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AI for good governance

Why in news?

The two-day Colloquium on Artificial Intelligence (AI) for good governance has been organized by Department of Science and Technology, CMS, ITUAPT and InfocomThink Tank.

National Strategy for Artificial Intelligence

- Artificial Intelligence (AI) is poised to disrupt our world. With intelligent machines enabling high-level cognitive processes like thinking, perceiving, learning, problem solving and decision making, coupled with advances in data collection and aggregation, analytics and computer processing power,
- AI presents opportunities to complement and supplement human intelligence and enrich the way people live and work.

Importance for India

- India, being the fastest growing economy with the second largest population in the world, has a significant stake in the AI revolution.
- Recognising AI's potential to transform economies and the need for India to strategise its approach, Hon'ble Finance Minister, in his budget speech for 2018 – 2019, mandated NITI Aayog to establish the National Program on AI, with a view to guiding the research and development in

new and emerging technologies.

- In pursuance of the above, NITI Aayog has adopted a three-pronged approach – undertaking exploratory proof-of-concept AI projects in various areas, crafting a national strategy for building a vibrant AI ecosystem in India and collaborating with various experts and stakeholders.
- This strategy document is premised on the proposition that India, given its strengths and characteristics, has the potential to position itself among leaders on the global AI map – with a unique brand of #AIforAll.
- #AIforAll will aim at enhancing and empowering human capabilities to address the challenges of access, affordability, shortage and inconsistency of skilled expertise; effective implementation of AI initiatives to evolve scalable solutions for emerging economies; and endeavors to tackle some of the global challenges from AI's perspective, be it application, research, development, technology, or responsible AI.
- #AIforAll will focus on harnessing collaborations and partnerships, and aspires to ensure prosperity for all. Thus, #AIforAll means technology leadership in AI for achieving the greater good.

What is Artificial Intelligence?

- AI refers to the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision making.
- While AI has the potential to provide large incremental value to a wide range of sectors, adoption till date has been driven primarily from a commercial perspective.
- Technology disruptions like AI are once-in-ageneration phenomenon, and hence large-scale adoption strategies, especially national strategies, need to strike a balance between narrow definitions of financial impact and the greater good.
- NITI Aayog has decided to focus on five sectors that are envisioned to benefit the most from AI in solving societal needs:
  a. Healthcare: increased access and affordability of quality healthcare,
  b. Agriculture: enhanced farmers' income, increased farm productivity and reduction of wastage,
  c. Education: improved access and quality of education,
  d. Smart Cities and Infrastructure: efficient and connectivity for the burgeoning urban population, and
  e. Smart Mobility and Transportation: smarter and safer modes of

transportation and better traffic and congestion problems.

Artificial Intelligence has the potential to provide large incremental value to a wide range of sectors globally, and is expected to be the key source of competitive advantage for firms.

a) **Healthcare**: Application of AI in healthcare can help address issues of high barriers to access to healthcare facilities, particularly in rural areas that suffer from poor connectivity and limited supply of healthcare professionals. This can be achieved through implementation of use cases such as AI driven diagnostics, personalised treatment, early identification of potential pandemics, and imaging diagnostics, among others.

b) **Agriculture**: AI holds the promise of driving a food revolution and meeting the increased demand for food (global need to produce 50% more food and cater to an additional 2 billion people by 2050 as compared to today). It also has the potential to address challenges such as inadequate demand prediction, lack of assured irrigation, and overuse / misuse of pesticides and fertilisers.

Some use cases include improvement in crop yield through real time advisory, advanced detection of pest attacks, and prediction of crop prices to inform sowing practices.

c) **Smart Mobility** including Transports and Logistics: Potential use cases in this domain include autonomous fleets for ride sharing, semi-autonomous features such as driver assist, and predictive engine monitoring and maintenance. Other areas that AI can impact include autonomous trucking and delivery, and improved traffic management.

d) **Retail:** The retail sector has been one of the early adopters of AI solutions, with applications such as improving user experience by providing personalised suggestions, preference-based browsing and image-based product search. Other use cases include customer demand anticipation, improved inventory management, and efficient delivery management.

e) **Manufacturing:** Manufacturing industry is expected to be one of the biggest beneficiaries of AI based solutions, thus enabling 'Factory of the Future' through flexible and adaptable technical systems to
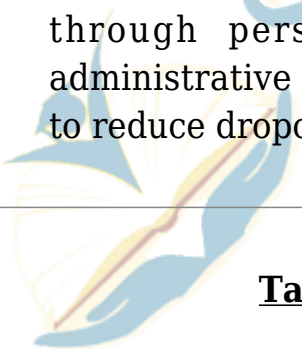
automate processes and machinery to respond to unfamiliar or unexpected situations by making smart decisions.

