

Abhimanu

Weekly current affairs Series

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Abhimanu's IAS Study Group

Chandigarh

Cryptocurrencies are a Ponzi scheme

- India's finance ministry cautioned investors about the risks of trading in cryptocurrencies such as bitcoin, saying digital currency investments are like "Ponzi schemes."
- Cryptocurrencies are not legal tender and have no regulatory permission or protection in the country.
- The spurt in the prices of Bitcoin and other cryptocurrencies seems to have rung an alarm bell, with the Finance Ministry expressing concern and likening them to Ponzi schemes.

What is a Ponzi scheme?

- A Ponzi scheme is an investment fraud that involves the payment of purported returns to existing investors from funds contributed by new investors. Ponzi scheme organizers often solicit new investors by promising to invest funds in opportunities claimed to generate high returns with little or no risk. In many Ponzi schemes, the fraudsters focus on attracting new money to make promised payments to earlier-stage investors to create the false appearance that investors are profiting from a legitimate business.

About Cryptocurrency:

- Cryptocurrency is a form of digital money that is designed to be secure and, in many cases, anonymous.
- It is a currency associated with the internet that uses cryptography, the process of converting legible information into an almost uncrackable code, to track purchases and transfers.
- Cryptography was born out of the need for secure communication in the Second World War. It has evolved in the digital era with elements of mathematical theory and computer science to become a way to secure communications, information and money online.
- The first cryptocurrency was bitcoin, which was created in 2009 and is still the best known. There has been a proliferation of cryptocurrencies in the past decade and there are now more than 900 available on the internet.
- Cryptocurrencies use decentralised technology to let users make secure payments and store money without the need to use their name or go through a bank. They run on a distributed public ledger called blockchain, which is a record of all transactions updated and held by currency holders.
- Units of cryptocurrency are created through a process called mining, which involves using computer power to solve complicated maths problems that generate coins. Users can also buy the currencies from brokers, then store and spend them using cryptographic wallets.
- Cryptocurrencies and applications of blockchain technology are still nascent in financial terms and more uses should be expected. Transactions including bonds, stocks and other financial assets could eventually be traded using the technology.

The Prevention of Torture Bill, 2017

- The Prevention of Torture Bill, 2017 has been introduced in the Parliament as a private member's bill.

Highlights of the Bill:

- The proposed standalone anti-torture law directly makes the state responsible for any injury inflicted by its agents on citizens.
- It provides a wide definition to torture including inflicting physical, mental or psychological injury.
- Punishment for torture, ranging from fine to life imprisonment has also been recommended.
- It provides for a presumption that injuries of any person in police custody is inflicted by the police action, unless proven otherwise.
- Courts have been envisioned to provide a justiciable compensation for victims of torture.

Analysis:

- Human rights advocates would now be better equipped to pressurise the government to recognize torture as a separate crime.
- So far, neither the 'Indian Penal Code - IPC' nor the 'Code of Criminal Procedure - CrPC' addresses custodial torture.
- While India had signed the 1997 convention, it hasn't ratified it yet.
- Ratification would help overcoming the difficulties in extraditing criminals from abroad.
- The proposed legislation fulfils India's commitment, as confirmed to the United Nations, that "torture and other cruel, inhuman or degrading treatment or punishment" are prohibited and constitute serious violations of human rights.
- India is one of only eight countries out of 170 signatories to the United Nations convention against torture and other inhuman treatment or punishment yet to ratify it.
- India has signed the UN Convention against torture way back in 1997. But, it has still not ratified it. The Convention defines torture as a criminal offence. The Convention requires states to take effective measures to prevent torture in any territory under their jurisdiction, and forbids states to transport people to any country where there is reason to believe they will be tortured.

Parliament Session: 2017

- The proceedings of Parliament in the current session have been regularly disrupted. Last year, demonetisation and other issues derailed the entire Winter Session.
- While disruption of proceedings has been common in recent years, Parliament's functioning in 2017 was different in some respects. The Houses had a productive Budget Session, and some work could be achieved in the Monsoon Session. State elections delayed the Winter Session.

