



ESSENTIAL FACTS

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53/5, First Floor, Old Rajinder Nagar

Contact: 011-49789720, 9990356664, 7840048445

(E-mail-info@chromeias.com, Website- <http://chromeias.com>)

Essential Facts is the collection of most important news which is relevant for Civil Services Preliminary Examination. Chrome IAS firmly believes that this compilation will be helpful for the aspirants and will add on to their existing knowledge base.

Rig-Veda brilliantly sums up the essence of the process of preparation in a single quote, wherein it says, “Let noble thoughts come to us from all directions”. Chrome IAS is gradually trying to become a major stakeholder in the journey of becoming a civil servant.

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ECONOMY

SRO

- Markets regulator Sebi proposed amendments to norms governing Self Regulatory Organisations.
- It said that an SRO would be defined as an organisation of intermediaries or an entity promoted by a stock exchange, recognised by the board.
- A Self Regulatory Organisation (SRO) is considered as the first level regulator.
- The SRO shall provide for a dispute resolution mechanism including arbitration to settle disputes between investors and its members and disputes between its members.
- Among other criteria, eligibility criteria for an entity to be recognised as an SRO includes that its minimum net worth shall be Rs 1 crore.

GST

- Goods and Services Tax collections in March 2019 hit ₹1.06 lakh crore, the highest in the history of the tax in India,
- This is the fourth time monthly collections have crossed ₹1 lakh crore this year.
- These figures indicate that the revenue growth has been picking up in recent months, despite various rate rationalisation measures.

Manufacturing Growth

- India's manufacturing activities slowed down to a six-month low in March.
- The Nikkei India Manufacturing Purchasing Managers' Index (PMI) slipped from 54.3 in February to 52.6 in March.
- A figure above 50 signals expansion while a reading below that level points to contraction.
- The index is based on data collated from monthly replies to questionnaires sent to purchasing executives in over 400 industrial companies.

Interest Rate

- The Reserve Bank of India (RBI) has decided to put on hold its proposal to link interest rates on deposits and short-term loans to an external benchmark like the Repo rate or Treasury Bill.
- The move to link interest rates to an external benchmark was aimed at increasing transparency and speeding up transmission of rate cuts.
- State Bank of India had recently announced its plan for linking interest rates on savings accounts to the Repo rate.
- Currently, banks follow the marginal cost of lending rate (MCLR) formula where rates are linked to cost of their funds and are reset in different intervals such as one month, six months to one year.

India's Imports

- India's imports from China stood at \$60 billion during the April-January period of 2018-19 fiscal, a deceleration of 5% over the corresponding period a year ago.
- India's trade deficit with China also eased to \$46 billion in April-January 2019 from \$53 billion in the same period a year ago.
- India has seen a major breakthrough in its exports to China during the last few months, whereas imports of Chinese products in India are decelerating.

GDP

- India is expected to become the third-largest economy in the world by 2030 with the gross domestic product (GDP) touching \$10 trillion, helped by consumption and investment growth.
- Currently, the size of the economy is about \$2.9 trillion.
- 2011 Census showed that 21.9% of India's population lived below the poverty line.

FPI

- The country's foreign exchange reserves rose to a ten-month high of \$412 billion.
- Record foreign portfolio investment (FPI) inflows and a \$5 billion rupee-dollar swap window by the central bank added to the forex kitty.
- Forex reserves are now highest since \$413 billion recorded in June, 2018.

- While forex reserves had hit a high of \$426 billion in April 2018, it witnessed a steady slide over the following months.
- It went down to \$392 billion in on account of the RBI intervention to manage the rupee, which slipped to all time lows in October 2018 following sharp rise in crude oil prices and outflows by foreign institutional investors.
- The appreciating rupee also increases returns on foreign investors pumping money in Indian markets, as it helps boost their returns in dollar terms.
- A rupee-dollar swap by the RBI last month also added to the forex reserves. In order to inject rupee liquidity, the RBI on March 26 conducted an auction to buy \$5 billion from the market and simultaneously sell it back to the same counterparties effective March 2022.
- The amount of dollars that has been mopped up via these operations will reflect in the banking regulator's foreign exchange reserves for the tenor of the swap while also reflecting in RBI's forward liabilities.

World Bank

- India's GDP growth is expected to accelerate moderately to 7.5% in fiscal year 2019-20, according to the World Bank.
- The GDP growth will be driven by continued investment strengthening — particularly private — improved export performance and resilient consumption.
- The real GDP growth is estimated at 7.2% in 2018-19.

Currency Chests

- The Reserve Bank of India came out with guidelines for banks to set up new currency chests, which include minimum area of 1,500 square feet for strong room.
- Area of the strong room/ vault of at least 1,500 sq ft. For those situated in hilly/ inaccessible places, the strong room/ vault area of at least 600 sq ft.
- Besides, the new chests should have a processing capacity of 6.6 lakh pieces of banknotes per day. For those situated in the hilly/ inaccessible places, capacity of 2.1 lakh pieces of banknotes per day.
- Earlier, a RBI appointed committee had recommended that the apex bank should encourage banks to open large currency chests with modern facilities and Chest Balance Limit (CBL) of at least Rs 1,000 crore.
- As per the RBI's annual report of 2017-18, the currency management infrastructure consists of a network of 19 issue offices of the Reserve Bank, 3,975 currency chest

and 3,654 small coin depots of commercial, co-operative and regional rural banks spread across the country.

IMF

- The International Monetary Fund (IMF) has projected that global growth will be 3.3% in 2019, down from 3.6% in 2018 and 4% in 2017 in its report World Economic Outlook.
- This lower projection is due to a slower global expansion in the second half of 2018 caused by U.S.-China trade tensions, macroeconomic stress in Turkey and Argentina, tighter credit policies in China and financial tightening, apart from a normalisation of monetary policy in advanced economies.
- India's growth is projected to pick up, from 7.1% in 2018, to 7.3% in 2019 and 7.5% in 2020, supported by the continued recovery of investment and robust consumption amid a more expansionary stance of monetary policy and some expected impetus from fiscal policy.

Gold Reserves

- India has marginally increased its gold holding while maintaining the tenth position among countries in terms of yellow metal reserves, as per latest data from the World Gold Council (WGC).
- As per WGC, India had total gold reserves of 608.7 tonnes.
- India's overall ranking is pegged at 11 as the International Monetary Fund (IMF) boasts of gold reserves of 2,814 tonnes to occupy the third position after the U.S. (8,133.5 tonnes) and Germany (3,369.7 tonnes).

Direct Tax

- The government is estimated to have witnessed a shortfall of Rs 50,000 crore in direct tax collection target of Rs 12 lakh crore for 2018-19.
- Direct tax collection for 2018-19 is around Rs 11.5 lakh crore.
- The government had revised the direct tax collection target upwards to Rs 12 lakh crore from the original Budget Estimate of Rs 11.5 lakh crore for 2018-19.

Honeypot

- Cybercriminals attempted attacks on a cloud server honeypot more than 6,78,000 times in a month.
- There are a total of 10 honeypots placed globally in different regions.
- A honeypot is a system intended to mimic likely targets of cyberattackers for security researchers to monitor cybercriminal behaviour.

Blue

- Scientists have developed a robot that uses artificial intelligence (AI) to master intricate human tasks, and could one day help you fold laundry or make a cup of coffee at home.
- Blue, the human-friendly robot built by the U.S., can learn human tasks, while being safe enough for every home to have one.

Tobacco

- Global cigarette sales in 2017 stood at \$700 billion, the World Health Organisation (WHO) said.
- It is the amount was 250 times more than what the international organisation needed to protect human health.
- It is estimated that tobacco use (smoking and smokeless) is currently responsible for the death of about six million people across the world each year.
- Despite accounting for 17% of the world population, tobacco consumption in the form of cigarettes in India is less than 2% of global consumption.

FMPs

- An FMP (Fixed Maturity Plan) is one of the debt products that are offered to many first-time investors looking for an alternative to fixed deposits because they are tax efficient.
- FMPs are closed end debt funds with a maturity period that can range from one month to five years.
- Because debt funds enjoy long-term capital gains tax after three years, typically three-year FMPs are now popular.

- FMPs are predominantly debt-oriented, and their objective is to provide steady returns over a fixed-maturity period, thereby protecting investors from market fluctuations.

Bank Credit

- Total bank credit exposure stood at ₹111 lakh crore in 2018 with the mid and large corporate segment accounting for the largest share of 43%.
- Consumer lending [retail, agriculture and priority sector lending] is the second biggest segment with a share of 35%.
- The MSME segment [business lending to both corporate entities and individuals] stands third with a share of 23%.

Steel Imports

- India was a net importer of steel during the 2018-19 fiscal year, the first time in three years.
- It occurred because India had lost market share among its traditional steel buyers and imports jumped on demand for higher quality steel domestically.

Wholesale Inflation

- Wholesale price inflation rose to a three-month high of 3.18% in March on costlier food and fuel.
- The Reserve Bank of India mainly factors in retail inflation for monetary policy decision.

Exports

- India's exports rose to a five-month high of 11% in March on account of higher growth mainly in pharma, chemicals and engineering sectors.
- The trade deficit — the difference between exports and imports — narrowed to \$10.89 billion during the month.
- During the full fiscal, the sectors which recorded healthy growth include petroleum (28%), plastic (25.6%), chemicals (22%), pharmaceuticals (11%) and engineering (6.36%).

- Oil imports in April-March 2018-19 grew to \$140.47 billion, while non-oil imports grew to \$366.97 billion during that fiscal.

Public sector Enterprises

- State-run companies will have 12 months to monetise non-core assets identified by a ministerial panel headed by the finance minister, failing which the finance ministry may restrict budgetary allocations to the CPSEs.
- An inter-ministerial group (IMG) chaired by the secretary of DIPAM will identify the non-core assets of the CPSEs on its own, and also on the basis of recommendations of the Niti Aayog. The final call will, however, be taken by the finance minister-headed panel.
- Once the Alternative Mechanism, comprising the finance minister, road transport minister and the minister of the administrative ministry concerned approves the assets for monetisation, it should be completed within 12 months from the date of approval.

Form 16

- The Central Board of Direct Taxes (CBDT) has notified changes in Form 16 seeking disclosure of more details, especially about exempt allowances.
- Form 16 is the certificate issued by employers for tax deducted at source (TDS) for salaried employees.

Gold Imports

- The country's gold imports dipped about 3% in value terms to \$32.8 billion during 2018-19.
- This is expected to keep a lid on the current account deficit.
- Total imports of the precious metal in 2017-18 had stood at \$33.7 billion.
- Softening prices of the yellow metal in the global markets could be the reason for the contraction in the value of imports.
- India is one of the largest gold importers in the world, and the imports mainly take care of demand from the jewellery industry.
- The country's current account deficit (CAD), or the difference between outflow and inflow of foreign exchange in the current account, widened to 2.5% of gross domestic product (GDP).

