposits raised from ₹ 10,000 to ₹ 40,000. TDS threshold on rental income increased from ₹ 1.8 lakh to ₹ 2.4 lakh.
- I-T processing of returns to be done in 24 hours. Within the next 2 years, all verification of tax returns to be done electronically without any interface with the taxpayer.
- Package of ₹ 6000 per annum for farmers with less than 2 hectares of land. Scheme to be called Pradhan Mantri Kisan Samman Nidhi.
- Vande Bharat Express, an indigenously developed semi high-speed train, to be launched.
- One lakh digital villages planned in the next five years.
- Fund allocation for the Northeast region increased to ₹ 58,166 crore, a 21% rise over last year for infrastructure development.
- Anti-camcord regulations to be introduced in the Indian Cinematograph Act to prevent piracy and contact theft of Bollywood films. Single window clearance for Indian filmmakers.
- 25 per cent of sourcing for government projects will be from the MSMEs, of which three per cent will be from women entrepreneurs.
- National Artificial Intelligence portal to be developed soon.
- ESI cover limit increased to ₹ 21,000. Minimum pension also increased to ₹ 1000.
- Mega pension scheme for workers in the organised sector with an income of less than ₹ 15,000. They will be able to earn ₹ 3000 after the age of 60. The scheme will be called Pradhan Mantri Shramyogi Maan Dhan Yojana.
- 2% interest subvention for farmers pursuing animal husbandry.
- All farmers affected by severe natural calamities to get 2% interest subvention and additional 3% interest subvention upon timely repayment.
- Decision taken to increase MSP (minimum support price) by 1.5 times the production cost for all 22 crops.
- The 22nd AIIMS to come up in Haryana.

13. RBI lifts PCA

Context:

The RBI has decided to allow three public sector banks — Bank of India, Bank of Maharashtra and Oriental Bank of Commerce — to exit the PCA framework following capital infusion by the government and a decline in net NPA.

Prompt Corrective Action (PCA)

- The PCA framework specifies the trigger points or the level in which the RBI will intervene with corrective action if a commercial bank's financial condition worsens below a mark. It is to ensure that banks don't go bust.
- The parameters that invite corrective action from the central bank are:
 - Capital to Risk weighted Asset Ratio (CRAR)
 - Net Non-Performing Assets (NPA)
 - Return on Assets (RoA).
- RBI has placed 11 state-run banks under prompt corrective action.

What will happen when a bank brought under PCA?

- When these parameters reach the set trigger points for a bank, the RBI will initiate certain structured and discretionary actions for the bank including
 - Restriction on dividend distribution/remittance of profits;
- Requirement on promoters/owners/parents to bring in more capital;
 - Restrictions on branch expansion;
- Higher provisioning requirement; and,
- Restrictions on management compensation. Applicability
- The PCA framework is applicable only to commercial banks and not extended to cooperative banks, non-banking financial companies (NBFCs) and FMs.

14. Innovations in financial sector: Adding more meaning to money

Introduction:

Success or failure of an innovation depends upon the use of technology and this can be said more specifically in the context of innovations in the financial sector in India. Starting from Pradhan mantri Jan Dhan Yojana to Pradhan mantri MUDRA Yojana all are being implemented with the help of information technology making them emphatic for the Government and the masses thereby complementing each other.

Pradhan Mantri Jan Dhan Yojana (PMJDY)

- It is a financial inclusion program of Government of India that aims to expand and make affordable access to financial services such as bank accounts, remittances, credit, insurance and pensions.

- Swabhimaan, a financial inclusion campaign which aims to bring banking services to large rural areas made it more practical. The scheme also prescribes plastic currency in the form of RuPay card for all such accounts.
- So far the Government has managed to save over Rs 90000 crore through Direct Benefit Transfer (DBT) in transferring subsidies directly to the people through their bank accounts. Another key feature of PMJDY is the ease of opening bank accounts so that persons who do not have any of the officially ‘valid documents’ can open ‘Small accounts’ with banks.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

- PMJJBY is a government backed insurance scheme that offers life cover for death of the insured. The scheme will be offered through LIC and other Life Insurance companies and banks that are willing to offer the scheme on similar terms.
- Indian residents between the age of 18 and 50 years with a bank account are eligible for the scheme. In case the insured owns multiple savings bank accounts with different banks, they can join the scheme through a single savings bank account of their choice.

Pradhan Mantri Suraksha Bima Yojana (PMSBY)

- PMSBY is a government backed scheme. It is an Accident Insurance Scheme that offers accidental death and disability cover in case of death or disability due to an accident.
- The scheme is offered through public sector insurance companies and general insurance companies.
 - o The scheme is available for individuals between the age of 18 and 70 years with bank accounts and the premium for the scheme will be deducted from the savings account of the insured.

Pension scheme

- Atal Pension Yojana is a pension scheme aimed at the unorganized sector. This scheme replaced the previous Swavalamban Yojana which wasn't accepted well by the people. Private sector employees working with such an organization that does not provide them pension benefit can apply for the scheme.
- There is an option of getting a fixed pension of Rs 1000, Rs 2000, Rs 3000, Rs 4000, or Rs 5000 on attaining an age of 60 which will be determined based on the individual's age and the contribution amount. As per the investment pattern the collected amount under the scheme is to be managed by the Pension Funds Regulatory Authority of India (“PFRDA”).