Impact areas include engineering (AI for R&D efforts), supply chain management (demand forecasting), production (AI can achieve cost reduction and increase efficiency), maintenance (predictive maintenance and increased asset utilisation), quality assurance (e.g. vision systems with machine learning algorithms to identify defects and deviations in product features), and in-plant logistics and warehousing.

f) Energy: Potential use cases in the energy sector include energy system modelling and forecasting to decrease unpredictability and increase efficiency in power balancing and usage. In renewable energy systems, AI can enable storage of energy through intelligent grids enabled by smart meters, and also improve the reliability and affordability of photovoltaic energy. Similar to the manufacturing sector, AI may also be deployed for predictive maintenance of grid infrastructure.

g) Smart Cities: Integration of AI in newly developed smart cities and infrastructure could also help meet the demands of a rapidly urbanising population and providing them with enhanced quality of life. Potential use cases include traffic control to reduce congestion and enhanced security through improved crowd management.

h) Education and Skilling: AI can potentially solve for quality and access issues observed in the Indian education sector. Potential use cases include augmenting and enhancing the learning experience through personalised learning, automating and expediting administrative tasks, and predicting the need for student intervention to reduce dropouts or recommend vocational training.

Tagore Awards for Cultural Harmony

Why in news?

The President of India presented the Tagore Award for Cultural Harmony for the years 2014, 2015 and 2016 to Shri Rajkumar Singhajit Singh, Chhayanaut (a cultural organisation of Bangladesh) and Shri Ram Vanji Sutar respectively, at a function held in New Delhi.

About Tagore Awards for Cultural Harmony:

- The Tagore Award is an award given in commemoration of the 150th birth anniversary of the Nobel laureate Rabindranath Tagore (1861–1941) for cultural harmony.
- Established in 2011 by Government of India, it is given for outstanding achievement in fostering harmony and universalism and values of cultural harmony especially in conflict or extreme situations through innovative systems/strategies and which have an enduring and transformational impact.
- Award is a celebration of Indian traditions of culture and of our civilizational wealth – whether in literature or music, art or drama, sculpture or handicrafts, design or digital art.
- This award carries an amount of Rupees One Crore (ten million rupees, convertible to foreign currency), a Citation in a Scroll, a Plaque as well as an exquisite traditional handicraft/handloom item.
- The first award was given in 2012 to Pandit Ravi Shankar by the President of India Pranab Mukherjee.

Brief introduction of Award Recepients:

- *Rajkumar Singhajit Singh* is a leading exponent, choreographer and a guru of Indian classical dance form of Manipuri, including the Pung cholom and Raslila.
- The *Chhayanaut Sangeet Vidyatan* is an institution devoted to Bengali culture, founded in Bangladesh in 1961. As in the case of many similar organizations, it was established during Pakistani rule in Bangladesh to promote and nurture the cultural and musical heritage of Bengal.
- *Ram Vanji Suthar* is an Indian sculptor. He has created more than fifty monumental sculptures in the last forty years of his career. He is the recipient of Padma Bhushan in 2016 and Padma Shri in 1999 for his contribution in the field of arts. He also designed the Statue of Unity which it is the world's tallest statue at the height of 182 metres exceeding the Spring Temple Buddha by 54 meters.

NITI delegation visits Riyadh

Why in News?

A High-level delegation, led by NITI Aayog CEO, Amitabh Kant visited Saudi Arabia from 16th to 17th February 2019. The delegation comprised of leading Indian CEOs took part in extensive discussions with the Saudi Centre for International Strategic Partnerships (SCISP) and with Ministerial level representations from 12 Saudi Ministries in Riyadh.

Highlights:

- The NITI Aayog-SCISP workshop led by Amitabh Kant from the Indian side and Dr. Faisal Al Sugair, CEO, SCISP held wide ranging discussions on the possible opportunities of joint cooperation and collaboration across sectors like energy, food processing, pharmaceuticals, infrastructure, mining, ICT, tourism, defence etc.
- During this workshop, Invest India Grid was launched in Saudi Arabia. Invest India is setting up a dedicated team for facilitating Saudi investments in India. NITI Aayog and SCISP agreed to provide continuing momentum to the India-Saudi Arabia Strategic Partnership.
- CEO, NITI Aayog called on the Saudi Minister of Finance Mohammad Al Jada'an discussing ways to strengthen bilateral ties and other issues of mutual concern. Six working groups have identified 40 investment, trade and business opportunities with vast potential for expansion.