- The government had introduced several measures to restrict the import of gold. Import of the yellow metal attracts 10% duty.

FDI in Medical Devices

- Blanket implementation of price controls has contributed to a drastic fall in Foreign Direct Investment (FDI) in the medical device sector.
- India imports 70 % of its medical devices.
- In 2015 the Centre approved 100% FDI in the medical devices sector via automatic route.
- Previously medical devices, which came under the pharma sector, could take in 100% FDI through automatic route only in case of new ventures. Further approval of Foreign Investment Promotion Board (FIPB) was needed in case of acquisition of existing companies.

RBI Swap

- The second dollar-rupee buy/sell auction also saw healthy demand with the Reserve Bank of India getting bids worth \$18.65 billion compared with the notified amount of \$5 billion.
- The move would help shore up the country's foreign exchange reserves which are now close to \$415 billion.
- Companies that raise funds via the external commercial borrowing route find this route cost effective due to lower hedging cost as compared to the secondary market.
- RBI had added this new toolkit for liquidity management to ease liquidity to reduce its dependence on open market operations.
- On March 26, RBI had bought \$5 billion through a similar swap auction.

Life without Iranian Oil

India has said the country is “sufficiently prepared” to deal with the impact of the US decision to curtail the temporary exemption from sanctions on the purchase of Iranian oil, and that “a robust plan” has been put in place for adequate supply of crude to refineries.

- India, the world's third-biggest oil consumer, meets more than 80% of its crude oil requirements and around 40% of its natural gas needs through imports.
- Domestic oil and natural gas production has been declining for the last few years, even as the energy needs of the economy have grown.

- India is Iran's top oil buyer after China.
- Iran was the fourth largest supplier of oil to India in 2018-19.
- Indian refiners are increasing their planned purchases from the Organisation of the Petroleum Exporting Countries (OPEC), Mexico, and even the US to make up for the loss of Iranian oil.
- The big concern is that the substitute crude suppliers — Saudi Arabia, Kuwait, Iraq, Nigeria and the US — do not offer the attractive options that Iran does, including 60-day credit, and free insurance and shipping.

RBI Divestment

- The Reserve Bank of India (RBI) has divested its entire stake held in National Housing Bank (NHB), the regulator for housing finance companies, and National Bank for Agriculture and Rural Development (Nabard) to the government.
- The govt now which holds 100% in these entities.
- RBI had 100% shareholding in NHB.
- RBI had 72.5% stake in Nabard.
- Divestment of RBI's stake in NABARD and NHB has its basis in the recommendation of Narasimham Committee II.

INC-22 Forms

- The Centre is likely to extend the deadline and relax the rules for the disclosure norms it had set for companies in an attempt to weed out shell companies.
- The govt had in February notified a set of forms, including INC-22, which required companies incorporated on or before December 31, 2017 to provide details regarding the location of their offices, directors, and proof of business.
- The start-up community in particular raised concerns about the form saying that many of the requirements — including a photo of the exterior and interior of the office, and one with a director standing in front of the nameplate — were extremely onerous and unviable. The main problem, they said, was that many start-ups operated out of co-working spaces. Hence, taking such photographs would be unviable.

NBFC Ombudsman

- The Reserve Bank of India (RBI) has extended the coverage of Ombudsman Scheme for non-banking financial companies (NBFCs) to eligible non deposit taking non-banking financial companies (NBFC-NDs) having asset size of Rs 100 crore or above with customer interface.
- However, non banking financial company-infrastructure finance company (NBFC-IFC), core investment company (CIC), infrastructure debt fund-non-banking financial company (IDF-NBFC) and an NBFC under liquidation, are excluded from the ambit of the scheme.
- The scheme was launched in 2018 for redressal of complaints against NBFCs registered with the RBI under Section 45-IA of the RBI Act.
- The offices of the NBFC Ombudsmen are functioning in four metro centres — Chennai, Kolkata, Mumbai and New Delhi — and handle complaints of customers in the respective zones.
- The scheme also provides for an appellate mechanism under which the complainant/ NBFC has the option to appeal against the decision of the Ombudsman before the Appellate Authority.

Electronics Imports

- India's electronics imports touched a record \$55.6 billion in FY19, against \$51.5 billion a year before.
- It remained the largest driver of its trade deficit after oil.
- Electronics exports jumped as much as 39 per cent to a record \$8.9 billion last fiscal, against 12.3 per cent in the previous year.
- Telecom instruments made up for a third of overall electronics imports, the highest.
- Between April 2018 and February 2019, exports of telecom instruments jumped a massive 129 per cent year-on-year to \$2.4 billion — the highest since FY1- and emerged as the largest segment within the electronics exports category.

SCIENCE & TECH

EMISAT

- PSLV mission carrying EMISAT — the country's first satellite for gathering electronic intelligence (ELINT) to locate hostile radars for the military — will also be the longest flight for the Indian polar launch vehicle.
- The April 1 mission is numbered C-45 and carries 28 small, foreign customer satellites from four countries.
- This is the third consecutive PSLV mission in which ISRO will re-use its fourth stage as a space testbed. Earlier, the stages wasted away as floating debris once they released the satellites.

Batrachytrium Dendrobatidis

- It is a fungus.
- It is affecting amphibian species globally, even causing extinctions.
- Strangely, the fungus does not seem to be causing declines in amphibian populations in Asia, the place of its origin.

Mars

- Scientists confirmed the presence of the methane gas on the Red Planet as well as where it might have come from.
- The investigations pointed to an ice sheet east of Gale Crater as the likely source for the gas.

Johnson & Johnson

- Johnson & Johnson's baby shampoo samples failed quality tests conducted by the State of Rajasthan.
- J&J's baby shampoo had failed the quality test as they contained "harmful ingredients."
- Formaldehyde had been discovered in the samples.
- Formaldehyde, used in making building materials, is a known carcinogen.

ELINT

- ISRO launched the country's first electronic surveillance satellite, EMISAT.
- Space-based electronic intelligence or ELINT which forms a part of EMISAT will add teeth to situational awareness of the armed forces as it will provide location and information of hostile radars placed at the borders.
- This will be another dimension to the current land or aircraft-based ELINT.

Space Debris

- The amount of Indian space debris may have almost doubled in the aftermath of the Mission Shakti anti-satellite strike but this is still significantly less than the existing space debris generated by China, Russia and the U.S.
- Data from SPACE-TRACK.org, a public access repository maintained by the U.S. defence wing that tracks space activity, notes only 80 pieces of "space debris" attributable to India in orbit. This, however, doesn't include debris from MICROSAT-R, the DRDO satellite that was pulverised by India's anti-satellite missile.
- There are about 34,000 debris objects >10 cm, 900 000 objects from 1 cm-10 cm and 128 million objects from 1 mm to 1 cm, orbiting the earth.
- Orbital debris are tracked by a variety of ground-based radar and space stations.
- The speeds at which these objects — between 1mm to 10 cm across — hurtle through space travel makes them extremely dangerous.
- For instance, a collision with a 10 cm object would entail a catastrophic fragmentation of a typical satellite, a 1 cm object will most likely disable a spacecraft and penetrate the ISS' protective shields, and a 1 mm object could destroy subsystems on a satellite.

Enzyme

- Indian scientists have discovered an enzyme which helps in breaking cell walls of bacteria and hence, offers potential for a new drug delivery route to arrest the anti-bacterial resistance to the existing antibiotic drugs.
- Enzymes regulates the growth of the cell wall which is fundamental for bacterial growth and division. Therefore, by blocking this 'scissors enzyme' from functioning, new ways to target microbes could be found, leading to a new wave of antibiotic drugs.
- In contrast, the classical antibiotic drugs target the last stage of cell synthesis to prevent cell growth like penicillin that hits the machinery that creates the cell wall.

Tipline

- WhatsApp unveiled its 'Checkpoint Tipline', where people can check the authenticity of information received, as it looks to crack down on fake news ahead of the general elections.
- This tipline will help create a database of rumours to study misinformation during elections for Checkpoint.
- People in India can submit misinformation or rumours they receive to the Checkpoint Tipline on WhatsApp.
- Once a WhatsApp user shares a suspicious message with the tipline, verification centre will respond and inform the user if the claim made in message shared is verified or not.
- The response will indicate if information is classified as true, false, misleading, disputed or out of scope and include any other related information available.
- The centre is equipped to review content in the form of pictures, video links or text and will cover English, Hindi, Telugu, Bengali and Malayalam.

Dark Matter

- Dark matter is not made up of primordial black holes smaller than a tenth of a millimetre, say scientists.
- This finding puts the theory put forward by tStephen Hawking to its most rigorous test to date.
- About 85% of the matter in the universe is believed to be made up of dark matter.
- Its gravitational force prevents stars in our Milky Way from flying apart.
- If dark matter consists of primordial black holes of a given mass, in this case masses lighter than the moon, the researchers expected to find about 1,000 events. However, after careful analyses, they could only identify one case.

Beresheet

- The world's first largely private lunar mission by Israel's Space IL crossed a major milestone when spacecraft Beresheet dropped into lunar orbit.
- Beresheet — Genesis in Hebrew — is also the smallest spacecraft in history to have entered the moon's orbit.

Hayabusa 2

- A Japanese spacecraft, Hayabusa2, launched an explosive device at an asteroid, aiming to blast a crater in the surface and scoop up material that could shed light on how the solar system evolved.
- Hayabusa2 successfully released the so-called “small carry-on impactor” — a cone-shaped device capped with a copper bottom — as scheduled, as the probe hovered just 500 metres above the asteroid Ryugu.

Superflares

- In 1962, a meteorite weighing 21 kg was found at Efremovka, now in Kazakhstan. By analysing a piece of this meteorite and studying the relative abundances of isotopes of lithium, beryllium and boron, two researchers have envisaged how the Sun behaved in its infancy. Then, they deduce,
- The Sun could let off superflares which were a million times stronger than the strongest recorded solar flare.
- Such superflares must have taken place 4.5 billion years ago, when the Sun was barely forming.
- Among the first-formed solids of the solar system were the calcium aluminium-rich inclusions (CAI). The CAIs are nearly 4.567 billion years old.
- They become the refractory components within meteorites with irregular shape and are predominantly composed of oxides and silicates of calcium and aluminium.
- These were pushed to large distances measuring up to a few times the Earth-Sun distance (which is equal to one astronomical unit).
- These primordial solids were cooked by the superflares and moved to this distance in short times in the order of a year.

Candida Auris

- A fungus immune to drugs is secretly sweeping the globe.
- The fungus, called Candida auris, preys on people with weakened immune systems.
- The rise of Candida auris indicates that like bacteria, germs are growing resistance.
- C. auris is so tenacious, in part, because it is impervious to major antifungal medications, making it a new example of one of the world’s most intractable health threats: the rise of drug-resistant infections.