MUDRA

MUDRA is a refinance for lending to micro businesses/units under the aegis of the Pradhan Mantri MUDRA Yojana. The products would be covered

under three categories that are as follows:

1. Shishu : covering loans up to Rs. 50,000/-
2. Kishor : covering loans above Rs. 50,000/- and up to Rs. 5 Lakh
3. Tarun : covering loans above Rs. 5 Lakh and up to Rs. 10 Lakh

It is to be noted that at least 60% of loans shall be disbursed under Shishu category and remaining for Kishor and Tarun categories. All commercial banks (Private or Public), RRB, Cooperative Bank or other Micro Finance Institutions are eligible for refinance under PM Mudra Yojana.

Stand up India

- This scheme aims at promoting entrepreneurship among women and scheduled castes and tribes. The scheme is anchored by Department of Financial Services (DFS), Ministry of Finance, Government of India.
- It facilitates bank loans between Rs 10 lakh and Rs 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a Greenfield enterprise (A project is one which is not constrained by prior work.e.g of greenfield projects are new factories, or airports which are built from scratch).
- This enterprise may be in manufacturing, services or the trading sector. In case of nonindividual enterprises at least 51% of the shareholding and controlling stake should be held by either an SC/ST or woman entrepreneur

Conclusion

These financial innovations have made life easier for a larger section of people and the best thing is that the changes are being incorporated based on field experience making these schemes more effective.

Geography and Environment

15. Emission levels in Indian cities

Context:

According to a recent study, the emission levels in the Indian cities are rising faster than China.

Is it because of Urbanization?

Urbanization is accelerating greenhouse gas emissions from vehicles in India at a faster than in China.

On an average, an Indian emitted about 20 kg per capita while commuting for work, with the highest (140 kg CO₂) in Gurugram district (Haryana) and the lowest (1.8 kg CO₂) in Shrawasti district (Uttar Pradesh), says a study that analyzed the link between population density and emissions from transport, across India's districts.

The experience in most developed countries was that urbanization led to a reduction in emissions more urbanization meant shorter distances between the workplace and home and thereby, a preference for public transport. However this didn't effectively apply to developing countries.

Highlights of the study

- In China a 1% increase in urbanization was linked with a 0.12% increase in CO₂ emissions whereas, in India, it translated into 0.24% increase in emissions.
- India's CO₂ emission grew by an estimated 4.6% in 2017 and its per capita emission was about 1.8 tonnes. In spite of being the 4th largest emitter, India's per capita emissions are much lower than the world average of 4.2 tonnes. But those emissions have been growing steadily, with an average growth rate over the past decade of 6
- Fuel price hikes aren't always a solution to curb emissions.

Cause for concern

Highlights of the study to be published in the journal Environmental Research Letters

- Delhi NCR has the highest commuting-emissions per capita
- On average, a 10% increase in population densification reduces commuting-emissions by 1.1%. Some districts defy this trend

- 16 districts in India emit 93 kg of CO₂ per capita; the average population density here is 6,543 person/sq. km

- India's mean annual commuting emissions (to home/from work) is 20 kg CO₂ per capita, with the highest (140 kg CO₂) in Gurgaon district (Haryana) and the lowest (1.8 kg CO₂) in Shrawasti district, Uttar Pradesh



- With a ¹ 1 increase in diesel price, commuting emissions decreased by 11% in some districts whereas it only fell by about 3% in low-income districts. “Given these districts have least commuting emissions and low socio-economic status our study finds limited support for increasing gasoline prices as a strategy to mitigate commuting
- The mean commuting distance (among commuters) is 5.9 km, with the lowest 1.3 km in Longleng district (Nagaland) and the highest 14 km in Dharmapuri district (Tamil Nadu).
- Delhi had the highest commuting emissions per capita , a factor that also contributed to its high level of pollution and the national capital region had 2.5 times higher commuting emissions than Mumbai, Kolkata, Chennai, Bangalore, and Hyderabad.
- “Delhi’s higher socio-economic status and heavy reliance on private travel modes led to higher commuting emissions than in other megacities,” the report noted.
- Because there were several instances of districts with similar population density but varying per capita emissions, a “simple-minded densification” was an inappropriate policy for reducing commuters’ GHG emissions and India would do well to focus on electric vehicles and efficient public transit system.

Central Pollution Control Board (CPCB)

The **Central Pollution Control Board (CPCB)**, statutory organization, was constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974. Further, CPCB was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. It serves as a field formation and also provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986.

Principal Functions of the CPCB, as spelt out in the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981,

- To promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution, and
- To improve the quality of air and to prevent, control or abate air pollution in the country.