About Invest India:

- 'Invest India' is India's official agency dedicated to investment promotion and facilitation. It is a not-for-profit, single window facilitator, set up in 2010 for prospective overseas investors and to those aspiring Indian investors desiring to invest in foreign locations, and acts as a structured mechanism to attract investment.
- Invest India is essentially an Investment Promotion Agency in India.

Structure & Mandate

- Operationalized in early **2010**, Invest India is set up as **a joint venture** company between the Department of Industrial Policy & Promotion (DIPP), Ministry of Commerce & Industry (35% equity), Federation of Indian Chambers of Commerce and Industry (FICCI) (51% equity), and State Governments of India (0.5% each).
- Thus, essentially, Invest India is a private company, unlike India Brand Equity Foundation - another investment promotion agency in India set

up by the same Ministry – Ministry of Commerce & Industry.

- The core mandate of Invest India is *investment promotion and facilitation*. It provides sector-specific and state-specific information to a foreign investor, assists in expediting regulatory approvals, and offers hand-holding services. Its mandate also includes assisting Indian investors to make informed choices about investment opportunities overseas.

Functioning:

- It facilitates meetings with relevant government and corporate officials and organizes investment road shows and roundtables. Invest India also provides aftercare services that include initiating remedial action on problems faced by investors by involving the Government Departments concerned.
- Invest India regularly partners with similar agencies across the world in an endeavour to enhance bilateral investment and economic engagement. As in August 2013, it has signed MoUs with Investment promotion agencies of Italy, France, USA, UK, Japan, South Korea and Mauritius.
- It also contributes to the Government of India's Investment related engagements with Africa. (To elaborate on its functioning further, for eg. an MOU for establishing 'Korea Plus' was signed between the Ministry of Trade, Industry and Energy, Govt. of the Republic of Korea and Invest India in January 2016.

National Commission for Scheduled Tribes

Why in news?

The National Commission for Scheduled Tribes (NCST) was set up on 19th February, 2004 through Constitution (89th Amendment) Act. The Commission will be celebrating fifteen years on 19th February, 2019.

About National Commission for Scheduled Tribes:

- National Commission for Scheduled Tribes (STs) is a constitutional body established under Article 338-A of the Constitution.
- The separate National Commission for STs came into existence in 2004. It consists of a chairperson, a vice-chairperson and three other members. They are appointed by the President by warrant under his hand and seal. Their conditions of service and tenure of office are also determined by the President.

FUNCTIONS OF THE COMMISSION

The functions of the Commission are:

1. To investigate and monitor all matters relating to the constitutional and other legal safeguards for the STs and to evaluate their working;
2. To inquire into specific complaints with respect to the deprivation of rights and safeguards of the STs;
3. To participate and advise on the planning process of socio-economic development of the STs and to evaluate the progress of their development under the Union or a state;
4. To present to the President, annually and at such other times as it may deem fit, reports upon the working of those safeguards;
5. To make recommendations as to the measures that should be taken by the Union or a state for the effective implementation of those safeguards and other measures for the protection, welfare and socio-economic development of the STs;
6. To discharge such other functions in relation to the protection, welfare and development and advancement of the STs as the President may specify.
7. Measures to be taken over conferring ownership rights in respect of minor forest produce to STs living in forest areas
8. Measures to be taken to safeguard rights of the tribal communities over mineral resources, water resources etc., as per law
9. Measures to be taken for the development of tribals and to work for more viable livelihood strategies
10. Measures to be taken to improve the efficacy of relief and rehabilitation measures for tribal groups displaced by development projects
11. Measures to be taken to prevent alienation of tribal people from land and to effectively rehabilitate such people in whose case alienation has already taken place
12. Measures to be taken to elicit maximum cooperation and involvement of tribal communities for protecting forests and undertaking social

afforestation

13. Measures to be taken to ensure full implementation of the Provisions of Panchayats (Extension to the Scheduled Areas) Act, 1996

14. Measures to be taken to reduce and ultimately eliminate the practice of shifting cultivation by tribals that lead to their continuous disempowerment and degradation of land and the environment.

NCST Leadership Award:

- The National Commission for Scheduled Tribes has also decided to institute a national award named as "NCST Leadership Award" which will be conferred for significant and exemplary services towards Scheduled Tribes in the country. The awards will be given in 3 categories i.e.
    - Educational Institutions/ Universities,
    - Public Sector Undertakings/Banks and
    - Public Service rendered by an Individual, NGO or Civil Society.