- For decades, public health experts have warned that the overuse of antibiotics was reducing the effectiveness of drugs that have lengthened life spans by curing bacterial infections once commonly fatal.
- But lately, there has been an explosion of resistant fungi as well, adding a new and frightening dimension to a phenomenon that is undermining a pillar of modern medicine.
- Simply put, fungi, just like bacteria, are evolving defences to survive medicines.

Anolis

- Scientists have been altering the genes of mice, pigs, goats, chickens and butterflies for quite some time.
- But even as Crispr, a transformative gene-editing tool, made seemingly impossible genetic alterations possible, reptiles had remained untouched.
- That changed with the birth of a nearly transparent Anolis lizard, the first gene-edited reptile.
- The scientists could have altered a variety of genes, but they focused on the mutation that codes for albinism in large part because that tweak is visual. Producing an albino lizard would show their gene editing was successful.

IX Millenium

- Georgia aims to grow grapes on Mars.
- Georgia has ancient wine-making tradition.
- Now it wants to be the first to grow grapes on Mars.
- Georgia has started a project to develop grape varieties that can be grown on Mars. The project is called IX Millennium — a reference to Georgia's long history of wine-making.

Black Hole

- Astronomers announced that at last they had seen the unseeable: a black hole.
- A black hole is a cosmic abyss so deep and dense that not even light can escape it.
- The black hole has been found in the heart of the galaxy known as Messier 87, some 55 million light-years away from here.
- The black hole is about seven billion times more massive than the sun.

- Einstein, from whose equations black holes emerged, was loath to accept it.
- If too much matter is crammed into one place, the cumulative force of gravity becomes overwhelming, and the place becomes an eternal trap, a black hole. Here, according to Einstein's theory, matter, space and time come to an end and vanish like a dream.
- The image of the black hole was formed from two years of computer analysis of observations from a network of radio antennas called the Event Horizon Telescope.

Homo luzonensis

- A new species of ancient human has been discovered in a cave in the Philippines.
- Excavated in Callao Cave in Luzon island, the specimen is named Homo luzonensis and is dated to 67,000 years ago.
- The newest discovery challenges the fairly straightforward idea of human evolution.
- The traditional narrative suggests that homo sapiens evolved from the ancient species of homo erectus in Africa and dispersed from there around 50,000 years ago.
- With the new finding, it becomes clear that the homo sapiens were definitely coexisting with other human species in other parts of the globe.
- The fossils suggest that the species was less than 4 ft tall and possibly even shorter than yet another ancient species called Homo floresiensis, sometimes called the "hobbit".

NASA's 'Twins Study'

- A NASA study of a U.S. astronaut who spent a year in space while his twin brother remained on the earth is providing insights into the effects of spaceflight on the human body.
- U.S. astronaut Scott Kelly spent a year on the International Space Station while his identical twin Mark Kelly stayed on the ground.
- It was found in the "NASA Twins Study" that most of the changes to Mr. Scott's body during his time in space returned to normal within months of his return to the earth — although not all of them.
- The findings were encouraging for interplanetary travel such as a trip to Mars.

Human Brain Genes into Monkeys

- Chinese scientists have implanted human brain genes into monkeys, in a study on evolution of human intelligence.
- Researchers inserted human versions of MCPH1, a gene that scientists believe plays a role in the development of the human brain, into 11 rhesus monkeys.
- They found the monkeys' brains — like those of humans — took longer to develop, and the animals performed better in tests of short-term memory as well as reaction time compared to wild monkeys.

Ethanol Production

- A robust yeast strain that can produce up to 15.5% more ethanol when glucose or lignocellulose biomass — rice and wheat straw — is fermented has been isolated by researchers.
- In India, ethanol production is mostly by fermenting molasses to meet the annual target of 5% blending of petrol with ethanol.
- But with India setting a target of blending petrol with 10% of biofuel by 2022, other sources such as rice and wheat straw have to be considered.
- Fermenting lignocellulose efficiently to generate more ethanol than what is currently possible is therefore necessary. To that end, the strain that has been isolated becomes important.

Origination of Life

- Challenging a common perception, a new study suggests primitive ponds may have provided a suitable environment for creating the earth's first life forms, more so than oceans.
- The findings showed that shallow water bodies could have held high concentrations of what many scientists believe to be a key ingredient for jump-starting life on the earth: nitrogen.
- If the origin of life required fixed nitrogen, then it's tough to have the origin of life happen in the ocean. It's much easier to have that happen in a pond.
- Nitrogenous oxides were likely deposited in water bodies, including oceans and ponds, as remnants of the breakdown of nitrogen in earth's atmosphere.
- Atmospheric nitrogen comprises two nitrogen molecules, linked via a strong triple bond, that can only be broken by an extremely energetic event — namely, lightning.

- Scientists believe there could have been enough lightning crackling through the early atmosphere to produce an abundance of nitrogenous oxides to fuel the origin of life in the ocean.
- But the new study found that ultraviolet light from the Sun and dissolved iron sloughed off from primitive oceanic rocks could have destroyed a significant portion of nitrogenous oxides in the ocean, sending the compounds back into the atmosphere as nitrogen.
- In the ocean, UV light and dissolved iron would have made nitrogenous oxides far less available for synthesising living organisms. In shallow ponds, however, life would have had a better chance to grow, mainly because ponds have much less volume over which compounds can be diluted. As a result, nitrogenous oxides would have built up to much higher concentrations.

Stratolaunch

- The world's largest aeroplane — with two fuselages and six Boeing 747 engines — made its first test flight in California.
- The mega jet, called Stratolaunch, carried out its maiden voyage over the Mojave desert.
- It is designed to carry into space, and drop, a rocket that would in turn ignite to deploy satellites.
- It is supposed to provide a more flexible way to deploy satellites than vertical takeoff rockets because this way all that is needed is a long runway for takeoff.
- The aircraft is so big that its wing span is longer than a football field, or about 1.5 times that of an Airbus A380.

GSLV

- The Union Cabinet approved five more GSLV satellite launch vehicles for the period 2021-24 under the next phase 4 of the ongoing GSLV continuation programme.
- The Indian Space Research Organisation uses the GSLV, the second of its three launchers, to put 2,000-kg class of communication and other satellites to a GEO (or geosynchronous) orbit about 36,000 km away.
- The GSLV Continuation Programme - Phase 4 will meet the launch requirement of satellites for providing critical satellite navigation services, data relay communication for supporting the Indian Human Spaceflight Programme and the next interplanetary mission to Mars.

First 3D Printed Heart

- Scientists in Israel unveiled a 3D print of a heart with human tissue and vessels.
- The heart marked the first time anyone has successfully engineered and printed an entire heart replete with cells, blood vessels, ventricles and chambers.,”
- People have managed to 3D-print the structure of a heart in the past, but not with cells or with blood vessels.
- Cardiovascular disease is the world’s leading cause of death, according to the World Health Organization, and transplants are currently the only option available for patients in the worst cases.
- But the number of donors is limited and many die while waiting. When they do benefit, they can fall victim to their bodies rejecting the transplant — a problem the researchers are seeking to overcome. Using the patient’s own tissue was important to eliminate the risk of an implant provoking an immune response and being rejected.

Measles

- Measles cases rose 300% worldwide through the first three months of 2019 compared to the same period last year, the UN said.
- Measles, which is highly contagious, can be entirely prevented through a two-dose vaccine, but the World Health Organization (WHO) has in recent months sounded the alarm over slipping global vaccination rates.

Hydrocarbon Lakes on Titan

- Titan boasts lakes, rivers and seas of hydrocarbons: compounds of hydrogen and carbon like those that are the main components of petroleum and natural gas.
- Using data obtained by NASA’s Cassini spacecraft before that mission ended in 2017 with a deliberate plunge into Saturn, the scientists found that some of frigid Titan’s lakes of liquid hydrocarbons are surprisingly deep while others may be shallow and seasonal.
- The scientists suspect the lakes formed when surrounding bedrock chemically dissolved and collapsed.

Activity in brains of Dead Pigs

- Scientists have managed to restore cell function in the brains of pigs hours after the swine died.
- This research could one day be used to help treat victims of heart attacks and strokes and unravel the mysteries of brain trauma.
- In human and large mammal brains, cells crucial for neural function begin to degrade as soon as blood supply is cut — a process long considered to be irreversible.
- But the findings of the trial show that the brains of pigs can have their blood flow and cell function restored even hours after death.

Genome Sequencing by CSIR

- In an indigenous genetic mapping effort, nearly 1,000 rural youth from the length and breadth of India will have their genomes sequenced by the Council of Scientific and Industrial Research (CSIR).
- The project aims at educating a generation of students on the “usefulness” of genomics.
- Globally, many countries have undertaken genome sequencing of a sample of their citizens to determine unique genetic traits, susceptibility (and resilience) to disease.
- This is the first time that such a large sample of Indians will be recruited for a detailed study.
- The project is an adjunct to a much larger government-led programme, still in the works, to sequence at least 10,000 Indian genomes.
- Typically, those recruited as part of genome-sample collections are representative of the country’s population diversity. In this case, the bulk of them will be college students, both men and women, and pursuing degrees in the life sciences or biology.
- Genomes will be sequenced based on a blood sample and the scientists plan to hold at least 30 camps covering most States. Every person whose genomes are sequenced will be given a report. The participants would be told if they carry gene variants that make them less responsive to certain classes of medicines.
- For instance, having a certain gene makes some people less responsive to clopidogrel, a key drug that prevents strokes and heart attack.

Bubble Boy Disease

- Bubble boy disease is to be born without a working germ-fighting system, every infection a threat to the life.
- Now eight babies with “bubble boy disease” have had it fixed by a gene therapy made from one of the immune system’s worst enemies HIV, the virus that causes AIDS.
- Scientists turned this enemy virus into a saviour, altering it so it couldn’t cause disease and then using it to deliver a gene the boys lacked.
- Bubble boy disease is also known as SCID (severe combined immunodeficiency syndrome).
- SCID is caused by a genetic flaw that keeps the bone marrow from making effective versions of blood cells that comprise the immune system. It affects 1 in 2,00,000 newborns, almost exclusively males. Without treatment, it often kills in the first year or two of life.
- The nickname “bubble boy disease” comes from a famous case in the 1970s a Texas boy who lived for 12 years in a protective plastic bubble to isolate him from germs.

Before Oumuamua

- Oumuamua was so far the only known interstellar object to make a fly-by of Earth in 2017.
- Now scientists have found evidence that an earlier object may have entered Earth’s atmosphere.
- Scientists have proposed that before ‘Oumuamua, there may have been another recent interstellar visitor — a meteor from another solar system may have actually hit Earth in 2014. It burned up in the atmosphere and fell into the South Pacific.
- How did they reach their conclusion? They searched NASA’s Near Earth Object Database to identify the fastest meteors with strange trajectories. If an object moves extremely fast, it can be a sign that it is not tied to an orbit around the sun.
- They found that it might have come from the interior of another planetary or star system in the Milky Way. That would make the meteor the first known to have made the trip from outside the solar system to Earth.