National Air Quality Index

- Air Quality Index is a tool for effective communication of air quality status to people in terms, which are easy to understand. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.
- There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. Each of these categories is decided

AQI Category	AQI	Concentration range*							
		PM ₁₀	PM _{2.5}	NO ₂	O ₃	CO	SO ₂	NH ₃	Pb
Good	0 - 50	0 - 50	0 - 30	0 - 40	0 - 50	0 - 1.0	0 - 40	0 - 200	0 - 0.5
Satisfactory	51 - 100	51 - 100	31 - 60	41 - 80	51 - 100	1.1 - 2.0	41 - 80	201 - 400	0.5 - 1.0
Moderately polluted	101 - 200	101 - 250	61 - 90	81 - 180	101 - 168	2.1 - 10	81 - 380	401 - 800	1.1 - 2.0
Poor	201 - 300	251 - 350	91 - 120	181 - 280	169 - 208	10 - 17	381 - 800	801 - 1200	2.1 - 3.0
Very poor	301 - 400	351 - 430	121 - 250	281 - 400	209 - 748*	17 - 34	801 - 1600	1200 - 1800	3.1 - 3.5
Severe	401 - 500	430 -	250+	400+	748+*	34+	1600+	1800+	3.5+

* CO in mg/m³ and other pollutants in µg/m³; 2h-hourly average values for PM₁₀, PM_{2.5}, NO₂, SO₂, NH₃, and Pb, and 8-hourly values for CO and O₃.

based on ambient concentration values of air pollutants and their likely health impacts (known as health breakpoints). AQ sub-index and health breakpoints are evolved for eight pollutants (PM10, PM2.5, NO₂, SO₂, CO, O₃, NH₃, and Pb) for which short-term (upto 24-hours) National Ambient Air Quality Standards are prescribed.

16. Polar Vortex

Context:

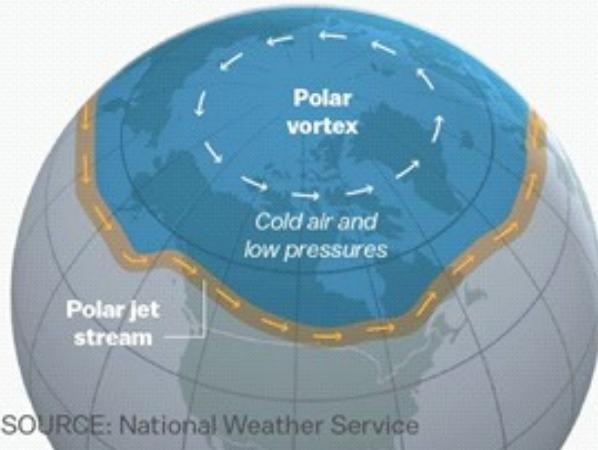
Many parts of the northern United States experiences record cold temperatures, which has been attributed to the Polar Vortex.

What is Polar Vortex?

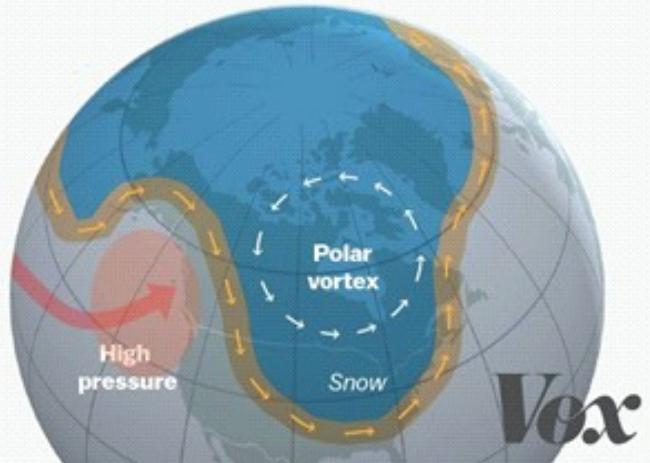
- It is described as a whirling cone of low pressure over the poles that is strongest in the winter months due to the increased temperature contrast between the polar regions and the mid-latitudes, such as the US and Europe.
- The polar vortex spins in the stratosphere, a layer of the atmosphere 10-48 km above the ground and above the troposphere, where most familiar weather patterns develop.
- Usually, when the vortex is strongest, cold air is less-likely to plunge deep into North America or Europe. In other words, it forms a wall that protects the mid-latitudes from cold Arctic air.
- But occasionally, the polar vortex is disrupted and weakens, due to wave energy propagating upward from the lower atmosphere.

What's the polar vortex?

1 The polar vortex is an area of low pressure surrounding both of the Earth's poles that keeps the cold air trapped in the north.



2 Sometimes during the winter, the jet stream dips southward, sending cold Arctic air into the United States.



- When this happens, the stratosphere warms sharply in an event known as sudden stratospheric warming, in just a few days, miles above the Earth's surface.
- The warming weakens the polar vortex, shifting its location somewhat south of the pole or, in some instances, 'splitting' the vortex up into 'sister vortices'.
- The split higher up in the atmosphere can give rise to both, sudden and delayed effects, much of which involves declining temperatures and extreme winter weather in the eastern US along with northern and western Europe.
- A sudden stratospheric warming also leads to a warm Arctic not only in the stratosphere but also in the troposphere as well. A warmer Arctic, in turn, favours more severe winter weather in the Northern Hemisphere mid-latitudes including the eastern US.
- But the polar vortex is not a recent phenomenon. It has been tormenting the Earth's northern regions for well over four billion years.