Important highlights:

- Parliament worked for fewer days than the annual average since 2000. By the end of this month, Parliament would have worked for 57 days, short of the average 70 days during this period. The last time Parliament met for fewer days (in a non-general election year) was in 2008, when it met for 46 days during the 14th Lok Sabha.
- In 2017, Parliament discussed 34% of the government's expenditure — this was the second highest proportion of total expenditure discussed by Parliament over the last decade.
- There were three key changes in the Budget process: it was presented on February 1 instead of the usual last day of February; the Railway Budget was merged with the Union Budget, discontinuing a 92-year-old practice; and the Plan and non-Plan classifications of expenditure were removed.

- The government was successful in getting some key Bills approved by Parliament. Four bills passed in April operationalised the Goods and Services Tax (GST) regime.
- In February, a Bill removing the guarantee of the government to honour demonetised currency notes was passed by Lok Sabha. In August, the government was successful in pushing through a Bill empowering the Reserve Bank to give directions to banks for the resolution of their non-performing assets.
- In March, Parliament passed a Bill increasing maternity leave for women from 12 weeks to 26 weeks. It also passed a Bill in the same month to protect the rights of persons with mental illness, and promote their access to mental healthcare.
- In April, a legislative proposal pending since 2014, prohibiting discrimination against HIV positive individuals, was passed by both Houses. In the ongoing Winter Session, a bill giving 20 Indian Institutes of Management the power to grant degrees was approved by Parliament.
- However, it was not all smooth sailing for the government in Parliament. The Opposition in Rajya Sabha scored a legislative victory in July when it forced the amendment of a key provision of a Bill giving constitutional status to the National Commission for Backward Classes (NCBC).
- A casualty of the disruptions was Question Hour. During the Budget Session, Lok Sabha worked for 108% of its scheduled time, and Rajya Sabha for 86%. During the Monsoon Session, this fell to 67% for Lok Sabha and 72% for Rajya Sabha. In the first week of the Winter Session, this number fell further to approximately 50% and 36% for the two Houses respectively.

BND-4201

- India's first home-grown high purity gold reference standard – the Bharatiya Nirdeshak Dravya (BND-4201) – was launched.
- India now has its own standard bar of gold that is 99.99% pure and can be used to verify the purity of gold sold in shops
- Gold reference standard is indispensable in gold and jewellery hall marking.
- India Government Mint (IGM), a unit of Security Printing and Minting Corp of India Ltd, signed an agreement with the Bhabha Atomic Research Centre (BARC) and CSIR-National Physical Laboratory (NPL) to develop the first gold standard.
- The NPL is the repository of standard units — such as the kilogram, the second, the centimetre — in India and provides calibration services. So far, 200 gold bars — each 35mm long, 15 mm wide and 1.5mm thick — have been made.
- The Department produces Standard Gold Bars of standard fineness and purity of 10g, 50g, 100g, 500g & 1000g denominations.

Analysis:

- Development of this reference material indigenously will add to the Make in India campaign and will save foreign exchange as well as minimise dependency on foreign countries.
- India despite being second largest markets for gold after China, goldsmiths in the country were depended on imported reference gold bars (mostly imported was sourced from Canada and Switzerland) to check purity of their biscuits, coins and jewellery. .BND-4201 standard reference material will help to minimise dependency on foreign countries and add to Make in India campaign, saving foreign exchange.
- The BND-4201 standard gold bar are 25% cheaper than the imported version. It will also help jewellers to move towards more instrumental methods rather
- than conventional fire assay methods for testing purity of gold, which time consuming and non-environment friendly as poisonous gases are released.
- This will also be useful for Collection and Purity Testing Centres to certify the purity of gold deposits under the gold monetisation scheme.