Antibacterial agents in Ganga

- A study to probe the “unique properties” of the Ganga found that the river water contains a significantly higher proportion of organisms with antibacterial properties.

- Other Indian rivers also contain these organisms but the Ganga — particularly in its upper Himalayan stretches — has more of them.
- The study, 'Assessment of Water Quality and Sediment To Understand Special Properties of River Ganga,' began in 2016 and was conducted by the Nagpur-based National Environmental Engineering and Research Institute (NEERI), a CSIR lab.
- Because bacteriophages are a kind of virus that kill bacteria, they are frequently found in proximity to each other.
- In the river Ganga, the bacteriophages were detected to be approximately 3 times more in proportion than bacterial isolates.
- Though it isn't evident that there are bacteriophage species unique to the Ganga, the study suggests there are many more of them in the Ganga than in other rivers.
- That the Ganga may contain unique microbial life, which makes it relatively more resilient to putrefaction, was suggested by British colonial scientists about 200 years ago.

Measles

- The number of cases of measles — one of the world's most contagious diseases — is climbing, warned the World Health Organisation (WHO).
- In 2017, the most recent year for which estimates are available, it caused close to 1,10,000 deaths.
- As of this time last year, there were 28,124 measles cases from 163 countries. Globally, this is almost a 300% increase.
- Countries with the most reported cases include Madagascar, Ukraine, India, Nigeria, Kazakhstan, Chad, Myanmar, Thailand, the Philippines and Democratic Republic of the Congo.
- In India, measles is still one of the leading causes of death in young children. About 15% of vaccinated children fail to develop immunity from the first dose, meaning that if only 80% are fully immunised, an outbreak is likely.
- The disease is almost entirely preventable through two doses of a safe and effective vaccine.

Crab Nebula

- Celebrating the 29th anniversary of its launch, the Hubble Space Telescope imaged the Southern Crab Nebula.

- Resembling its namesake, the celestial structure, located in Centaurus constellation, several thousand light years away, is made of a whirling pair of stars – an ageing red giant and a burnt out white dwarf.

ADS-B

- Soon India will be able to know the exact position of aircraft flying over the vast stretches of Indian Ocean falling in airspace of its own as well as that administered by it, every 30 seconds.
- The Airports Authority of India (AAI) has tied up with American company Aireon that with its partners provides spacebased global air traffic surveillance system.
- On land, planes equipped with automatic dependent surveillance-broadcast (ADS-B) systems beam their positions to ground-based receivers every few seconds. India has 30 such receivers, which, in turn, send the positional data to connected ATC monitoring systems, giving exact position of aircraft.
- But when over the vast ocean, air traffic controllers (ATC) get only a rough idea of position of aircraft. With aircraft with ADS-B system, even over ocean we will know exactly where an aircraft is.

Vacuum Extinguish Method (VEM)

- Scientists have developed a novel fire extinguisher for use in space environments that sucks in the flame as well as combustion product.
- The technology is called Vacuum Extinguish Method (VEM).

Magic Milk

- Scientists at the Council of Scientific & Industrial Research (CSIR) have isolated an anti-microbial protein found in the milk of an egg-laying mammal.
- The protein promises to serve as an alternative to antibiotics used on livestock.
- Echidnas, also known as spiny anteaters, are unique egg-laying mammals found only in Australia and New Guinea.
- Their young hatch from eggs at a very early stage of development and depend completely on mother's milk.

- But the mammary glands of the echidnas are devoid of nipples, forcing the young ones to lick milk from the mother's body surface and potentially making them vulnerable to micro-organisms.
- However, the milk of the echidna has a protein that can puncture the cell membranes of multiple bacterial species, thus destroying the source of infection.
- There are ways to produce the protein in large quantities using E. coli. It can then be used to fight infections.
- There is a rise of superbugs due to the indiscriminate use of antibiotics by the animal husbandry industry to raise livestock. The superbugs can cause mastitis, an infection of the mammary gland, in dairy animals. The protein from echidna milk is effective against mastitis-causing bacteria.

Marsquake

- NASA's InSight lander has picked up a gentle rumble at Mars, believed to be the first marsquake ever detected.
- We finally have proof that Mars is still seismically active.
- Mars is not nearly as geologically active as Earth and, like our moon, lacks tectonic plates.
- By analysing marsquakes, scientists hope to learn more about how rocky planets are formed.

Ocean's plastic

- The Indian Ocean is the world's biggest dumping ground for plastic waste, but where the trash ultimately ends up has remained a mystery.
- Scientists have found that the unique characteristics of the southern Indian Ocean pushes floating plastics towards the western side of the ocean, where it leaks past South Africa into the South Atlantic Ocean.
- Because of the Asian monsoon system, the southeast trade winds in the southern Indian Ocean are stronger than the trade winds in the Pacific and Atlantic Oceans.
- It is also most likely that floating plastics will ultimately end up on beaches, transported by the reversing monsoon winds and currents, researchers said. However, the atmospheric and oceanic attributes of the Indian Ocean are different to other ocean basins and that there may not be a concentrated garbage patch

Cell-Based Meat

- India's first project to research on cell-based meat, also called clean meat, would be taken up at the Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
- Clean meat would be produced through cellular agriculture with cells sourced from animals and cultivated into meat. Hence, it promises to revolutionise the food system by providing protein without harming the environment.

Bt Brinjal

- Genetically modified (GM) brinjal is being illegally grown in some parts of the country.
- Brinjal has been genetically modified by inserting a protein gene from the soil bacterium *Bacillus thuringiensis* to give protection against certain pests.
- Bt Brinjal, which was developed in India by Maharashtra-based seed company Mahyco, was on the verge of becoming India's first GM food crop, when the Genetic Engineering Appraisal Committee cleared it for commercialisation in 2009.

Hungry Blackhole

- Astronomers may have just identified a black hole devouring a nearby neutron star.
- The blackhole has been found out by the LIGO-VIRGO collaboration.
- The event, labelled for now as #s190426c, occurred 1.2 billion light years away.

SOCIAL SECTOR

National Health Authority

- Govt cleared the constitution of a National Health Authority (NHA) through an executive order, thus taking the Pradhan Mantri Jan Arogya Yojana (PM-JAY) out of the ambit of the Ministry of Health.
- The ministry's role will now be limited to acting as the nodal ministry for NHA in parliamentary matters, like the presentation of annual reports.
- The Cabinet also approved a proposal to upgrade the post of the NHA CEO to that of a Secretary to the Government of India with full financial powers.
- Till now, all funds released by the National Health Agency, which is implementing the PM-JAY, were done through the Ministry of Health.
- The NHA's governing board will be chaired by the Minister for Health and Family Welfare, while its members will include NITI Aayog CEO and NHA CEO.
- The proposal envisages statutory backing for NHA eventually. Till then, it will be an adjunct office of the ministry — like the department of health research — with complete functional autonomy.
- A part of the overarching Ayushman Bharat scheme, it is currently administered by the National Health Agency, which is a registered society under the Ministry of Health. While the ministry is not responsible for the day-to-day running of the scheme, it does have a say in policy matters.
- Now, the NHA will be responsible for its operational guidelines, fixing the ceiling of premium amounts, and developing mechanisms for strategic purchase of healthcare from the private sector.

Open Defecation

- Swachh Bharat Mission aims to eliminate open defecation across the country by October 2, 2019.
- According to the Mission, Madhya Pradesh and Rajasthan are already open defecation free or ODF states.
- Bihar has achieved 98.97% coverage of toilets for every household, while Uttar Pradesh has achieved 100%, according to government data, although the state has yet to be declared ODF.

Bhoomi Rashi

- The Ministry of Road Transport & Highways has recently launched the Bhoomi Rashi portal.
- The purpose of the portal is to fully digitize and automate the entire process of land acquisition.

Sikkim

Sikkim will be the first state to roll out Universal Basic Income (UBI) and has started the process to introduce the unconditional direct cash transfer scheme.

Ayushman Bharat

- West Bengal pulled out of the Centre's Ayushman Bharat scheme.
- The ambitious Ayushman Bharat or the National Health Protection Scheme aims to cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) by providing health cover up to ₹5 lakh per family per year.
- The expenses incurred are to be shared between the Centre and the State in 60:40 ratio.

Bhartiya Shiksha Board (BSB)

- It will be the country's first national school board for Vedic education.
- It will be a fully-funded autonomous body under the HRD Ministry.
- Apart from affiliating traditional pathshalas, BSB will also be assigned the responsibility of evolving new kinds of schools that offer a blend of Vedic and modern education.

NREGA

The National Rural Employment Guarantee (NREGA) scheme has been given an additional allocation of ₹6,084 crore to tide over the next three months. This lifts the total allocation to MGNREGA for 2018-19 to ₹61,084 crore, which is the highest ever allocation.

Pradhan Mantri Rozgar Protsahan Yojana (PMRPY)

- Pradhan Mantri Rozgar Protsahan Yojana (PMRPY), the flagship scheme of the Central Government for employment generation has crossed the milestone of one crore beneficiaries.
- PMRPY was announced in 2016 and is being implemented by Ministry of Labour and Employment through the Employees' Provident Fund Organization (EPFO).
- Under the scheme, Government is paying full employers' contribution of 12% (towards Employees' Provident Fund and Employees' Pension Scheme both), for a period of 3 years in respect of new employees who have been registered with the EPFO on or after 1st April 2016, with salary up to Rs. 15,000 per month.
- The entire system is online and AADHAR based with no human interface in the implementation of the scheme.

AMRIT

- The Health Ministry has decided to throw open AMRIT stores to private players in a bid to increase access to affordable drugs.
- The Affordable Medicines and Reliable Implants for Treatment (AMRIT) pharmacies — the first of which was opened at AIIMS, Delhi in 2015 — sell expensive drugs such as those used for treating cancer and cardiovascular diseases at a cost that is 30-40 per cent cheaper.
- Unlike Jan Aushadhi stores, which are run by the Ministry of Chemicals and Fertilisers, AMRIT stores do not sell generic versions of drug but sell branded drugs.
- The World Health Organisation estimates that in 2015, an estimated 8 per cent of the Indian population had been pushed below the poverty line by high out-of-pocket payments for health care.

NCRB

- The National Crime Records Bureau is looking to deliver a richer and more varied picture by categorising offences like attacks on journalists, RTI activists, hate crimes, lynchings and fake news.
- It will be for the first time that NCRB's annual report will provide data on crimes that have been in discussion but were not logged in separate categories.
- The new data will tabulate how many people were killed in police lathicharge, police firing or by a riotous mob.