17. Great Indian Bustard

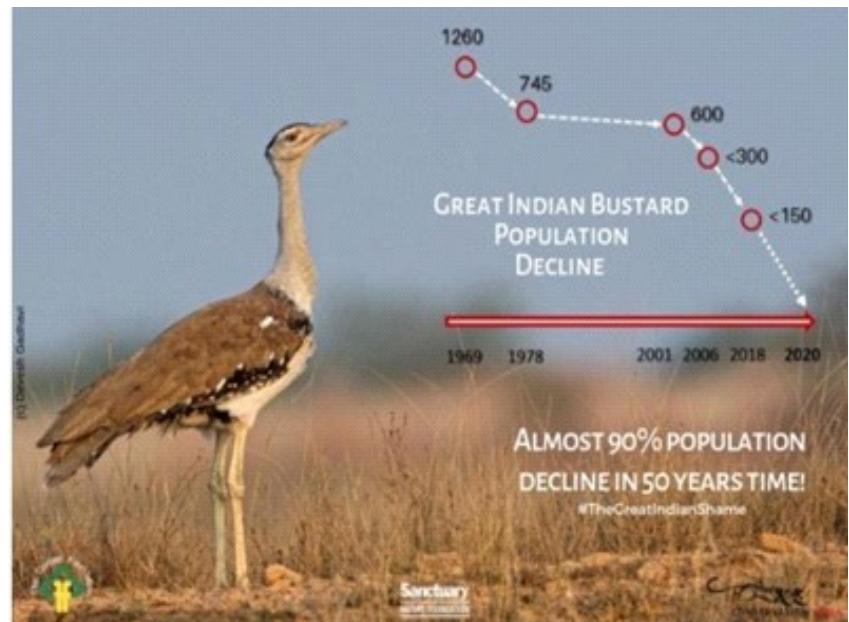
Context:

Wildlife activists have called for enforcement of recovery plan for the country's most critically endangered bird- Great Indian Bustard, once the contender for becoming India's national bird, the Great Indian Bustard is now facing extinction.

About:

- Great Indian Bustard is listed in Schedule I of the Indian Wildlife (Protection)Act, 1972, in the CMS Convention and in Appendix I of CITES, as Critically Endangered on the IUCN Red List.

- It has also been identified as one of the species for the recovery programme under the Integrated Development of Wildlife Habitats of the Ministry of Environment and Forests, Government of India.
- Project Great Indian Bustard: State of Rajasthan identifying and fencing off bustard breeding grounds in existing protected areas as well as provide secure breeding enclosures in areas outside protected areas.



Protected areas:

- Desert National Park Sanctuary-Rajasthan.
- Rollapadu Wildlife Sanctuary-Andhra Pradesh.
- Karera Wildlife Sanctuary-Madhya Pradesh.

18. Elephant corridor

Context:

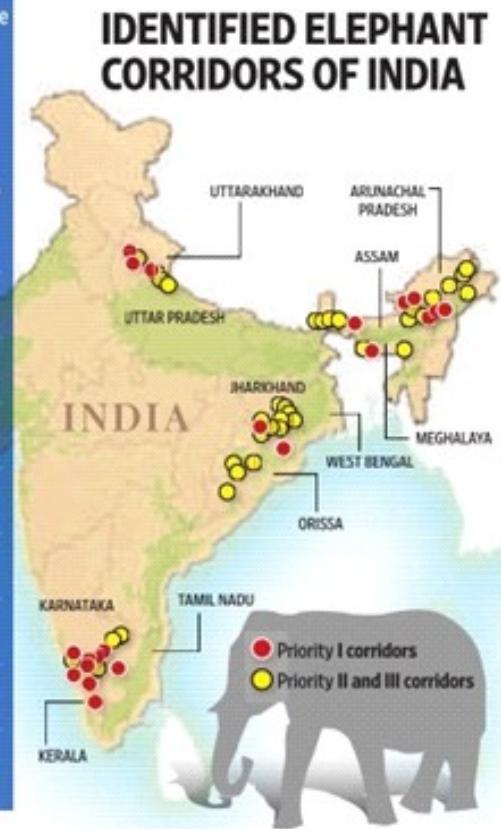
The Supreme Court dismissed an appeal filed by Numaligarh Refinery Ltd. (NRL) and ordered demolition of a 2.2-km boundary wall erected on an elephant migration corridor in eastern Assam's Golaghat district.

About the issue:

- Environmentalists had objected to the wall the refinery had erected in 2011 for a proposed township in – as the National Green Tribunal (NGT) had observed later – a part of the Deopahar Reserve Forest.
- The refinery received flak from wildlife activists when a seven-year-old male elephant died of haemorrhage (an escape of blood from a ruptured blood vessel) in May 2015 after trying to force its way through the wall. Videos also captured herds trying to cross the high boundary wall with barbed wire in vain. In August 2016, the NGT ordered NRL to demolish the wall within a month, but only a 289-metre stretch was demolished.
- Dismissing the NRL's appeal in the apex court, Justice D.Y. Chandrachud said there cannot be any township as elephants have the first right on forest. "Elephants do not go to office in a designated route. We cannot encroach upon the elephant's area," he observed.

Elephant Corridors:

- Elephant corridors are narrow strips of land that connect two large habitats of elephants.
- Nearly 40% of elephant reserves are vulnerable, as they are not within protected parks and sanctuaries. Also, the migration corridors have no specific legal protection.
- Illegal structures in these pathways should be removed without delay. ? Efforts should be to expand elephant corridors, using the successful models within the country.
- This includes acquisition of lands using private funds and their transfer to the government.
- Forests that have turned into farms and unchecked tourism are blocking animals' paths. Animals are thus forced to seek alternative routes resulting in increased elephant-human conflict.
- Weak regulation of ecotourism is severely impacting important habitats. It particularly affects animals that have large home ranges, like elephants.
- The movement of elephants is essential to ensure that their populations are genetically viable.
- It also helps to regenerate forests on which other species, including tigers, depend.
- Elephant corridors are also crucial to reduce animal fatalities due to accidents and other reasons. So fragmentation of forests makes it all the more important to preserve migratory corridors.
- Ending human interference in the pathways of elephants is more a conservation imperative.