- The award will be presented in the form of a citation, a medal along with an "Uttriya" by Hon'ble Vice President of India in the Foundation Day Function on 19th February, 2019.

The Hindu Current Affairs

RBI to pay govt. ₹28,000 cr. in interim surplus

Why in news?

Ending the suspense, the Reserve Bank of India announced that it would transfer ₹28,000 crore to the Centre as interim surplus for the half-year ended December 2018.

Surplus Transfer:

- This will take the Centre's total receipts from the RBI as surplus transfer in 2018-19 to ₹68,000 crore.
- The central bank had earlier paid ₹40,000 crore to the **government** as

its final share of surplus for 2017-18. The RBI follows July-June accounting year.

- The interim surplus transferred by the RBI now is crucial to the Centre's ability to meet the revised fiscal deficit target of 3.4% for this fiscal.
- This is second consecutive year that the **central bank** has transferred interim surplus to the government.
- Inclusive of the ₹40,000 crore transferred by the central bank as final dividend for 2017-18, the Centre has earned a total of ₹68,000 crore as dividend from the RBI for the 2018-19 fiscal. The accounting year of the RBI runs from July to June.

- Last year, RBI had transferred ₹10,000 crore as interim surplus. The government had been putting pressure on the central bank to transfer more funds from the contingency reserves.
- A panel, headed by former **RBI Governor Bimal Jalan**, had been formed to review the economic capital framework of the bank.

RBI's Surplus:

- The RBI is a "full service" central bank not only is it mandated to keep inflation or prices in check, it is also supposed to manage the borrowings of the Government of India and of state governments; supervise or regulate banks and non-banking finance companies; and manage the currency and payment systems.
- While carrying out these functions or operations, it makes profits. Typically, the **central bank's income comes from the returns it earns** on its foreign currency assets which could be in the form of bonds and treasury bills of other central banks or top-rated securities, and deposits with other central banks.
- It also earns interest on its holdings of local rupee-denominated government bonds or securities, and while lending to banks for very short tenures, such as overnight.
- It claims a management commission on handling the borrowings of state governments and the central government.
- **Its expenditure** is mainly on the printing of currency notes and on staff, besides the commission it gives to banks for undertaking transactions on behalf of the government across the country, and to primary dealers, including banks, for underwriting some of these borrowings.

Arrangement on the transfer of surplus:

- The RBI isn't a commercial organisation like the banks or other

companies that are owned or controlled by the government and it **does not pay a "dividend" to the owner out of the profits** it generates.

- Although RBI was promoted as a **private shareholders' bank in 1935 with a paid-up capital of Rs 5 crore, the government nationalised it in January 1949**, making the sovereign its "owner".
- What the central bank does, therefore, is **transfer the "surplus" that is, the excess of income over expenditure to the government**, in accordance with Section 47 (Allocation of Surplus Profits) of the Reserve Bank of India Act, 1934.
- The Central Board of the RBI does this in early August, after the July-June accounting year is over.

Why is the transfer of surplus significant to the government?

- The quantum of surplus transferred over the past few years has been large. In 2015-16, the RBI passed on Rs 65,876 crore, which formed a sizeable chunk of the revenue which the **government earns under the head of 'non-tax'**, which is mainly dividends.
- This was much more than the surplus generated by banks and other companies owned by the government.
- The quantum of RBI transfers has in fact, been rising progressively, and has helped the government narrow its deficit or borrowings. That is why the halving of the 2015-16 surplus this year from Rs 66,000 crore to Rs 31,000 crore has raised concern in the markets over the possible impact on the government.

Is there an explicit policy on the distribution of surplus?

- No. But a Technical Committee of the **RBI Board headed by Y H Malegam,** which reviewed the adequacy of reserves and a surplus distribution policy, recommended, in 2013, a higher transfer to the government.
- Earlier, the RBI transferred part of the surplus to the Contingency Fund, to meet unexpected and unforeseen contingencies, and to the Asset Development Fund, to meet internal capital expenditure and investments in its subsidiaries in keeping with the recommendation of a committee to build contingency reserves of 12% of its balance sheet.
- But after the Malegam committee made its recommendation, in 2013-14, the RBI's transfer of surplus to the government as a percentage of gross income (less expenditure) shot up to 99.99% from 53.40% in 2012-13.
- The government has held the view that going by global benchmarks, the

RBI's reserves are far in excess of prudential requirements. Ex-Chief Economic Advisor **Arvind Subramanian** had suggested that these funds be utilised to provide capital to government-owned banks.