- According to the World Gold Council, demand in India jumped 19% to \$3.62 billion (approx. ₹19,000 crore) this quarter, with volumes up 16% to 92.3 tonnes.

The Indian Institute of Petroleum and Energy Bill, 2017

- The Parliament has passed The Indian Institute of Petroleum and Energy (IIPE) Bill, 2017 after it was adopted by Rajya Sabha.

Main highlights of the bill:

- **Institution of national importance:** The Bill establishes the Indian Institute of Petroleum and Energy, Vishakhapatnam, Andhra Pradesh. It declares the Institute as an institution of national importance. The Institute aims to provide high quality education and research focussing on the themes of petroleum, hydrocarbons and energy.
- **Authorities of the Institute:** The key authorities of the Institute are as follows: (i) the General Council; (ii) the Board of Governors; (iii) the Senate; and (iv) any other authorities declared by the statutes.
- **Composition and powers of the Board of Governors:** The Board of Governors will comprise 13 members including: (i) the President (to be appointed by the central government); (ii) the Director of the Institute; (iii) two persons from the Board of Directors of companies that contribute to the Institute's endowment fund (to be nominated by the central government); (iv) five eminent experts in the field of petroleum technology and energy; and (v) two professors of the Institute.
- **Powers of the Board of Governors include:** (i) instituting courses of study and laying down standards of proficiency and other academic distinctions; (ii) considering proposals for taking loans for the Institute; (iii) creating academic, administrative, technical and other posts; and (iv) fixing fees and other charges.
- **Composition and powers of the General Council:** The Council will comprise up to 20 members including the: (i) Secretary, Ministry of Petroleum and Natural Gas (Chairman); (ii) Chairman, Indian Oil Corporation Limited; (iii) Secretary, Oil Industry Development Board; and (iv) Principal Advisor (Energy), NITI Aayog.
- **The powers of the Council include:** (i) reviewing the broad policies and programmes of the Institute; (ii) advising the Board with respect to new technologies in the domain of energy and hydrocarbon development; and (iii) suggesting improvements in fiscal management of the Institute.
- **The Senate:** The Senate is the principal academic body responsible for the maintenance of standards of instruction, education and examination in the Institute.
- **Appointment of the Director:** The Director of the Institute will be appointed by the central government. The Director will be the principal academic and executive officer of the Institute.
- **Funding:** The Institute will be required to maintain a fund which will be credited with the funds that it receives from the central government, fees and money received from any other sources (grants and gifts). The accounts of the Institute shall be audited by the Comptroller and Auditor- General of India.
- **Settlement of disputes:** Any dispute arising out of a contract between the Institute and any of its employees will be referred to an internally constituted Tribunal of Arbitration. The Tribunal will consist of: (i) one member appointed by the Institute; (ii) one member nominated by the employee; and (iii) an umpire appointed by the Visitor (President of India). The decision of the Tribunal of Arbitration will be considered final.
- In case of any dispute between the Institute and the central government, the decision of the central government will be considered final.

India's first pod taxi network

- Indian government is all set to begin work on India's first pod taxi service in Gurgaon by this month-end.
- The first phase will include a pilot project covering 13-km stretch from Gurgaon-Delhi border to Badshapur Mod with 16 stations.
- The Transport ministry has earmarked Rs850 crore for the pilot project. The ropeway-like system runs on electricity and driverless pods and comes down at designated stations, thus removing the traffic burden from already congested roads.

- The capital cost of metrino is Rs50 crore per km against Rs250 crore per km of the metro.