Science and Technology

19. Microplastics Saga

Context:

Researchers from the University of Exeter and Plymouth Marine Laboratory (PML) in the U.K. examined 50 animals from 10 species of dolphins, seals and whales and found micro plastics in them all.

What are microplastics?

Microplastics are tiny particles which are present in many sources, including carry bags and pet bottles.

These tiny particles easily pass through water filtration systems and end up in the water bodies, posing a potential threat to aquatic life. Microbeads, a kind of microplastic, are used as exfoliates in some cleansers and toothpastes. Even though banned in US and Canada, microbeads are still used in India.

How does plastic get into water?

- These microscopic fibers originate in everyday activities such as abrasion of clothes, upholstery, and carpets. About 60 per cent of all our clothes are made from polyester, a form of plastic derived from fossil fuel. Another kind of plastic, styrene butadiene is released from vehicular tyres, which lands into sewers and water bodies.

STAINED SPARKLE?

Risks associated with exfoliating agents used in personal care products has alarmed green panel

What are microbeads? <ul style="list-style-type: none"> ○ Microbeads are plastic pieces or fibre measuring less than 1 mm 	Why is it used? <ul style="list-style-type: none"> ○ Microbeads have been used to replace natural exfoliating materials. Microspheres in different colors add visual appeal to cosmetic products because of which their usage is becoming more rampant
	
What are microbeads made of? <ul style="list-style-type: none"> ○ Microbeads used in personal care products are mainly made of polyethylene (PE), but can be also be made of polypropylene (PP), polyethylene terephthalate (PET), polymethyl methacrylate (PMMA) and nylon 	What are they mainly used in? <ul style="list-style-type: none"> ○ They are widely used in cosmetics as exfoliating agents and in personal care products such as toothpaste, as well as in biomedical and health science research. In layman's language, these microbeads are so small that a person can barely feel them. Their roundness and particle size create a ball-bearing effect in creams and lotions, resulting in a silky texture and spread ability
What is the danger from them? <p>Microbeads — largely non-biodegradable — flow through sewer systems and end up in seas and oceans, where they contribute to the huge chunk of plastic soup in the environment</p> <p>Microbeads are also likely to be transported to wastewater treatment plants. Due to their small size, a substantial proportion passes through the filtration system and enters aquatic environments</p>	

How harmful is it?

- Micro plastics can migrate through the intestinal wall and travel to lymph nodes and other bodily organs, shows the Orb report. Micro plastics have also been shown to absorb toxic chemicals linked to cancer and other illnesses, and then release them when consumed by fish and mammals. So if plastic fibers are in your water, experts say they're surely in your food.

Why do we need to act now?

- If current pollution rates continue, there will be more plastic in the sea than fish by 2050, said the United Nations Environment Programme (UNEP).

- Nearly eight million tonnes of plastic – bottles, packaging and other waste – are dumped into the ocean every year. This plastic waste is then killing marine life and entering the human food chain.
- According to the UN Environment Programme, the global production of plastics has reached at over 300 million tonnes a year.
- Micro plastics (particles of less than 5 mm) such as those used in scrubbers and cosmetics, ingested by marine animals can cause accumulation of certain chemicals and result in physiological impacts. Micro plastics can impair reproduction and development and alter how species function.
- Like greenhouse gases, plastic is also not constrained by national boundaries, because it migrates via water and air currents and settles in benthic sediments.
- Majority of ocean's area is beyond national jurisdictions which resulted into "garbage patches" in oceanic gyres by the accumulation of plastic waste from different nations.
- The health impact of the presence of polypropylene, polyethylene terephthalate and other chemicals in drinking water, food and even inhaled air may not yet be clear, but indisputably these are contaminants.

Way Forward:

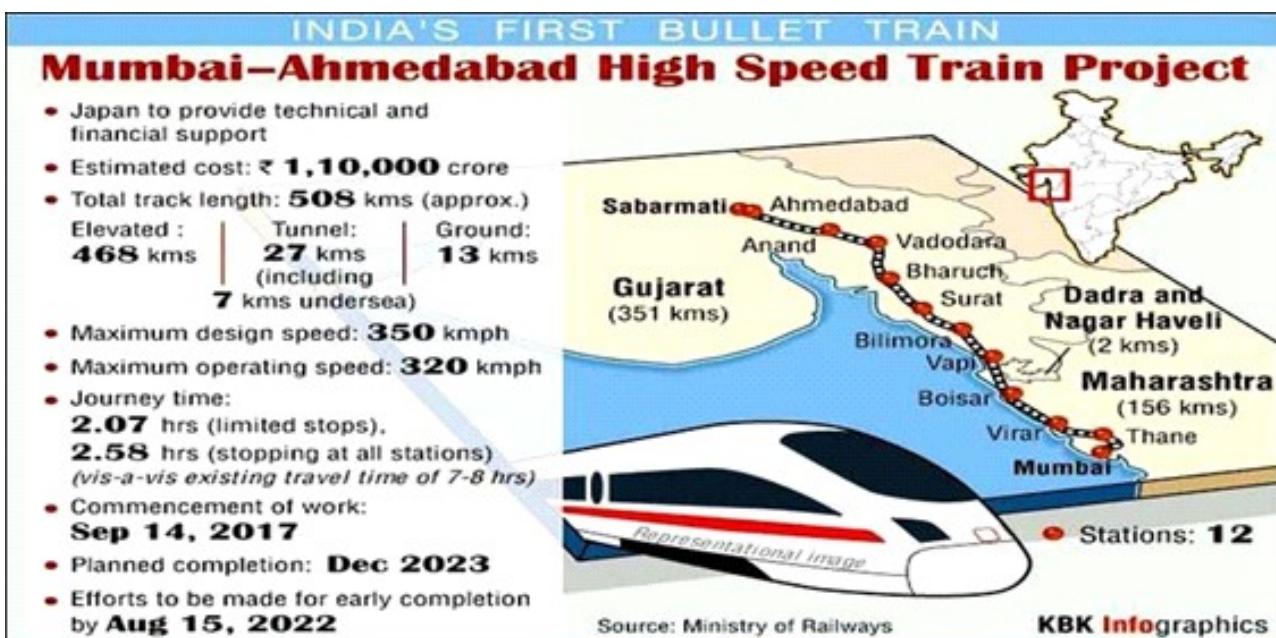
Unlike POPs (Persistent Organic Pollutants) or chlorofluorocarbons (CFCs), Plastic pollution has received little attention in terms of international agreements. No single solution will stop marine plastic pollution. Hence an internationally agreed and a legally binding instrument are required. As the European Union's vision 2030 document on creating a circular plastic economy explains, the answer lies in changing the very nature of plastics, from cheap and disposable to durable, reusable and fully recyclable. Marine plastic pollution is a "planetary crisis," and we should hope for a "Paris-style" global treaty aimed at tackling it.

20. Mumbai –Ahmedabad Bullet Train Project

Context:

The Mumbai-Ahmedabad high speed train corridor project will pass through the Thane Creek Flamingo (TCF) Wildlife Sanctuary.

The 1,690-hectare bird haven of 896 hectares of mangrove forests and 794 hectares of a water-body is on the western bank of the creek, between the Airoli and the Vashi bridges connecting Mumbai and Navi Mumbai. Apart from the creek, the project also involves diverting 32.75 ha of forestland and 77.30 ha of non-forestland from the Sanjay Gandhi National Park which houses leopards and transfer of 0.6902 ha of forest land and 4.7567 ha of non-forest land from the Tungareshwar Wildlife Sanctuary.



Conditions to be followed:

While according clearance, the National Board of Wildlife, the apex body tasked with according permissions to allow forest land to be diverted for industrial development has laid pre-conditions for the bullet train project. These include

- Paying Rs. 10 crore (2% of 500 crore — the component of the project in Mumbai) for habitat improvement of the sanctuary,
- Barricading the work site to ensure that no debris fall outside the project area and ,
- Providing site and funds for penal plantation of at least 5 times the number of mangrove plants anticipated to be lost in this project.

21. WHO's report on South East Asia

Context:

According to WHO's report, 18.1 million new cases of cancer developed worldwide; 9.6 million people died from the disease; 70% of the deaths occurred in low and middle-income countries, including those of the World Health Organization (WHO) Southeast Asia region; and 67% of the region's cancer patients died before the age of 70.

Highlights

- Non-communicable diseases (NCDs), mainly cardiovascular diseases, chronic respiratory diseases, diabetes and cancer continue to be the top killers in the South-East Asia Region, claiming 8.5 million lives each year, according to the World Health Organization (WHO).
- In 2017, just 30% of low-income countries reported having cancer treatment services available.
- 26% of low-income countries reported having pathology services generally available in the public sector.

- According to figures for India released by the National Institute of Cancer Prevention and Research (NICPR), one woman dies of cervical cancer every eight minutes in India; for every two women newly diagnosed with breast cancer, one woman dies of it in India;
- As many as 2,500 persons die every day due to tobacco-related diseases; and tobacco (smoked and smokeless) use accounted for 3,17,928 deaths in men and women in 2018.

Way Forward:

While tertiary services are important, they are expensive and generally most effective when a cancer is detected early. To make that happen, effective cancer screening services must be available at both secondary and primary facilities, while health workers must be trained to identify the signs and symptoms that could lead to a positive diagnosis.

22. Zearalenone in cereals

Context:

A Journal of Food Science study detected zearalenone in wheat, rice, corn and oats from markets in Uttar Pradesh.

- Zearalenone is a fungal toxin infesting cereals such as wheat, maize and barley. It attacks crops while they are growing, but can also develop when cereals are stored without being dried fully.

Mycotoxins in Crops: Zearalenone

Mycotoxins are chemicals produced by fungi that are harmful to humans and animals. These chemicals can contaminate food and feed, posing a number of significant safety concerns.

Zearalenone is a mycotoxin produced primarily by the fungus *Fusarium graminearum*, the same fungus that produces deoxynivalenol (DON).

Zearalenone contamination is common in **maize** and **hay** – food sources for many animals including swine, poultry and cattle.

Zearalenone can delay the breeding process in animals and cost producers significant **economic and physical loss**.

Zearalenone mimics the reproductive hormone estrogen and can cause a wide variety of **reproductive problems** in animals including periods of infertility, low birth weights and reduced litter size.