- The central bank, on its part, prefers to be more cautious and build its reserves keeping in mind potential threats from financial shocks, and the need to ensure financial stability and provide confidence to the markets.
- From the central bank's perspective, bigger reserves on its balance sheet is crucial to maintaining its autonomy.

Global Trend:

- Like in India, central banks in both the UK and US decide after consultations with the government. But in Japan, it is the government that decides. By and large, with a few exceptions, the quantum of surplus transfer averages around 0.5% of the GDP.

A radar to predict 'guerilla rains' in Tokyo:

Why in news?

With an eye on the Tokyo 2020 Olympics, Japanese researchers are developing a new system to accurately forecast **torrential downpours known in Japan as 'guerilla rainstorms'** 30 minutes before they strike.
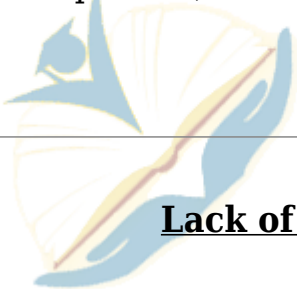
New Developments:

- Scientists have created a **high-tech radar capable of producing a three-dimensional map of a rain cloud in 30 to 60 seconds**. They say this is a significant improvement on existing systems that measure only parts of a cloud in up to five minutes.
- Along with the radar, installed last year at Saitama University, just north of Tokyo, the team is also using **radio waves to estimate the amount of water vapour in the air** to improve their forecasts.
- The waves slow down depending on the volume of vapour in the air, making for a more accurate forecast.

Guerilla Rains:

The phrase "guerrilla rainstorm" first became widely used in Japan in 2008 when a number of fatalities were caused around the country by localized downpours. Guerrilla rainstorms differ from ordinary showers in the strength and volume of the rainfall. Showers often last half an hour or less, whereas guerrilla rainstorms might bucket down 100 millimeter-per-hour rain for over an hour. As urban sewers are generally constructed to handle a maximum of around 50 or 60 millimetres of rain per hour, this quickly leads to flooding. Based on this sort of research and data, some believe that the "heat island" phenomenon is the main cause of guerrilla rainstorms in the Tokyo area.

Early-warning technology in Japan:

- Japan is one of the most seismically active regions in the world and routinely experiences severe natural disasters, including earthquakes, floods and landslides that kill dozens of people every year.
- Because of that, the nation has created sophisticated early-warning technology and disaster mitigation systems, and regularly holds emergency drills in schools.
- Sudden, localised torrential rains can cause killer flash floods, submerge roads in low-lying areas, or overflow drainage systems.
- Organisers of the Tokyo 2020 Olympics and the Rugby World Cup this year have voiced concern that extreme weather phenomena could throw events into chaos.
- In the future, the technology may assist organisers of other outdoor events, like fireworks festivals and sporting competitions, or may result in precise, localised weather services released only in affected towns.

Lack of cleaning in brain cells causes Alzheimer's'

Why in news?

A weakened cleaning system of the brain cells in animals and humans is central to developing Alzheimer's disease, according to a study which may lead to new treatments for the neurodegenerative disorder.

Findings of the study:

- Researchers, including those from the University of Copenhagen in Denmark, found that improving **mitophagy, the cleaning system of the brain cells** nearly removed the symptoms of Alzheimer's in the animals.
- Scientists around the world are still **struggling to understand Alzheimer's** better in order to treat and potentially prevent the development of the debilitating disease in the future. No new medications have been approved in recent years.
- The study, published in the journal *Nature Neuroscience*, may lead to new treatments for the disease by targeting the mitophagy process.
- When the cleaning system does not work properly, there will be an **accumulation of defective mitochondria in the brain cells**. And this may be really dangerous.
- At any rate, the cleaning system is markedly **weakened in cells from both humans and animals with Alzheimer's**. And when we improve the cleaning in live animals, their Alzheimer's symptoms almost disappear.

Cleaning process in brain cells:

- The researchers looked more closely at the cleaning process in brain cells from deceased Alzheimer's patients, in Alzheimer's-induced stem cells, and in live mice and roundworms with Alzheimer's.
- In addition, they also tested active substances targeted at the cleaning process in the animal models.
- It significantly strengthens our results that the cleaning process seems to be important in both human cells and across animal species. It is encouraging that in living animals, we are able to improve the central Alzheimer's symptoms involving memory and learning.
- **Mitochondria live inside cells and can be seen as the cell's energy factories**.
- **Mitophagy breaks down defective mitochondria and reuses their proteins.**

Causes for poor functioning of nerve cells:

- It is known from previous research that **dysfunctional mitophagy is associated with poor function and survival of nerve cells**, but so far, no connection with Alzheimer's has been shown.
- In both Alzheimer's and other states of dementia, there is an

accumulation of the proteins tau and beta amyloid in the brain, leading to cell death.