About Personal rapid transit:

- Personal rapid transit (PRT), also known as pod cars or pod taxis, is a public transport system developed for travelling swiftly in congested areas.
- They operate much like the traditional rail and streetcar network and are built above busy roads and highways.
- They are automated driverless vehicles and can carry four to six people in at a time.
- Pod-taxis are futuristic transport concept which is environment-friendly and can be run on solar power and other renewal power, bringing down pollution in densely populated areas. According to one estimate, a solar powered pod-taxi could cost one-tenth of an ordinary running car.
- The first pod-taxis were run at West Virginia University (WVU) in the 1970s. The other cities where pod-taxis are currently operating are Masdar City, Abu Dhabi running on CyberCab system known as METRINO and London's Heathrow airport. It covers a distance of 3.8 kilometres operational since 2011. The average speed of pods is 60 km per hour.
- There are numerous PRT systems that were proposed, but they didn't get implemented. In India, around six states are looking to add pod taxis in some big cities to decongest traffic.

FAME (Faster Adoption and Manufacturing of Hybrid and Electric vehicles in India) II

- The Centre is targeting a fully electric fleet for country's public transport, including buses, taxis and auto-rickshaws under the second phase of FAME India scheme. This move is mainly aimed at reducing pollution in the country.
- The pilot phase or phase I of the Faster Adoption and Manufacturing of Hybrid and Electric vehicles in India (FAME India) was launched by the government in 2015, which expires on March 31, 2018. Thereafter, the phase II will be launched.

About FAME India scheme:

- FAME India – Faster Adoption and Manufacturing of Hybrid and Electric vehicles in India – is a part of the National Electric Mobility Mission Plan.
- The scheme has four focus areas, technology development, demand creation, pilot projects and charging infrastructure.
- The scheme envisages Rs 795 crore support in the first two fiscals starting with the current year.
- It is being administered by the Heavy Industries Ministry.

National Register of Citizens

- The Assam government has released the first draft of National Register of Citizens (NRC) which declared 1.9 crore people of total 3.29 crore applicants as legal citizens of India.
- The rest of the applications are undergoing verification and the complete list will be within 2018.

What is National Register of Citizens (NRC)?

- The NRC was introduced to identify illegal immigrants from Bangladesh and recognise the Indian citizens in Assam. It was first prepared in 1951 and Assam is the only state having this arrangement.
- Under NRC, immigrants who have documents proving that they entered Assam before 1971 will be considered Indian citizens and others have to show that they their ascendants have lived in Assam even before 1971.
- The demands to update the NRC of 1951 were first raised by the All Assam Students' Union (AASU) and Assam Gana Parishad more than three decades ago. The organisations had submitted a memorandum to the Centre on January 18, 1980, two months after launching the anti-illegal foreigners Assam Movement.

- On November 17, 1999, at an official-level tripartite meeting to review the implementation of the Assam Accord, a decision was taken that the NRC would be updated and the Centre sanctioned Rs 20 lakh for the purpose and released Rs 5 lakh of it to start the exercise.
- Later, Prime Minister Manmohan Singh led government took the final decision to update NRC on May 5, 2005. Thereafter, the government created a directorate for updating the NRC and the process of computerisation of the voters' list up to 1971 and the NRC of 1951 began.

No free conversion of PIO cards to OCI cards

- The Govt has stopped the scheme of free conversion of PIO cards to OCI. The scheme of converting the Person of Indian Origin (PIO) cards to OCI cards free of cost comes to an end as a decision has been taken not to give any more extension beyond December 31.
- However, the change of PIO cards to OCI cards would continue payment of fees.
- The home ministry had extended the deadline on four earlier occasions. The PIO card was first implemented in 2002 as a benefit to foreign nationals who could establish at least a third generation tie to Indian origin. The PIO card was valid for travel, work, and residence in India for a period of 15 years. The OCI card was implemented in 2005, carried more expansive benefits than the PIO card, and was valid for the holder's lifetime.

About OCI:

- An Overseas Citizen of India is a lifetime visa status. It is the closest thing to dual citizenship that India offers.

Who can be an OCI?