High humidity and **low temperatures** typically favor the production of zearalenone.

Sources:
<http://www.japant.org/ledcontent/lnropp-topics/mycotoxins/Pages/default.aspx>
<http://www.fao.org/wairdocs/ks008en/ks008e01.htm>

MONDAY MYCOTOXIN AND CROP report

Stay up-to-date on the most current mycotoxin news with Neogen's weekly Monday Mycotoxin and Crop Reports. You can also join Neogen's mycotoxin reporting network through Neogen's NeoMyco app. For more information, visit: foodsafety.neogen.com/mycotoxins.

How does it affect?

- Zearalenone behaves like oestrogen, the female sex hormone, and could cause endocrine disturbances in humans.
- Its nasty effects in animals, such as pigs, are documented. When fed with mouldy corn, pigs develop inflamed vaginas, infertility and other symptoms.
- This is why countries like Brazil regulate zearalenone levels in animal feed. In humans, the data are fuzzier.
- Fungal toxins are commonly found in food, and can be a public health concern. India regulates the levels of some of these, including aflatoxin, deoxynivalenol, ergot and patulin.
- The first three infest cereals, while patulin is found in apples. Each of these toxins has been associated with disease outbreaks.
- For example, in 1974, a hepatitis outbreak in Rajasthan and Gujarat, which made 398 people sick and killed 106, was linked to aflatoxin in maize. Meanwhile, chronic aflatoxin consumption has been shown to cause liver cancer.
- Given this, the International Agency for Research on Cancer (IARC) classifies aflatoxin as a Group 1 carcinogen, meaning there is enough evidence for its carcinogenicity.
- In zearalenone's case, there is no strong evidence of toxicity in humans so far, though several research groups are investigating. As a result, the IARC classifies it as a Group 3 carcinogen, which means evidence is not sufficient for an evaluation yet.

Way Forward:

- More data are needed from cereals in other States, and from other storage conditions, before India decides to set limits.
- Since zearalenone favours cool climates, such contamination could be limited to a few States.
- Also, strong epidemiological data linking human zearalenone levels with diseases such as breast cancer are important.
- The latest findings are an excellent starting point, since nothing was known about the chemical in India so far. It is time to build upon it.

23. Role Model for Malaria Control

Context:

As per World Health Organization's World Malaria Report of 2018, India is the only country among the 11 highest-burden countries that saw substantial progress in reducing disease burden: it saw a 24% decrease in 2017 compared to 2016. This shows that India has assumed a leadership role in advancing global efforts to end malaria. The country's success provides hope to the other highest-burden countries to tackle malaria head-on.

Steps taken by India to control Malaria

- India's progress in fighting malaria is an outcome of concerted efforts to ensure that its malaria programme is country-owned and country-led, even as it is in alignment with globally accepted strategies.
- The turning point in India's fight against malaria came at the East Asia Summit in 2015, when it pledged to eliminate the disease by 2030. Following this public declaration, India launched the five-year National Strategic Plan for Malaria Elimination.
- This marked a shift in focus from malaria "control" to "elimination". The plan provides a roadmap to achieve the target of ending malaria in 571 districts out of India's 678 districts by 2022.
- The plan requires more than ¹ 10,000 crore. Adequate investment combined with coordinated action between governments, civil society and philanthropic donors is imperative to achieve this goal.
- Since health is a State subject, State governments across the country shoulder a special responsibility in tackling the disease.

DAMaN initiative:

- Among states, Odisha's Durgama Anchalare Malaria Nirakaran (DAMaN) initiative is significant. DAMaN has been accorded priority in the State's health agenda.
- The initiative aims to deliver services to the most inaccessible and hardest hit people of the State.
- The initiative has in-built innovative strategies to combat asymptomatic (showing no symptoms) malaria.
- The programme is jointly implemented by Indian Council of Medical Research, National Institute of Malaria Research (ICMR-NIMR), National Vector Borne Disease Control Programme (NVBDCP), Odisha and Medicines for Malaria Venture (MMV).
- In 2017, accredited social health activists (ASHAs) helped distribute approximately 11 million bed nets, which was enough to protect all



the residents in areas that were at highest risk. This included residential hostels in schools.

- As a result of its sustained efforts, Odisha recorded a 80% decline in malaria cases and deaths in 2017.
- There is financial commitment for a fiveyear period to sustain and build on the impact created by the initiative.

Way forward:

The new country-driven ‘high burden to high impact’ plan to reduce disease burden in the 11 countries reflects the global sentiment that business as usual is no longer an option when it comes to fighting the disease. By prioritising malaria elimination, India, and especially Odisha, is showing the world the way.

Miscellaneous

24. Pradhan Mantri Shram Yogi Mandhan Pension Yojna

Context:

A major announcement was made in the interim budget for the pension regulation of the unorganized workers .Under the scheme, an assured monthly pension of Rs 3,000 per month will be provided to workers in the unorganized sector after 60 years of age.

- The scheme will attract matching contribution of Rs 100 per month from government as well as from workers.
- The scheme will benefit 10 crore workers in unorganized sector, may become the world's biggest pension scheme for unorganized sector in five years".