- In the new animal models, the researchers show that when boosting mitophagy, this accumulation will slow down.
- The researchers believe that their findings indicate that the cleaning process is a potential target for the treatment of Alzheimer's, which should be further investigated. They plan to start clinical trials in humans in the near future.

Price Monitoring & Research Unit

Why in news?

After Kerala, it is now the turn of Punjab and Gujarat to have Price Monitoring & Research Unit (PMRU), set up by the **National Pharmaceutical Pricing Authority (NPPA) i**n collaboration with the Department of Health and State Drug Controller.

About PMRU:

- The government has announced that more States are in the process of setting PMRUs.
- Earlier this year, Kerala became the first State to set up a price monitoring and research **unit to track violation of prices of essential drugs and medical devices under the Drugs Price Control Order (DPCO**).
- PMRU is aimed at **monitoring the notified prices of medicines, detection of violation of the provisions of DPCO** (revised from time to time), pricing compliance and ensuring availability of medicines, among other objectives.
- The units will function under the direct supervision of the State drug controller.

Functioning:

- PMRU scheme had been in the pipeline for quite some time and the draft scheme was ready way back in 2015. According to the draft, in the first year, 90 per cent of the non-recurring expenses and six months'

advance for recurring expenses would be released as first instalment to those States or UTs that desire to set up the PMRUs.

- Meanwhile, for the purpose of staffing and providing the required infrastructure to the PMRU, it has been proposed to categorise States/ UTs into three categories: States/ UTs having population of more than 3% of total population, States/ UTs having population of less than 3% but more than 1% of the total population; and those having a population of less than 1% of the total population.
- PMRU would have to get the audit done annually. Release of further grants would depend upon the performance, actual expenditure and production of utilisation certificate of funds received (duly signed by SDC in the format prescribed by the Government of India for this purpose) in the previous year.

Trial of stem cells to treat spinal cord injuries

Why in news?

A team of Japanese researchers will carry out an unprecedented trial using human-induced pluripotent stem cells (iPS) to treat spinal cord injuries.

About the Trial:

- The team at Tokyo's Keio University has received government approval for the trial which have the potential to develop into any cell in the body to treat patients with serious spinal cord injuries.
- The trial, expected to begin later this year, will initially focus on four patients who suffered their injuries just 14 to 28 days beforehand.
- The team **will transplant two million iPS cells into the spines** of the patients, who will be monitored for a year.

Parkinson's trial

- The announcement comes after researchers in Kyoto said in November, they had transplanted **iPS cells into the brain of a patient in a bid to cure Parkinson's disease.**
- The man was stable after the operation and he will be monitored for two years. The researchers injected 2.4 million iPS cells into the left side of

the patient's brain in an operation that took about three hours.

- **Parkinson's disease is a chronic, degenerative neurological disorder that affects the body's motor system**, often causing shaking and other difficulties in movement.
- **iPS cells are created by stimulating mature, already specialised, cells back into a juvenile state** basically cloning without the need for an embryo.

First private Israel lunar mission

Why in news?

A non-profit Israeli consortium said that it hopes to make history this week by launching the first private aircraft to land on the moon.

About the mission:

- SpaceIL and state-owned Israel Aerospace Industries told a news conference that the **landing craft dubbed** "Beresheet," or Genesis will take off from Florida, **propelled by a SpaceX Falcon rocket** on its weekslong voyage to the moon.
- The spacecraft will slingshot around the Earth at least six times in order to reach the moon and land on its surface on April 11
- If the SpaceIL mission is successful, **Israel will become the fifth country to land a spacecraft on the moon, after the Soviet Union, United States, India and China.**
- SpaceIL has attempted to drum up public excitement for the lunar mission in Israel in recent months, visiting classrooms around the country and sponsoring television advertisements that put Israel on par with global powers.
- The small craft, roughly the size of a washing machine, is equipped with instruments to measure the moon's magnetic field, as well as a copy of the Bible microscopically etched on a small metal disc.

Significance:

- SpaceIL will create a "Beresheet effect" in Israel, akin to the Apollo effect, to promote science among a new generation.
- SpaceIL was founded in 2011 and originally competed for **Google's**

Lunar Xprize, which challenged private companies to try to land a robotic spacecraft on the moon.