- A person who used to be an Indian citizen
- A person with at least one parent, grandparent, or great-grandparent who is/was an Indian citizen
- A person married to an Indian citizen or an existing OCI for at least two continuous years

The following groups of people cannot have OCI status:

- Anyone who was ever a citizen of Pakistan or Bangladesh
- Anyone whose parents or grandparents were citizens of Afghanistan, Pakistan, Bangladesh, China, or Sri Lanka
- Anyone who served in a foreign military or worked in a foreign defense department

Analysis:

- Simultaneous existence of PIO and OCI cards led to confusion among People of Indian Origin residing abroad. Thus, merging PIO and OCI will lead to simplification of the rules under a single umbrella. It would facilitate visa-free travel to India, rights of residency and participation in business and educational activities in the country. This is aimed at simplifying the visa-free entry for people of Indian origin into India.
- The merger of the two cards could make PIO cardholders eligible for benefits already enjoyed by OCI cardholders. Merging of the two cards will also facilitate travel of Indians staying abroad and their participation in various activities in India.

India pledges \$25 million for Myanmar's Rakhine to help refugees return

- India will provide Myanmar with \$25 million for development projects including prefabricated houses in troubled Rakhine state to enable the return of Rohingya Muslims who have fled the area. A memorandum of understanding to support development of Rakhine and help create jobs was recently signed.
- This support is intended to help the Government of Myanmar achieve its objective of restoration of normalcy in Rakhine State and enable the return of displaced persons.
- Under this MoU, Government of India proposes to take up, among others, a project to build prefabricated housing in Rakhine State so as to meet the immediate needs of returning people. Besides housing, the proposals include building schools, healthcare facilities and building bridges and roads.

About Myanmar's communal violence

- Over the last two years accusations of sexual assault and local disputes have created a flashpoint for violence that has quickly escalated into widespread communal clashes.
- The first and most deadly incident began in June 2012 when widespread rioting and clashes between Rakhine Buddhists and Muslims, largely thought to be Rohingya Muslims, left 200 dead and displaced thousands. It was the rape and murder of a young Buddhist woman which sparked off that deadly chain of events.

Who are the Rohingyas?

- Rohingyas are often said to be the world's most persecuted minority. They are an ethnic Muslim group in the majority Buddhist country and make up around one million of the total 50 million population.
- They hail from the country's northwest and speak a Bengali dialect. Almost all live in Rakhine, one of the poorest states, with a population of three million.
- About 140,000 Rohingyas in the Rakhine state live in ghetto-like camps that they can't leave without government permission.
- They are not regarded as one of the country's 135 official ethnic groups and are denied citizenship under Myanmar's 1982 Citizenship Law, which effectively renders them stateless.
- To get citizenship, they need to prove they have lived in Myanmar for 60 years, but paperwork is often unavailable or denied to them. As a result, their rights to study, work, travel, marry, practise their religion and access health services are restricted.
- Myanmar views its Rohingya population as illegal Bangladeshi immigrants.
- Since 2012, the UNHCR estimates that more than 110,000 people, mostly Rohingyas, left on flimsy boats to countries such as Thailand, the Philippines and Malaysia.

UN imposes new sanctions on North Korea

- The UN Security Council unanimously adopted a new set of US-drafted sanctions on North Korea that will further strangle its energy supplies and tighten restrictions on smuggling and the use of North Korean workers overseas.

Key provisions of the new sanctions:

- The import of refined oil products, including diesel and kerosene that are key to North Korea's economy, is capped at 500,000 barrels a year. That represents a reduction from the 4.5 million barrels North Korea imported in 2016, and a cap of 2 million barrels in September's resolutions. And it means the North's refined oil imports have been cut by 90 percent.
- The import of crude oil is capped at 4 million barrels a year and countries supplying oil are required to provide quarterly reports to the Security Council committee monitoring sanctions on North Korea.