- Earlier crimes were classified in 40 categories, which have been increased to 70 crime heads in NCRB report.
- Among other interesting inclusions this time are crimes committed in schools, or by political leaders, “sants” (religious leaders), khap panchayats, illegal immigrants, transgenders, bank officials, students, private bodyguards and incidents of stone pelting, encounters of civilians and death of security personnel in terrorist incidents.
- An organised crime category will for the first time reveal how many crimes were committed by supari or contract killers, sand and mining mafia, examination racketeers or hawala operators.
- While dealing with crimes involving communication devices under the IT Act, the report will analyse cases of fake news on social media, cyber stalking of women and children apart from any incident of abetment to suicide via an online activity.
- People who have committed rape after befriending a woman or a girl on social media or created a fake profile, morphed a picture or defamed a woman online would also be part of the latest statistics.
- Till now, government didn’t collect data on attacks on RTI activists, journalists, social activists, whistle-blowers and witnesses who struggle or write on issues related to corruption, gender-based violence, caste, or expose illegal activities related to any mafia or a political party.
- The cost of medicines is estimated to comprise as much as 70 per cent of the total out-of-pocket expenditure that families have to make on healthcare.

Jan Shikshan Sansthan

- Jan Shikshan Sansthan (JSSs) are established to provide vocational training to non-literate, neo-literate, as well as school drop outs by identifying skills as would have a market in the region of their establishment.
- Jan Shikshan Sansthan (JSSs), have been categorized into three categories, namely, Category ‘A’, Category ‘B’ and Category ‘C’. Different quantum of assistance has been provided for each category.

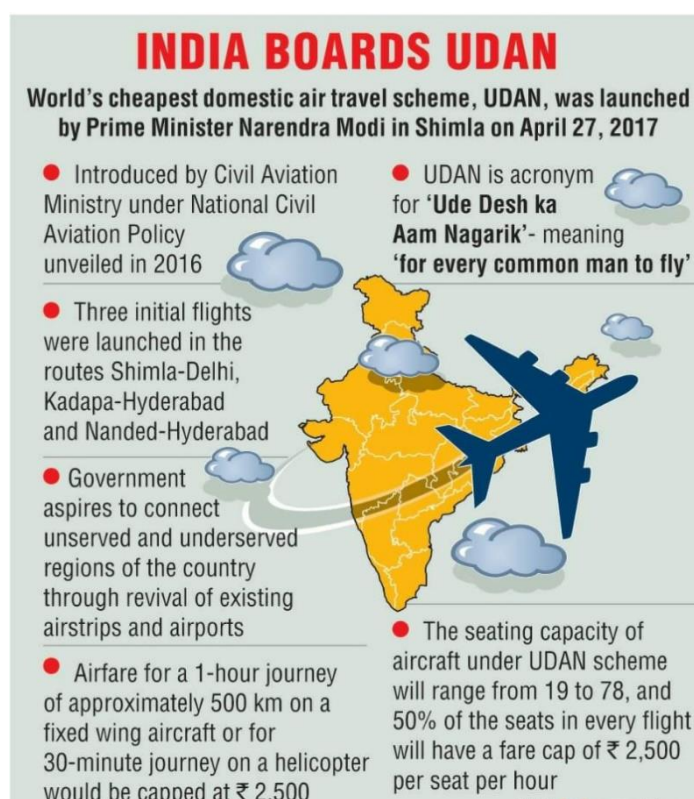
DAY-NRLM

- The Deendayal Antodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM) is aimed at alleviation of rural poverty through building sustainable community institutions of the poor.

- It seeks to mobilize about 9 crore households into SHGs and link them to sustainable livelihood opportunities by building their skills and enabling them to access formal sources of finance, entitlements and services from both public and private sectors.
- It is envisaged that the intensive and continuous capacity building of rural poor women will ensure their social, economic and political empowerment and development.

UDAN

- Under the UDAN scheme, the government aims to connect unserved and under-served airports.
- On the routes selected under the scheme, a fixed number of seats are sold at fares, for which a cap is decided by the government.
- Airlines bid for routes with VGF they require to meet the costs and this funding is contributed by the civil aviation ministry and respective state governments. Upon technical qualification, the airline with the lowest VGF bid is selected to operate on the route with a three-year exclusivity.



Ayushman Bharat

- Health and wellness centres — which will cater to people's primary healthcare needs — is a leg of the Ayushman Bharat scheme.
- These centres will provide comprehensive healthcare, including for non-communicable diseases and maternal and child health services.
- These centres will also provide free essential drugs and diagnostic services.
- Pradhan Mantri Jan Arogya Yojna is the secondary and tertiary care arm of Ayushman Bharat.
- The National Health Policy aims to double the government spend on health from the existing 1.15% of GDP to 2.5% by 2025.

ENVIRONMENT & ECOLOGY

Ocean Heat

- Ocean heat hit a record high in 2018, the United Nations has said, raising urgent new concerns about the threat global warming is posing to marine life.
- About 93 percent of excess heat — trapped around the Earth by greenhouse gases that come from the burning of fossil fuels -- accumulates in the world's oceans.

Air Pollution

- India and China together accounted for over 50% of the total 5 million deaths globally from air pollution in 2017.
- Each of the two countries — India and China - registered over 1.2 million deaths in 2017 from air pollution — which includes ambient as well as household air pollution.
- In India, air pollution is the third highest cause of death among all health risks, ranking just above smoking.
- Worldwide, air pollution is responsible for more deaths than other risk factors such as malnutrition, alcohol use, and physical inactivity.
- While around 82% of the disease burden attributable to air pollution stems from chronic non-communicable diseases, it also contributes to communicable disease.
- Apart from outdoor air pollution, household air pollution — mainly caused from burning of solid fuels for cooking etc — is also a major source of air pollution.

Coral Bleaching

- The world's southernmost coral reef has been hit by bleaching this summer.
- Rising sea temperatures from climate change were affecting even the most isolated ecosystems.
- The corals off Lord Howe Island — some 600 km offshore from Sydney — were affected by elevated temperatures this summer, despite escaping severe bleaching that damaged the Great Barrier Reef in 2016 and 2017.
- Bleaching occurs when abnormal environmental conditions, such as warmer sea temperatures, cause corals to expel tiny photosynthetic algae, draining them of their colour.

Jumping Spiders

- A group of jumping spiders that mostly occur in Eurasia and Africa, has been spotted for the first time in Kerala's Illithodu forests.
- The spider belongs to the genus *Habrocestum* is a species new to science.
- The spider has a single long spine on the underside of both its first legs.
- The discovery lends support to the continental drift theory that suggests that the world's continents were one large, contiguous landmass where these creatures thrived millions of years ago.

Neelakurinji

- Next season, the 'neelakurinji' blossoms may not carpet the hillocks on the western side of the Western Ghats in a ravishing purple.
- Wildlife experts say the recent large-scale wildfires on the grasslands where Neelakurinji (*Strobilanthes kunthiana*) blossomed widely last year after a period of 12 years could have wiped out all the seeds of the endemic flowers from the area.
- Neelakurinji seeds are sensitive without a hard cover and are unlikely to survive a massive fire.
- As a habitat, the Western Ghats is known for its rare collection of flora and fauna. There are some rare orchids in the area and even a flash of fire could destroy the seeds.
- The grasslands are important agents for protecting the biodiversity, both for plants and animal species.

Solar E-waste

- India will likely stare at a pile of a new category of electronic waste, namely solar e-waste.
- Currently, India's e-waste rules have no laws mandating solar cell manufacturers to recycle or dispose waste from this sector.
- India's PV (photovoltaic) waste volume is estimated to grow to 200,000 tonnes by 2030 and around 1.8 million tonnes by 2050.
- India is among the leading markets for solar cells in the world, buoyed by the government's commitment to install 100 GW of solar power by 2022.
- So far, India has installed solar cells for about 28 GW and this is largely from imported solar PV cells.

- Solar cell modules are made by processing sand to make silicon.
- These modules are 80% glass and aluminium, and non-hazardous. Other materials used, including polymers, metals, metallic compounds and alloys, and are classified as potentially hazardous.

Power point

India faces a major solar e-waste threat as it plans to tap the sun in a big way using photovoltaic (PV) cells to generate electricity



What constitute solar e-waste?

- Photovoltaic cells that have reached their life cycle and haven't been recycled
- They contain potentially hazardous chromium, silicon tetrachloride, cadmium, selenium, and sulfur hexafluoride

What is the threat perception?

- Globally, limited facilities exist to recycle solar cells
- India's PV waste volume is estimated to grow to 200,000 tonnes by 2030
- The PV volume may rise to as much as 1.8 million tonnes by 2050

Olive Ridley Turtles

- The Kalam Island off the Odisha coast has become lively with lakhs of baby Olive Ridley turtles crawling towards the Bay of Bengal after emerging from eggs.
- The unmanned island, located close to the Wheeler's Island defence test range centre, a prohibited territory, is one of the largest rookeries in the world.
- After breaking the eggs, the turtles crawl seawards almost immediately without their mothers.

Indian Bullfrog

- Indian bullfrogs introduced in the Andaman islands are invasive, and eat native wildlife including fish and lizards.
- Now, experiments reveal that the frogs take to this invasive behaviour early in their lives. Even in the developmental stages, the large bullfrog tadpoles eat other native frog tadpoles.
- The Indian bullfrog *Hoplobatrachus tigerinus* (native to the Indian subcontinent) has rapidly invaded the Andaman islands after it was introduced there in the early 2000s.

- In human-dominated areas, it now shares space with other native (and often endemic) frog species.
- The experiment results reveal that Indian bullfrog tadpoles – which grew to be the largest (around 20 millimetres) – also grew the fastest. The survival of endemic frog tadpoles reduced when bullfrog tadpoles were present.

Indoor Air Pollution

- India can achieve its air quality goals if it completely eliminates emissions from household sources.
- A recent study has pointed out that the use of firewood, kerosene and coal in the households contributed to about 40% of the PM 2.5 pollution in the Gangetic basin districts.
- This number varied across the country but household emissions remained one of the major culprits behind air pollution.
- The researchers pointed out that complete mitigation would bring down the country's average annual PM 2.5 air pollution to 38 microgram/cubic metre.
- Surprisingly, this is below India's national ambient air quality standard of 40 microgram/cubic metre and slightly above the World Health Organization (interim target 1) standards of 35 microgram/cubic metre.

East Asian Birds in Andaman

- Horsfield's Bronze Cuckoo (*Chalcites basalis*) is a native of Australia and New Guinea. However, it was recently found in the Andaman and Nicobar islands. The sighting was the first recorded instance of the bird in India.
- The Zappey's Flycatcher (*Cyanoptila cumatilis*) a song bird that breeds in China and spends the winters in the Malay peninsula, Sumatra and Java, was spotted six times in different areas of Andaman and Nicobar Islands.
- In the past few years a few other birds of southeast Asian origin have been recorded in the Andaman and Nicobar Islands during migration. Number of new sightings has increased post the 2004 tsunami.
- These birds use Andaman and Nicobar Islands for a few week rest before they can fly along the East Asian-Australasian Flyway (EAAF).
- The EAAF extends from Arctic Russia and North America to the south Australian boundaries and includes the most of the east Asian regions including Andaman and Nicobar Islands.