- But the $20 million competition was scrapped by the tech giant last year when it became clear none of the five companies would meet a preset deadline.
- The SpaceIL project has ballooned in cost over the years to around $100 million, financed largely by South African-Israeli billionaire Morris Kahn and other donors from around the world.

Petition seeks Perjury Action on Rafale Deal

Why in news?

Former Union Ministers Yashwant Sinha and Arun Shourie and activist lawyer Prashant Bhushan moved the Supreme Court Monday seeking initiation of perjury proceedings against central government officials for allegedly giving "false or misleading" information in a sealed cover in the high-profile Rafale case.

Misleading facts:

- According to the plea from the notes on the ''decision making process'' and ''offsets'', and Judgement of the court based on 'notes' submitted by the government, more than one untruth and suppressions are apparent.
- The plea also gave the details of "misleading facts", as per their opinion, to the court.
- The suppression of information by the government deprived the court of complete facts and it led to dismissal of the PILs, the plea said, adding that the errant officials who misled the court be identified and suitably dealt with.
- Referring to the CAG's audit of the deal, the plea said: "There was no CAG report at the time. The Government misled the court into relying on non-existent fact/report as basis of its observation on pricing in the judgement.
- The government's act of stating "untruth" to the court in a sealed cover on ''pricing'' and its subsequent "scandalous" plea for modification have lowered the "sanctity of judicial proceedings.

- The plea also referred to recent media reports and alleged suppression of "unauthorised parallel negotiations" by the by the PMO and bypassing of the Ministry of Defence and the Indian Negotiating Team (INT).

Perjury and its implications (India)

Perjury is the intentional act of swearing a false oath or falsifying an affirmation to tell the truth, whether spoken or in writing, concerning matters material to an official proceeding.

Section 191 of the IPC states, "Whoever, being legally bound by an oath or by an express provision of law to state the truth, or being bound by law to make a declaration upon any subject, makes any statement which is false, and which he either knows or believes to be false or does not believe to be true, is said to give false evidence."

Section 193 of the IPC adds: "Whoever intentionally gives false evidence in any stage of a judicial proceeding, or fabricates false evidence for the purpose of being used in any stage of a judicial proceeding, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine, and whoever intentionally gives or fabricates false evidence in any other case, shall be punished with imprisonment of either description for a term which may extend to three years, and shall also be liable to fine."

THE HINDU EDITORIALS

Pay people for data

What is the issue?

The raw materials driving today's digital economy are data, leading many to say that data is the new oil. Nowadays, wealth is increasingly built upon information. But this wealth is not percolated to the common people.

Wealth of Information:

- Companies that aggregate and analyse information the fastest accumulate unprecedented power and wealth. For example, social media companies gather and analyse huge amounts of data related to customer behaviour and preferences.
- They use this to build features to ensure that customers constantly browse, and to show customers advertisements that they are most likely to click on. This information translates into huge revenues and profits.
- An overlooked fact is that ordinary people are crucial for companies to create disruptive technologies that earn them billions. Algorithms rely on statistics to make decisions, and it is the people who feed companies the data.

Concentration of wealth:

- Despite this vast amount of data fuelling massive value and wealth creation, the **new digital economy** is increasingly shaping up to be like the feudal or **robber-baron economies** of the past, where wealth was concentrated among a very select few.
- The general public, who predominantly contribute the raw data, get a negligible portion of the pie.
- The digital economy without doubt is **creating jobs** that were previously inconceivable. The roles of a search engine optimisation expert before Google, or a video streamer before YouTube are some examples.
- These new jobs will likely **not be as abundant as the current jobs being eroded due to advancements in artificial intelligence and automation**. This means that the jobs to share the massive wealth created in the digital era are steadily decreasing.

Rising Inequality:

- At present, seven high-technology firms find themselves among the list of the top eight most valuable companies in the world, with a cumulative market capitalisation of almost $5 trillion (almost 2.5 times India's GDP). However, they directly employ fewer than 11 lakh people among them.

What needs to be done?

- These days, the primary discourse during any election in the world is on how to create conditions for a more **equitable distribution of wealth.**

- For this to happen, we need to conceptualise an approach that can remunerate people for their contributions in this digital economy.
- As the primary step, we have to **educate our population** about the value of the data they generate.
- Secondary measures, including **legislative policies**, must be taken to ensure that people can extract their justified pay for their digital activities. Technologies such as blockchain can facilitate nano-payments, proportional to the degree of contribution, and value creation to each individual in the digital space.

Conclusion:

The right redistributive policies can turn this world of technology-driven inequality into one that is truly participatory and egalitarian.