- North Korea is banned from exporting food and agriculture products, machinery, electrical equipment, earth and stones, wood and vessels — and all countries are banned from importing these items.
- All countries are banned from exporting industrial machinery, transportation vehicles, iron, steel and other metals to North Korea.
- All countries must expel North Korean workers and safety monitors by the end of 2019. The resolution expresses concern that earnings from these workers are being used to support the country's nuclear and ballistic missile programs. According to the U.S. Mission, there are nearly 100,000 overseas North Korean workers, with about 50,000 in China and 30,000 in Russia.
- U.N. member states are authorized to seize, inspect and impound any ship in their ports or territorial waters suspected of being involved in illegal smuggling and evasion of U.N. sanctions. The resolution expresses "great concern" that North Korea is illegally exporting coal and other prohibited items "through deceptive maritime practices and obtaining petroleum illegally through ship-to-ship transfers."
- All countries are banned from providing insurance or re-insurance to North Korean-affiliated ships believed to be involved in illegal smuggling and sanctions evasion and are required to de-register these vessels.

SCIENCE AND TECHNOLOGY

LiDAR (Light Detection and Ranging)

- The Central Pollution Control Board is planning to use advanced LiDAR (Light Detection and Ranging) devices to vertically monitor the air quality of Delhi-NCR.

What is LIDAR?

- LiDAR is an acronym for 'light' and 'radar,' a tool developed to detect targets and to use reflected light from objects as a kind of visual sonar.
- LiDAR uses UV light and light close to infrared on the spectrum to target certain objects and analyze their distances based on the refraction of light that is bounced back. The theory is that objects of varying shapes, sizes, densities and distances will reflect light back at different speeds and thus create a high-resolution map of the surroundings.
- LiDAR is used to create incredibly detailed maps in addition to assisting researchers in the fields of geography, archeology, geology, seismology, atmospheric sciences, laser studies, and much more.
- LIDAR projects laser beams towards the sky. Subsequently, the interplay of light with the objects falling on its path through absorption, reflection, scattering help determine the composition of particulates by studying the wavelengths.
- It becomes easier to pinpoint the source of pollutants through this technique. So far India has seven stations along its eastern and western borders under a similar project, an offshoot of the Male declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia.
- The devices may also help determine the trajectory of the pollutants present in the upper layers of the atmosphere, which are not always possible through the conventional surface-level monitoring.
- A team of CPCB scientists have found that air-borne particles from the salt mines of Afghanistan are pushing up the levels of air pollutants, especially PM2.5, in Delhi. Winds are carrying the salt particles from those areas of Afghanistan which have large salt pans.

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Arunachal declared open defecation-free State

- Arunachal Pradesh has emerged as the second State in the Northeast, after Sikkim, to be declared Open Defecation Free. Arunachal has 21 districts and the State attained the feat much before the national deadline of October 2, 2019.

- Arunachal Pradesh has managed to do this before the deadline of October 2, 2019. The state government had cut short the national ODF target by one year and ten months ahead of the national target and set 31 December, 2017, as the final target to achieve ODF status in Arunachal Pradesh.

About Swachh Bharat Mission:

- The core intent of the Swachh Bharat Mission is to make India open defecation free by 2019. Keeping public spaces clean, constructing and maintaining both individual and community toilets are all part of the 'Swachh' agenda.
- Though the Swachh Bharat Mission found mention in the Prime Minister's Independence Day speech, it was formally inaugurated with much fanfare on October 2, 2014, Mahatma Gandhi's 145th Birth anniversary.
- The Swachh Bharat Mission (Gramin) is the successor of the erstwhile Nirmal Bharat Abhiyan (NBA). The aim of the NBA, earlier known as the Total Sanitation Campaign, was to make India open defecation free by 2017.