Ethical Gold

- As high-end consumers demand to know the origin of their treasures, some jewellers are ensuring they use responsibly sourced, ecofriendly or recycled gold.
- Specialised producers now tack a “fairmined” ecologically friendly label on their output, and the Swiss house Chopard last year became the first big name to commit to “100% ethical” creations.
- The firm says it uses only verified suppliers of gold that meet strict standards to minimise negative environmental impacts of mining the precious metal.
- Among the many certificates and standards claiming to codify “responsible” goldmining, two labels stand out. They are “fairmined” gold and the more widely known “fairtrade” label. Both support artisanal mines that seek to preserve the environment in terms of extraction methods, along with decent working conditions for the miners.
- Fairmined or Fairtrade gold is about 10 to 12% more expensive. But recycled gold barely generates any additional cost premium since it was already refined for a previous life in the form of jewellery or part of a high-tech product.

Cost of Saving the Planet

- Saving the diversity and abundance of life on the earth may cost \$100 billion a year, say scientists who have proposed a policy to prevent another mass extinction event on the planet.
- The new science policy proposal to reverse the extinction is called “A Global Deal for Nature” (GDN).
- The policy’s mission is to save the diversity and abundance of life on the earth — for the price tag of \$100 billion a year.
- Societal investment in the GDN plan would, for the first time, integrate and implement climate and nature deals on a global scale to avoid human upheaval and biodiversity loss.
- The Global Deal for Nature is a time-bound, science-based plan to save the diversity and abundance of life on Earth.
- The three overarching goals of the GDN are
 - to protect biodiversity by conserving at least 30% of the earth’s surface by 2030;

- mitigate climate change by conserving the earth's natural carbon storehouses; and
- reduce major threats.

Extinction Rebellion

- Some of 's busiest streets in U.K re-opened for the first time in a week as climate change protesters regrouped and plotted a new course after police made over 1,000 arrests.
- The so-called Extinction Rebellion took over the heart of the U.K. capital in a bid to focus global attention on rising temperatures and sea levels caused by greenhouse gas emissions.
- The grassroots group was established last year in Britain by academics and has used social media to become one of the fastest-growing environmental movements in the world.
- The group wants the government to “create and be led by the decisions of a Citizens’ Assembly on climate and ecological justice”.

Olive Ridleys

- Though Gahirmatha in Odisha is the preferred location for Olive Ridley's nestling, many turtles stop by in the intermediate beaches, lay their eggs and return to their source location.
- Each female digs a sandpit, lays 90 to 120 eggs and promptly closes the pit before leaving the shore.
- The turtles do not protect the eggs from predators such as dogs and jackals. This makes the role of the Forest Department important, and it has been taking care of the conservation part.

Species Extinction

- Up to one million species face extinction due to human influence, according to a draft UN report.
- The accelerating loss of clean air, drinkable water, forests, pollinating insects, protein-rich fish and storm-blocking mangroves — to name but a few of the dwindling services rendered by Nature — poses no less of a threat than climate change.

- Half-a-million to a million species are projected to be threatened with extinction, many within decades.
- The direct causes of species loss, in order of importance, are shrinking habitat and land-use change, hunting for food or illicit trade in wildlife body parts, climate change and pollution, the report finds.

Emperor Penguin

- The Antarctic's second-largest colony of emperor penguins collapsed in 2016, with more than 10,000 chicks lost, and the population has not recovered
- The colony at Halley Bay has all but disappeared.
- Emperor penguins — the world's largest — breed and molt on sea ice, chunks of frozen seawater.
- Awkward on land, they cannot climb icy cliffs and so are vulnerable to warming weather and high winds whipping across the ice.
- Still, the population in Halley Bay represents only about 8% of the world's population of emperor penguins, so the loss does not pose a threat to the future of the species.

Committee to Oversee Clean air Programme

- The Environment Ministry has constituted a committee to implement the National Clean Air Programme (NCAP), which aims to reduce particulate matter (PM) pollution by 20%-30% in at least 102 cities by 2024.
- The NCAP unveiled in January is envisaged as a scheme to provide the States and the Centre with a framework to combat air pollution. The committee would be headquartered in New Delhi and its remit includes ensuring "inter-ministerial organisation and cooperation, sharing information and resolving issues that could arise between ministries... The committee would also give overall guidance and directions to effectively implement the programmes," said a ministerial note.
- The NCAP is envisioned as a five-year action plan with 2019 as the first year. There would be a review every five years.
- For achieving the NCAP targets, the cities would be expected to calculate the reduction in pollution, keeping 2017's average annual PM levels as the base year.
- In 2018, 14 of the world's 15 most polluted cities were in India.
- The NCAP requires cities to implement specific measures such as "ensuring roads are pothole-free to improve traffic flow and thereby reduce dust" (within 60 days) or

“ensuring strict action against unauthorised brick kilns” (within 30 days). It doesn’t specify an exact date for when these obligations kick in.

- Experts have criticised the lack of mandatory targets and the challenge of inadequate enforcement by cities.

El Nino

- The country usually gets 89 cm of average rainfall from June to September.
- There is a 15% chance of a drought (seasonal rainfall less than 90% of the average).
- There is a 30% chance of normal (seasonal rainfall that is between 96%-104% of the long period average or LPA).
- There is a 55% chance of below normal (seasonal rainfall that is between 90%-95% of LPA).
- The key culprit is the El Niño — the warming of the central Pacific Ocean that’s frequently associated with drying monsoon rains.
- The Pacific Ocean has become strongly warmer than average.
- An El Niño is declared when three straight months register a 0.5-1 degree C rise in sea surface temperatures in the Central Pacific.

Jumping Spiders

- A group of jumping spiders that mostly occur in Eurasia and Africa, has been spotted for the first time in Kerala’s Illithodu forests.
- The spider belongs to the genus Habrocestum is a species new to science.
- The spider has a single long spine on the underside of both its first legs.
- The discovery lends support to the continental drift theory that suggests that the world’s continents were one large, contiguous landmass where these creatures thrived millions of years ago.

El Nino’s Impact on Monsoon

- El Nino is a phenomenon in the equatorial Pacific, in which sea-surface temperatures rise over a threshold of +0.5 degree Celsius (and cools by the same margin during alter ego La Nina).

- There are a few other acronyms which one comes across while tracking El Nino. For instance, the Southern Oscillation Index, or SOI, that gives an indication of the development and intensity of El Nino or La Nina.
- The SOI is calculated on the basis of the atmospheric pressure differences between Tahiti (South Pacific Ocean) and Darwin (Australia), separated by 8,569 km.
- Another acronym is the ENSO (El Nino Southern Oscillation) which refers to the oscillation between the El Nino and the La Nina. ENSO shifts irregularly back and forth between El Nino and La Niña every two to seven years.
- Under 'normal' conditions, though, the west tropical Pacific is warmer than its eastern basin. The warmer area of the ocean is also a source for convection and is associated with cloudiness and rainfall.
- During El Nino years, the warmth shifts to Central and East Tropical Pacific and along with it, cloudiness and rainfall.
- From 1950 to 2012, there were 16 La Nina years, with the monsoon rains ending up above or around average nearly every time. El Nino brought in five droughts during this period but on 14 other occasions, monsoon performance ranged from being well below-average, average, or even above-average.
- El Nino has been generally known to suppress monsoon rainfall in India while La Nina increases it. El Niño years tend to be drier than average, but one of the strongest El Nino of the century (1997-98) produced a monsoon season with above-average rainfall for India.

Factors other than El Nino That Impact Monsoon

- Scientists claim there may be other factors that combine with the prevailing Pacific conditions to decide the fate of the monsoon.
- Progressive heating of the land during April-May-June is one.
- The extent of the Himalayan/Eurasian snow cover is another. Less snow cover means a warmer subcontinent, which can help to intensify the monsoon circulation and bring more rain.
- Last but not the least is the 'dipole' effect nearer home, wherein the Indian Ocean mimics El Nino-La Nina in which the western and eastern basins warm up relative to each other every few years with associated impact on the monsoon. Warming up of the west Indian Ocean boosts a prevailing monsoon, and vice-versa.

Monsoon

- Monsoon rain in India is likely to be “normal” this year.
- Monsoon rainfall this year is forecast to be 96% of the Long Period Average (or 89 cm, which is a 50-year average of India’s monsoon rains).
- Strictly speaking, a 96% forecast is, in the IMD lexicon, “near normal.” This is just shy of ‘below normal’ (90%-96% of LPA) rain.
- The IMD’s optimism stems from global climate models projecting a weakening El Nino.
- The El Nino, a cyclic warming of the Central and Eastern Pacific region, has historically been linked to a weakening of monsoon rain.
- A temperature rise greater than 1 degree Celsius for three months at a trot is considered a “strong” El Nino (and threatening to the monsoon).
- A 0.5 degree Celsius-1 degree Celsius rise is called “weak El Nino conditions.
- Currently, the El Nino is 0.9 degree Celsius.

Long Period Average

- While releasing its monsoon forecast, the India Meteorological Department (IMD) expressed the projected rainfall in terms of Long Period Average (LPA), saying that it was expected to be 96% of LPA.
- The LPA of the monsoon season over the country is 89 cm, calculated for the period 1951-2000.
- This is the average rainfall recorded during the months from June to September, calculated during the 50-year period, and is kept as a benchmark while forecasting the quantitative rainfall for the monsoon season every year.
- Like the countrywide figure, IMD maintains an independent LPA for every homogeneous region of the country, which ranges from 71.6 cm to 143.83 cm.
- The region-wise LPA figures are: 143.83 cm for East and Northeast India, 97.55 cm for Central India, 71.61 cm for South Peninsular India, and 61.50 for Northwest India, which put together bring the all-India figure to 88.75 cm.
- The monthly LPA figures for the season are 16.36 cm for June, 28.92 cm for July, 26.13 cm for August and 17.34 cm for September.
- So, when IMD forecasts the category of rainfall, be it for country, region or month, the forecast is based on these standardised figures calculated for a period of 50

years. As per the outputs obtained from the weather models, the rainfall is categorised as normal, below normal, or above normal.

POLITY & GOVERNANCE

Electoral Bonds

- The Centre notified the Electoral Bond Scheme on January 2, 2018.
- As per provisions of the scheme, these electoral bonds may be purchased by a person, who is a citizen of India or a firm incorporated or established in India.
- Only registered political parties which secured not less than one per cent of the votes polled in the last general elections or state assembly polls shall be eligible to receive electoral bonds.
- These bonds are issued in denominations of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore.
- The sale of these bonds is opened once in every quarter for 10 days, and for a month ahead of general elections or as notified by the government.
- They are valid for only 15 days.
- However, for AFSPA to become valid, an area needs to be declared “disturbed” either by the Central or the state government under Section 3 of the Act.
- State Bank of India — the only bank authorised to issue and encash Electoral Bonds by the government — has issued bonds worth Rs 2,772.78 crore for funding political parties, since the scheme was launched on March 1 last year.
- The government had implemented the Electoral Bond scheme as an alternative to cash donations made to political parties as part of its efforts to bring transparency in political funding.
- The Supreme Court had earlier this month directed all political parties to submit details of political funding received so far to the Election Commission of India in “sealed covers” by May 30.
- The Mumbai main branch of SBI issued Electoral Bonds worth Rs 471.30 crore, followed by Rs 179.92 crore in Delhi and Rs 176.92 crore in Kolkata during the period of March 1-15 this year.
- Electoral Bonds are valid for 15 days from the date of issue. This means a bond issued on March 1, 2019, will be valid up to March 15, 2019.
- The bonds can be redeemed only by an eligible political party by depositing the same in its designated bank account maintained with an authorised bank.
- The bonds are issued in the denomination of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh and Rs 1 crore.