Plight of Sanitation workers

What is the issue?

Sewage pipes and drains represent the bleaker side of India's struggle to modernise its cities. Last month, a sanitation worker, died inside an underground drain in the nation's capital. Called to repair a blocked drain in the Wazirabad area of Delhi, he had no safety kit with him. The details of his death that have appeared in newspapers make for sordid reading: he died of asphyxiation. When he did not come out, the police and fire department were called. They could not find him. It was the National Disaster Response Force that found his body after an eight-hour search. Reports of deaths in similar circumstances appear regularly in the local press in different cities. They attract public attention for a day or two, but fail to sustain it.

Caste and contract work:

- Reports identified died sanitation worker as a 'contract worker'. The meaning of this term has grown and the scope of its use has greatly expanded over recent decades.
- Depending on who your contractor is, you could have a vastly different experience of work under a contract. There was a time when the term

was used only in the context of private sector **employment** because the government alone gave 'permanent' appointments. Economic reforms introduced under liberalisation changed that.

- From the early 1990s, government jobs could also be given on contract. Among sanitation workers, thousands in each major city are serving on contract.
- Few statistics exist to guide in the jungle of norms and procedures governing contractual work. It is also don't known the share of permanent staff in the total sanitation staff in the country.
- What is known for certain is the relation between caste and contract work in the sphere of sanitation. Sanitation workers on contract mostly belong to the Scheduled Caste (SC) category.
- Surveys indicate a small proportion of other castes in permanent sanitation staff. It is also reported that these non-SC permanent functionaries often get proxy workers from SC backgrounds to do the actual work.
- So, the bond between caste and work continues to be strong decades after B.R. Ambedkar had analysed and highlighted it.

Case of sanitation workers:

- In the case of sanitation, contract work means gross vulnerability and exploitation.
- The terms of contract are minimalist, and a contractor feels free to enhance his own share of the contract with impunity, by nibbling away the worker's share.
- Though the government is supposed to regulate the functioning of this contract, it does not show much active interest in doing so.
- It has been following the general policy of privatisation as a matter of faith, without putting in the effort it takes to work out the details for different sectors and departments.
- The realisation that one solution does not solve every problem is absent. Such a realisation is also unpopular, especially among people who present themselves as the gurus of efficiency.
- A tacit pact guides their relations with the bureaucracy. Hardly any politician in office has the time or the inclination to disturb this pact and force both sides the efficiency gurus and the civil servants to take stock of different nooks and crannies of the vast apparatus of the state.
- Decline in efficiency and quality of different services is quite apparent to the public, but it is flatly denied by political leaders, civil servants and consultants.

Quality of work in contractual system:

- They also deny the urgency of reviewing the working of the contractual system in areas directly related to welfare, such as sanitation, health and education.
- Little attempt has been made to study how contractual work has affected reliability in the postal services, railways and accounts.
- Even in functions such as data gathering, which are crucial for economic planning and decisions, the contractual workforce has proved detrimental to quality.
- In many spheres, contractual appointments do not involve a private contractor, but that makes little difference to the quality of work done.

Case of education:

- In education, for instance, many State governments have been hiring teachers on contract. Their service conditions are totally different from those serving as permanent staff, yet they are expected to deliver higher quality in teaching.
- The mantra upholding this expectation is that contractual teachers will work harder because they are insecure.
- In State after State, this mantra has not borne fruit, but no one wants to acknowledge that. Nor do governments want to admit that contractual work in professions such as teaching discourages motivation to improve one's performance.
- The reason is that contractual functionaries see no definite prospect of a career or future in the same profession. Also, their wage is much too small to sustain the growth of substantial professional commitment.

Lack of awareness:

- The case of sanitation workers on contract is worse. They work for small-time contractors who have absolutely no idea of the role of a sanitation worker.
- The contractor feels free to exploit the worker, conveniently hopping over whatever barriers and checks, including digital devices, that the government attempts to use for providing financial security to the worker.
- The government in the case of sanitation, it is often the municipality shows little sustained interest in imposing stringent norms for provision of equipment, including those for safety, necessary for sewer cleaning.
- As for training, no one seems to believe that sanitation involves complex

work, requiring both knowledge and training.

- Such a thought is fully precluded by the strong and enduring bond that exists between caste and sanitation.

Conclusion:

Sanitation campaigns do not articulate an acknowledgement of the relationship between the caste system and cleaning jobs. An ideological barrier prevents such articulation. The media too does not highlight the connection between caste and cleaning. That is why whenever sanitation workers die in underground drains, the news simply passes into unsorted history.