Components of Swachh Bharat

- The Swachh Bharat Mission is split into two sub-Missions - Swachh Bharat Mission (Gramin) and Swachh Bharat Mission (Urban). While the Union Ministry of Drinking Water and Sanitation is the nodal agency for the rural mission, the Ministry of Urban Development will take care of the budgetary concerns of the urban component.
- Keeping the needs of the rural populace in mind, 1.34 lakh crore rupees has been earmarked for the rural mission, compared to the Rs. 62,009 crore budget for the urban mission.
- Apart from this, the mission will also be supported through the Swachh Bharat Kosh while is set up to channelize philanthropic contributions for the cause, Corporate Social Responsibility (CSR) contributions and funding from other multilateral sources.
- Swachh Bharat Mission for Urban Areas: The focus is on establishing close to 2.6 lakh individual toilets and 2.5 lakh community toilets across 4,401 towns and cities in India. Eradicating manual scavenging and improved municipal solid waste management is part of the agenda.
- Swachh Bharat Mission – Gramin: Gram Panchayats and Zilla Parishads will work on war footing to make sure that all households in all villages have functional water supply and toilet facilities. Productive use of night soil as bio-fertilizers is also on the cards.

Analysis:

- From the Central Rural Sanitation Programme of the 80's to the Nirmal Bharat Abhiyan of the previous UPA regime, sanitation and water supply schemes have managed to capture and hold the attention of the governments, both at the centre and the state level. Despite being a national obsession, most schemes have come and gone with very little to show on the ground.
- Census 2011 revealed that only 30.7% of households in rural areas had access to toilets. A 2008 UNICEF study sets the number even lower at a mere 21%. India tops the list of countries with the maximum number of people defecating out in the open.
- The TSC and NBA's central goal was to improve the toilet coverage in the country. In the past decade, the increase in toilet coverage across India has just been 1% per year.

Parker Solar Probe mission

- NASA is going to launch Parker Solar Probe in 2018 to explore the sun's outer atmosphere. It will be launched onboard of Delta IV Heavy launch vehicle. It will perform its scientific investigations in a hazardous region of intense heat and solar radiation..

About Parker Solar Probe mission:

- Primary goals of mission: Trace how energy and heat move through solar corona. Explore what accelerates solar wind as well as solar energetic particle.
- It is NASA's planned robotic spacecraft to probe outer corona of Sun. It has been designed and built by Johns Hopkins University Applied Physics Laboratory. It is named after solar astrophysicist Eugene Parker. This is first time NASA spacecraft named after living person.

- The spacecraft is designed to endure harsh environment near Sun, by approaching within 8.5 solar radii (5.9 million kilometers) to 'surface'(photosphere) of Sun where incident solar intensity is approximately 520 times intensity at Earth orbit. It will be protected by solar shadow-shield shadow-shield made of reinforced carbon-carbon composite....
- The spacecraft systems and scientific instruments are located in central portion of shield's shadow where direct radiation from Sun is fully blocked. The primary power for mission is dual system of solar panels (photovoltaic array).

Why do we study the sun and the solar wind?

- The sun is the only star we can study up close. By studying this star we live with, we learn more about stars throughout the universe.
- The sun is a source of light and heat for life on Earth. The more we know about it, the more we can understand how life on Earth developed.
- The sun also affects Earth in less familiar ways. It is the source of the solar wind; a flow of ionized gases from the sun that streams past Earth at speeds of more than 500 km per second (a million miles per hour).
- Disturbances in the solar wind shake Earth's magnetic field and pump energy into the radiation belts, part of a set of changes in near-Earth space known as space weather.
- Space weather can change the orbits of satellites, shorten their lifetimes, or interfere with onboard electronics. The more we learn about what causes space weather – and how to predict it – the more we can protect the satellites we depend on.
- The solar wind also fills up much of the solar system, dominating the space environment far past Earth. As we send spacecraft and astronauts further and further from home, we must understand this space environment just as early seafarers needed to understand the ocean.

QUICK FACTS

- According to Ookla's November Speedtest Global Index, Rank of India in mobile internet speeds is: **109th**
- National Mathematics Day is observed on: **22 December**
- Good Governance Day is observed on: **25 December**
- The 2018 edition of Indian Science Congress will be held in : **Imphal**.
- World's first female ambassador to Saudi Arabia: **Dominique Mineur**
- Newly elected President of Liberia: **George Weah**