- The extant instructions issued by the Reserve Bank of India regarding 'know your customer' (KYC) norms of a bank's customer will apply for all applicants of the electoral bonds.

AFSPA

- AFSPA has partially been withdrawn from Arunachal Pradesh.
- The Act, which gives sweeping powers to security forces, was partially withdrawn from three of the state's nine districts, but would remain in force in the areas bordering Myanmar.
- AFSPA is declared in areas where armed forces are required to operate in aid to civil authorities.

Khasi States

- A federation of 25 Himas or Khasi kingdoms that have a cosmetic existence today, plan to revisit the 1948 agreements that made present-day Meghalaya a part of India.
- The revisiting in consultation with legal experts and academicians is aimed at safeguarding tribal customs and traditions from Central laws in force or could be enacted.
- The 25 Khasi states had signed the Instrument of Accession and Annexed Agreement with the Dominion of India between December 15, 1947, and March 19, 1948.
- The Khasi states, though, did not sign the Instrument of Merger unlike most other states in India.
- During the British rule, the Khasi domain was divided into the Khasi states and British territories. At that time, the British government had no territorial right on the Khasi states and they had to approach the chiefs of these states if they needed land for any purpose.
- After independence, the British territories became part of the Indian dominion but the Khasi states had to sign documents beginning with the Standstill Agreement that provided a few rights to the states.
- Though the Constitution has provided self-rule to a considerable extent through tribal councils, there has been an increasing demand for giving more teeth to the Khasi states.

AGRICULTURE

Project Trinitea

- Recognising the rising importance of small tea growers (STG) in the supply chain, tea estates in North India are testing a project called 'Trinitea,'
- The project aims at providing support to the STG at the farm and market level such as customised farm management, access to real time information on climate, soil and markets, etc.
- A MoU was signed between the Indian Tea Association (ITA) the apex body of North Indian tea producers and Solidaridad for jointly implementing this project.
- Solidaridad is a network which works to promote sustainable production of 13 commodities across nine regions globally.
- The STG sector's share in total Indian tea crop has been rising steadily and now constitutes 47% of the total production.

Agri Export Zones

- The concept of Agri Export Zone (AEZ) was introduced in 2001 to take a comprehensive look at a particular produce/product located in a contiguous area for the purpose of developing and sourcing the raw materials, their processing/packaging, leading to final exports.
- The concept hinged primarily on convergence of existing Central and State Government schemes to take care of financial interventions required at various stages of value chain, partnership among various stakeholders viz. Central Government, State Government, farmer, processor, exporter etc.; and focus on targeted products and areas to identify required policy interventions.
- In 2004, an review conducted by Department of Commerce concluded that the notified AEZs had not been able to achieve the intended objectives.
- It was decided that there will be no creation of new AEZs, unless there were strong and compelling reasons. No new AEZs have been set up after 2004.

National Bamboo Mission

- The restructured National Bamboo Mission (NBM) was approved in April, 2018 for implementation till the end of 14th Finance Commission i.e. 2019-20.
- The scheme aims to inter-alia supplement farm income of farmers with focus on the development of complete value chain of bamboo sector linking growers with industry.

- The scheme is being implemented in non-forest Government land, farmers field in States where it has social, commercial and economical advantage.

Interest Subvention

- With a view to ensuring availability of agriculture credit at a reasonable cost/at a reduced rate of 7% per annum to farmers, the Government of India, is implementing an interest subvention scheme of 2% for short term crop loans up to Rs.3.00 lakh.
- The scheme is implemented through public sector banks and private sector banks {reimbursement through Reserve Bank of India (RBI)}, Regional Rural Banks and Cooperatives {reimbursement through National Bank for Agriculture and Rural Development (NABARD)}.
- Currently, besides 2% interest subvention, the farmers, on prompt repayment of crop loans on or before the due date, are also provided 3% additional interest subvention.
- Thus, in case of prompt payee farmers the short term crop loans are provided at an effective interest rate of 4% per annum.
- The benefit of interest subvention is extended for a period of up to six months (post-harvest) to small and marginal farmers having KCC on loan against negotiable warehouse receipts with the purpose of preventing distress sale of produce.

KALIA

- The Odisha government has come up with a support scheme whose primary targets are small farmers, cultivators and landless agricultural labourers.
- Called KALIA, the scheme involves payments to encourage cultivation and associated activities.

INTERNATIONAL

Reiwa

- Japan revealed the name of the era that will define the new emperor's reign when he ascends the Throne next month following the first abdication in around 200 years.
- The new imperial name consists of two characters: "Rei", which can mean "order" but also "auspicious" and "Wa", usually translated as "peace" or "harmony."
- The two "kanji" characters were unveiled to reveal a name that will last as long as new emperor Naruhito's rule.
- The term "Reiwa" came from the "Manyoshu", an anthology of Japanese poems.
- It is the first time it comes from a Japanese text rather than Chinese.

WTO

- European Union (EU), Russia, and Costa Rica have expressed their interest to join consultations sought by Guatemala under the World Trade Organization's (WTO) dispute settlement mechanism against India's sugar subsidies.
- Thailand, Brazil and Australia too have sought consultations from India under the dispute settlement mechanism, alleging that India's sugar subsidies to farmers are inconsistent with global trade rules.
- The EU, Russia, and Costa Rica in separate communications to the WTO have said that they have substantial trade interest in these consultations as they are major players in the sector.
- Seeking consultation is the first step of dispute settlement process.
- If the two nations(India-Gautemala) are not able to reach a mutually agreed solution through consultation, India may request for a WTO dispute settlement panel to review the matter.
- Guatemala has said that India maintains various domestic support measures in favour of sugarcane and sugar producers.
- As per rules, other countries would have to seek approval from India and Guatemala to join the consultation process.

Australia

- Australia will fine social media and web-hosting companies up to 10% of their annual global turnover and imprison executives for up to three years if violent content is not removed “expeditiously” under a new law.
- Under the new laws, it is now an offence in Australia for companies such as Facebook Inc and Alphabet’s Google, which owns YouTube, not to remove any videos or photographs that show murder, torture or rape without delay.

The Order of Zayed

UAE has awarded Prime Minister Narendra Modi the country’s highest civilian award, ‘the Order of Zayed’.

World Bank

- David Malpass, a senior U.S. treasury official in President Donald Trump’s administration, was unanimously chosen as the president of the World Bank.
- Since the bank’s creation, all of its heads have been Americans, following an unwritten rule that also ensures European leadership at the top of its sister institution, the International Monetary Fund.

Mitra Shakti

- Sri Lanka has sought enhanced military training from India.
- Currently, over 60% of Sri Lanka’s military personnel pursue their young officers’ course, junior and senior command courses in India.
- Meanwhile, ‘Exercise Mitra Shakti’, the sixth edition of the joint military training exercise between the Indian Army and the Sri Lankan Army, concluded in Badulla district, in Sri Lanka’s Central Province.
- The two-week programme is part of an initiative that began in 2013 as part of military diplomacy between India and Sri Lanka.

Matara-Beliatta

- Sri Lanka has opened a new railway line, built with China’s assistance, connecting its coastal city of Matara and Beliatta in Hambantota, a move that will boost passenger traffic into the island nation’s deep south.

- The 26.75-km long Matara-Beliatta railway extension is the first to be constructed in Sri Lanka since 1948.

Mueller Report

Mueller report is a probe into whether Donald Trump may have colluded with Russia during the presidential campaign.

IRGC and FTO

- US has designated the Islamic Revolutionary Guard Corps (IRGC), including its Qods Force, as a foreign terrorist organisation (FTO).
- The designation as FTO will impose sweeping economic and travel sanctions.
- IRGC was set up in 1979 after Ayatollah Khomeini's Islamic Revolution as an ideologically-driven branch of the armed forces of Iran, to protect the newly established Islamic system from hostile foreign powers and internal dissensions.
- The IRGC is today a 125,000-strong force with ground, naval, and air wings, tasked with internal and border security, law enforcement, and protection of Iran's missiles.
- It controls the Basij militia, a semi-government paramilitary force estimated to have up to a million active members.
- The elite Quds Force or Qods Corps is an elite wing of the IRGC, reporting directly to Supreme Leader Ayatollah Ali Khamenei. It has perhaps 10,000-20,000 members, and carries out unconventional warfare beyond Iran's borders, often working with non-state actors such as the Hezbollah in Lebanon, Hamas and the Palestine.

Belt and Road Initiative

- China enlarges its circle in Europe.
- Italy and Greece have joined Belt and Road Initiative (BRI).

Notre-Dame

- Fire devastates Paris' iconic Notre-Dame cathedral.
- The cathedral is consecrated to the Virgin Mary and considered to be one of the finest examples of French Gothic architecture.

- Its innovative use of the rib vault and flying buttress, its enormous and colourful rose windows, and the naturalism and abundance of its sculptural decoration set it apart from the earlier Romanesque style.
- The cathedral was begun in 1160 under Bishop Maurice de Sully and was largely complete by 1260.

WTO Ministerial Meet

- Amid a global trade war, India will hold an informal ministerial meeting of the World Trade Organization (WTO) for a second time in just over a year.
- Citing soaring commercial tensions and tariffs, WTO this month trimmed its global trade growth projection for 2019 to the lowest level in three years.
- According to WTO, World merchandise trade growth will ease to 2.6 per cent this year and 3 per cent next year, after recording a 3 per cent rise in 2018.
- Separately, the International Monetary Fund (IMF), too, lowered its 2019 trade growth forecast last week by a sharp 60 basis points to 3.4 per cent, as against the actual rise of 3.8 per cent in 2018, citing the impact of the US-China trade war.

WTO ruling Against China

- The United States won a World Trade Organization (WTO) ruling against China's use of tariff-rate quotas for imported rice, wheat and corn, which it successfully argued limited market access for US grain exports.
- A WTO dispute panel ruled that under the terms of its 2001 WTO accession, China's administration of the tariff rate quotas (TRQs) as a whole violated its obligation to administer them on a "transparent, predictable and fair basis".
- TRQs are two-level tariffs, with a limited volume of imports allowed at the lower 'in-quota' tariff and subsequent imports charged an "out-of-quota" tariff, which is usually much higher.