25. Liquidity premium

- It is also known as the **illiquidity premium**, this refers to the additional return that an investor can earn from any investment that cannot be immediately liquidated for cash in the market.
- Risk-averse investors generally try to avoid investing in highly illiquid assets like real estate due to the time it takes to sell these assets. This causes successful investors in illiquid assets to earn a much higher return than other investors who prefer to invest only in highly liquid assets.
- By the same logic, since most investors would be willing to invest in highly liquid assets, the returns from such investments generally turn out to be lower than the returns from illiquid investments.

26. Museum

Context:

Prime Minister Narendra Modi inaugurated Netaji Subhash Chandra Bose Museum, Yaad-e-Jallian Museum (museum on the Jallianwala Bagh and World War I), the Museum on 1857- India's first war of Independence, and Drishyakala-Museum on Indian Art within the Red Fort complex.

Netaji Subhash Chandra Bose Museum

The Subhash Chandra Bose museum at Red Fort was inaugurated to mark the Netaji's 122nd birth anniversary. This Museum on Subhash Chandra Bose and the Indian National Army showcases different artifacts related to Netaji and Indian National Army which includes a wooden chair and sword used by the Netaji, medals, badges and uniforms. The museum in the Red Fort complex is also important for the fact that INA trials were held within the Red Fort complex.

Yaad-e-Jallian Museum:

The Yaad-e-Jallian Museum provides an authentic account of Jallianwala Bagh massacre happened on April 13, 1919. The Yaad-e-Jallian Museum will also showcase the heroism, valour and sacrifices made by Indian soldiers during World War-1.

Museum on 1857- India's first war of Independence:

The Museum on 1857- India's first war of Independence portrays the historical narrative of 1857 war of independence, showcasing the valor and sacrifices made by Indians during the period.

Drishyakala-Museum on Indian Art: The Drishyakala-Museum on Indian Art showcases Indian art works from 16th century till India's independence.

27. Keerian -Gandial bridge

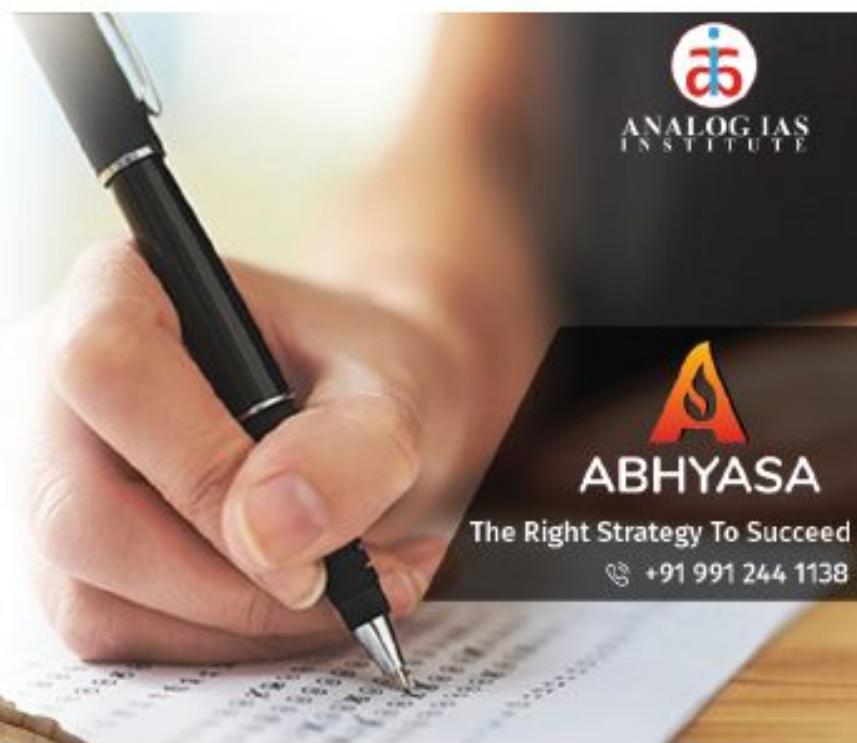
Context:

Keerian – Gandial bridge, over river Ravi, was inaugurated recently.

About the bridge: The bridge over Ravi at Keerian – Gandial will benefit over 2,20,000 people living on the two sides Kathua in Jammu, and Pathankot in Punjab. It will reduce the distance between the two cities from 45 kms to 8.6 kms. The bridge will improve inter-state connectivity.

River Ravi

The Ravi has its source in Kullu hills near the Rohtang Pass in Himachal Pradesh. It drains the area between the Pir Panjal and the Dhaola Dhar ranges. After crossing Chamba, it takes a southwesterly turn and cuts a deep gorge in the Dhaola Dhar range. It enters Punjab Plains near Madhopur and later enters Pakistan below Amritsar. It debouches into the Chenab a little above Rangpur in Pakistani Punjab.



Abhyasa Program Structure

	Multiple Choice Questions (PRELIMS)	Descriptive Questions (MAINS)	Total Marks
Daily Test	10 (10*1 = 10 marks)	1 (1*10= 10 Marks)	20
Weekly Test	20 (20*1 = 20 marks)	2 (2*10= 20 Marks)	40
Fortnightly Test	30 (30*1 = 30 marks)	3 (3*10= 30 Marks)	60
Monthly Test	50 (50*1 = 50 marks)	5 (5*10= 50 Marks)	100
3 Months Test	100 (100*1 = 100 marks)	10 (10*10= 100 Marks)	200
Total Questions	4250+	500+	

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83



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Mishra
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417



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480



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