International Fleet Review s

- The Indian Navy has sent two ships to take part in the International Fleet Review to be held in Qingdao, China.
- International Fleet Review is being held later as part of the 70th anniversary celebrations of the People's Liberation Army Navy.
- The Indian Navy had last held an International Fleet Review in February 2016, in which 50 navies of different countries took part with nearly 100 warships.

U.S. ends Waiver for India on Iran Oil

- The U.S. will not renew exemptions from its sanctions for importing oil from Iran.
- The exemptions were granted last November for a 180-day-period for India and seven other countries and are due to expire on May 2.
- India, China and U.S. allies Japan, South Korea and Turkey will be the most impacted by the non-renewal of waivers.
- The other three currently exempted countries — Italy, Greece and Taiwan — have already reduced their imports to zero. “We’re going to zero.

Medical Drone Service by Ghana

- Ghana launched a fleet of drones to carry medical supplies to remote areas.
- The drones are part of an ambitious plan to leapfrog problems of medical access in a country with poor roads. “
- The drones are planned to ferry 150 different medicines, blood, and vaccines to more than 2,000 clinics serving over 12 million people — roughly 40% of the population.
- Delivering of blood and medicine began in Rwanda in 2016, a country dubbed the “land of a thousand hills” where access to many villages by road is difficult.

Tummy Timetables

- The United Nations released its first-ever recommendations on physical activity for children under five.
- For infants under one, the WHO recommends at least 30 minutes of physical activity a day including prone position — or tummy time — for those not yet mobile.
- For children between one and two years old, WHO recommends three hours of physical activity each day.
- And for children aged three to four, three hours of daily physical activity should include at least an hour of “moderate to vigorous” movement.

WHO-Vaccination

- Despite immunisation being one of the most successful and cost-effective means to help children grow into healthy adults, worldwide 12.9 million infants — nearly 1 in 10 — did not receive any vaccination in 2016.

- What is worrying, says WHO, is the fact that “global vaccination coverage remains at 85%, with no significant changes during the past few years.
- According to WHO in 2017, the number of children immunised — 116.2 million — was the highest-ever reported.
- Immunisation prevents illness, disability and death from vaccine-preventable diseases including cervical cancer, diphtheria, hepatitis B, measles, mumps, pertussis (whooping cough), pneumonia, polio, rotavirus diarrhoea, rubella and tetanus.

BCIM, CMEC

- India’s decision to skip the Belt and Road Forum (BRF) may have led to the exclusion of the Bangladesh-China-India-Myanmar (BCIM) economic corridor from the list of projects covered by the Belt and Road Initiative (BRI) umbrella.
- South Asia is covered by three major undertakings — the China-Myanmar Economic Corridor (CMEC); the Nepal-China Trans-Himalayan Multi-dimensional Connectivity Network, including Nepal-China cross-border railway; and the China-Pakistan Economic Corridor (CPEC).
- The 2,800-km BCIM corridor proposes to link Kunming in China’s Yunnan province with Kolkata, passing through nodes such as Mandalay in Myanmar and Dhaka in Bangladesh before heading to Kolkata.
- Last September, the BRI had got a high octane boost when Myanmar inked an agreement with China to establish the CMEC. The 1,700-km corridor provides China yet another node to access the Indian Ocean.
- The CMEC will run from Yunnan Province of China to Mandalay in Central Myanmar. From there it will head towards Yangon, before terminating at the Kyaukpyu Special Economic Zone (SEZ) in the Bay of Bengal.

Loya Jirga

- Thousands of Afghans congregated in Kabul for a rare consultative meeting aimed at finding ways to negotiate a peace deal with the Taliban and end Afghanistan’s war.
- The four-day consultative grand assembly, known as a Loya Jirga, is an attempt by President Ashraf Ghani to influence peace talks between the United States and the Taliban.
- A Loya Jirga is aimed at building consensus among various ethnic groups and tribal factions and is traditionally convened under extraordinary circumstances.

India-US Pact to Check Tax Evasion

- Aimed at providing relief to subsidiaries of US multinationals and ensuring a check on cross-border tax evasion, India has notified the inter-governmental agreement with the United States for exchange of country-by-country (CbC) reports filed by multinational enterprises (MNEs) regarding income allocation and payment of taxes.
- This follows the two nations signing a pact in March for sharing the CbC reports by the ultimate parent corporations based in either of the countries.
- As per the agreement, it is intended to provide relevant and reliable information to perform an efficient and robust transfer pricing risk assessment analysis.
- It will also obviate the need for Indian subsidiary companies of US multinationals to do local filing of CbC reports, thereby reducing the compliance burden.
- A CbC report aggregates country-by-country information relating to the global allocation of income, taxes paid, and certain other indicators of an MNC. It also contains a list of all the group companies operating in a particular jurisdiction and the nature of the main business activity of each such constituent entity.

MISCELLANEOUS

LCU L56

- The sixth indigenously designed and built transport ship, LCU L56, has been inducted into the Navy.
- Amphibious operations capability, including transport of troops and equipment, will be enhanced with the addition of this Landing Craft Utility ship.

Dhanush

- The Ordnance Factory Board (OFB) handed over the first batch of six Dhanush artillery guns to the Army.
- Dhanush is the indigenously upgraded version of the Swedish Bofors gun procured in the 1980s.
- Indigenisation to the extent of about 81%, has already been achieved. By the end of 2019, the indigenisation level of the gun will go up to 91%.
- Dhanush has a range of 36 km.

Nirbhay

- India successfully test-fired its first indigenously designed and developed long-range sub-sonic cruise missile 'Nirbhay'.
- The missile can be deployed from multiple platforms.
- The missile is capable of loitering and cruising at 0.7 Mach at altitude as low as 100 metres.

AUSINDEX-19

- The Australian and Indian Navy have concluded a bilateral maritime exercise code-named AUSINDEX. on 14 Apr 19.
- It was the third edition of the exercise.
- For the first time, American and New Zealand military personnel witnessed the exercises during AUSINDEX-19.

Project 15B

- Project 15B ships feature cutting edge advanced technology and are comparable to the best ships of similar class anywhere in the world.
- These ships have been designed indigenously by the Indian Navy.
- Each ship spans 163 metres in length and 17.4 metres at beam and displaces 7,300 tonnes.
- P15B ships will be equipped to carry and operate two multiple role helicopters.
- With significant indigenous content, these ships are a true hallmark of self-reliance attained by our country in warship design and shipbuilding, and a shining example of the 'Make in India' philosophy.

Cyberex

India may still be far away from establishing a desperately-needed military cyber command but is now taking some steps to prepare for battles in the virtual world.

- The Indian armed forces will conduct a major cyber exercise or 'Cyberex' this week, which will include scenarios connected to cyber attacks on critical Indian infrastructure like strategic networks and power grids.
- Cyberex is the first such major joint exercise of the Army, IAF and Navy, under the aegis of integrated defence staff.
- The others involved in the twoday exercise are National Security Council Secretariat (NSCS), National Technical Research Organisation (NTRO), Defence Research and Development Organisation (DRDO), Indian Computer Emergency Response Team (CERT-In), National Informatics Centre (NIC), and Computer Security Resource Centre (CSRC).
- Cyberex and other such endeavours are required to prepare for challenges in the fifth dimension of warfare after the first four "real" battlefields of land, air, sea and space.
- operations, is coming up under a two-star general. The DCA, led by a naval officer, will involve an upgrade of the existing Defence Information Assurance and Research Agency.

Missile Deal

- The Army is in the process of procuring Spike-LR Anti-Tank Missiles from Israel and Igla-S Very Short Range Air Defence Systems (VSHORAD) from Russia through a set of new financial powers for emergency procurements sanctioned by the Defence Ministry earlier this month.

- Under the latest emergency financial powers, armed forces have been given a free hand to procure equipment worth up to ₹300 crore on a priority basis

Higher Education Rankings

- The Indian Institute of Technology, Madras (IIT-Madras) has topped the Centre's ranking of higher education institutions.
- The rankings are published annually since 2016.
- They are based on multiple parameters, including teaching, learning and resources; research and professional practice; graduation outcomes; outreach and inclusivity; and the perception of the public, academics and employers.

ITSSO

- As per the investigation tracking system for sexual offences (ITSSO) launched on February 19, the MHA cites Haryana, Delhi, Madhya Pradesh and Uttar Pradesh as the leading states/UTs in terms of completion of investigations within two months.
- ITSSO, set up by MHA is an online mechanism to monitor and track time-bound investigation in sexual assault cases.
- ITSSO is an analytical tool based on CCTNS data available right from the police station to national level.

Battle of Kangla Tongbi

- The Battle of Kangla Tongbi is considered one of the fiercest battles of World War II.
- Japanese forces had planned a three pronged offensive to capture Imphal.
- At Kangla Tongbi (Manipur), a small regiment put up stiff resistance against the advancing Japanese forces.
- The Platinum Jubilee of the Battle of Kangla Tongbi War was commemorated on 07 Apr 2019.

Ramappa Temple

- Telangana may get its first Unesco World Heritage Site- the Ramappa Temple.
- It is a Siva temple.

- It is perhaps the only one in the country that is known by the name of the architect rather than the king who commissioned it or its presiding deity.
- The temple belongs to the Kakatiya era.

Srinagar-UNESCO

- Jammu and Kashmir does not have any site or monument with the UNESCO inscription of a World Heritage Site.
- Since 2010, four sites in the state made it to UNESCO's "tentative list" for the World Heritage tag, the nomination dossiers for these sites are yet to take shape.
- If the nomination comes through, Srinagar will become the fourth Indian city — after Varanasi (Music), Jaipur (Crafts and Folk Art) and Chennai (Music) — to become part of the network of 180 cities, where development is believed to be intricately linked to their creative traditions.

Chicory

- Coffee planters in southern India expect higher sales of their produce once the draft notification of the Food Safety and Standards Authority of India (FSSAI) recommending a cut in chicory content comes into effect.
- Currently, coffee powders sold in the country have 49% chicory.
- The FSSAI's proposal to bring down chicory content in coffee to 30% is pending clearance.
- A reduction in chicory content will positively impact volume demand for coffee, in addition to helping consumers get pure coffee with natural aroma and flavour.
- Coffee sector had been going through tough times in the last several years due to falling prices, labour shortage, soaring labour costs, rise in fertilizer prices and vagaries of nature. All these have pushed up the cost of coffee production by 50%.
- Also, white stem borer (pest) attack has brought down arabica production by almost half.
- India produced 3.16 lakh tonnes of coffee during 2017-18 and exported 3.92 lakh tonnes. This included carry-forward stock from the previous years.
- The country imported 80,000 tonnes of coffee, the whole of which was meant for exports as soluble or instant coffees to Russia and other markets, while the country's domestic consumption for the year was 60,000 tonnes

Let the Noble ideas come to You from all sides !

