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MARCH 1

General Studies-01

High Arctic temperatures break records

News

- Arctic region is seeing record high temperatures, with the North Pole recently registering 30 degrees Celsius above normal for this time of year.

Beyond News

- At the same time, sea ice is covering the smallest area in the dead of winter since records began more than half-a-century ago.
- A weather phenomenon called a “**sudden stratospheric warming**” has produced North Pole temperatures at or above freezing.
- There are no permanent sensors at the North Pole, but weather services in the U.S. and Scandinavian countries reported temperatures peaking on February 25.
- At the Longyearbyen weather station on the Island of Svalbard in the Arctic Ocean, temperatures were 10 C above average over the last 30 days, according to Zack Labe, a climate modeller at the University of California Irvine.

General Studies-02

Telangana moves to mobile governance

News

- The government is going to bring out a law to ensure that all its services are available through mobile and in the near future, citizens can expect land registrations, revenue records and the likes to be available in the format.

150 services

- Right from today by downloading the app, citizens can avail up to 150 services of the GHMC, RTA, Police and T-Wallet and within a year another 1000 services will be added to it, said Meeseva and Electronics Service Delivery (ESD) Commissioner G.T. Venkateswara Rao.
- The IT Secretary said the mobile apps of all government departments will be dovetailed into T App Folio and it was ready to accept apps developed by the private sector having public utility like those dealing with women’s safety and tourism.

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General Studies-03

Cops Eye: New app to help police

News

- The Madurai police have come up with a new app “Cops Eye.” Based on face recognition feature, it would help them detect people with criminal backgrounds by clicking photographs with their mobile phones.



Beyond News

- It would take only few seconds to match the face of a person with the of data of 2,000 criminals from the city and Madurai rural police.
- The data of 2,000 criminals has their names, photographs and details of criminal cases.
- Taking photograph of any person whose data is available with the centralised criminal analysing system will give all particulars.
- It detects the criminal with 93% accuracy.
- The app comes with a password to protect the data.
- The rural police also launched six mobile two-wheeler patrol vehicles on the occasion.

Three astronauts back on Earth after months in space

News

- Three astronauts have landed safely in Kazakhstan after five-and-a-half-months of performing research and spacewalks in low-Earth orbit.

Beyond News

- The three were part of the Expedition 54 crew aboard the International Space Station (ISS).
- Vande Hei ventured outside the space station on four spacewalks to perform work that included replacing and lubricating the Latching End Effectors on both ends of the Canadarm2.
- Misurkin conducted one record-setting spacewalk with fellow cosmonaut Anton Shkaplerov to replace an electronics box for a high-gain communications antenna on the Zvezda service module in February.
- The spacewalk timed out at eight hours and 13 minutes, the longest in Russian space programme history. Misurkin now has spent 334 days in space on two flights.

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Waterbird species down by half in EGREE Region

News

- The number of water bird species has declined by half in most habitats across the East Godavari River Estuarine Ecosystem (EGREE) region.

Beyond News

- This was revealed during a census conducted in the region, including the Coringa Wildlife Sanctuary and parts of Mada forest and Papikondalu regions.
- It was found that the number of waterbird species has come down to half compared with the Asian Waterbird Census 2017.
- In the census, uncommon bird species such as Eurasian spoonbill or common spoonbill (*Platalea leucorodia*, Oyster catcher (*Haematopus ostralegus*) and Yellow bittern (*Ixobrychus sinensis*) were recorded.
- The Yellow bittern was not recorded in previous census.

Globally endangered

- According to Chief Executive Officer of EGREE and Chief Conservator of Forests, Rajamahendravaram region, a total of 23,779 birds of 85 waterbird species, including 34 migratory, 30 resident and breeding, five local migratory and 12 local or migratory species, were recorded.
- Of the 85 recorded species 57 are least concern, 17 were not evaluated, 10 of them were near threatened and one is globally endangered waterbird species.



MARCH 2

General Studies-01

Antarctica: a lab for climate change

News

Measurements taken last year by Chilean scientists on Doumer Island in Antarctica's Palmer Archipelago showed water temperature had risen to 2.5 degrees Celsius, up from its normal range of between 0 and 1.5 degrees. And at a depth of 130 feet, it was still at 2.0 degrees.

Beyond News

- A decade ago, a thick layer of ice covered the Collins Glacier on Antarctica's King George Island. Now, the rocky landscape is visible to the naked eye, in a region that is both a victim of and a laboratory for climate change.
- Observers can now see "rocks that we weren't seeing five or 10 years ago, and that is direct evidence of the shrinking of these glaciers and loss of mass.
- But even as these melting glaciers worry the scientific world, the presence in Antarctica of plants proving resistant to extreme conditions has also sparked hope for a warming planet.

Its Professor Julio Escudero complex on King George Island is where dozens of researchers are measuring the effects of climate change on native flora and fauna.

- The warming waters have attracted species previously unseen in the Antarctic, such as a spider crab normally found south of Chile.
- Antarctica holds 62 % of the planet's freshwater reserves, so the melting there could have far-reaching consequences, not least by diminishing the salinity of the seas, which could prove fatal for many marine species.
- Already, Antarctic plants – which are resistant to ultraviolet radiation and extreme conditions – are being used in biotechnology to give us products such as sun protection lotion, antioxidants and natural sugars.

General Studies-02

India, Jordan firm up security cooperation

News

India and Jordan signed a framework agreement in defence cooperation paving the way for a joint strategy to counter common threats.

Beyond News

Defence agreement, the first such understanding between the two sides, is the biggest takeaway of the visit by the Jordanian king Abdullah II.

A press release from the Ministry of External Affairs (MEA) informed that the purpose of the MoU is to promote cooperation between India and Jordan in the field of defence by defining the scope of such cooperation and making provisions for implementation of the cooperation in some of the recognised areas like training; defence industry; counter-terrorism; military studies; cyber security; military medical services, peace-keeping, etc.

The defence agreement is the result of broadening security and defence-related



dialogue between the two sides since the king's last visit in 2006.

General Studies-03

Pavagada solar park inaugurated

News

Karnataka Chief Minister inaugurating the first phase of the Pavagada solar park, which is set to become the world's largest when it attains its full potential of 2,000 MW.



Beyond News

- The first phase of the park has 600 MW while another 1,400 MW will be added by December 2018.
- It is located in Thirumani of Tumakuru district and has been christened 'Shakti Sthala'.
- Chief Minister termed the solar park as the "Eighth among Wonders of the World" built at an estimated cost of 16,500 crore.
- Setting up the world's largest solar park is an important milestone in the history of Karnataka.

12 Naxalites, policeman killed in gunfight on Telangana-Chhattisgarh border

News

About 12 Naxalites and a Greyhound police constable were reported killed in an encounter in the Tadapalagutta and Pujari Kanker forest areas bordering Chhattisgarh and Telangana.

Beyond News

- Deceased constable Sushil belonging to Vikarabad of Telangana district. Two other policemen were also stated to be injured.
- According to information reaching Chhattisgarh's Bhulapally that borders Telangana, police recovered two AK 47 and eight other weapons from the encounter scene.

UN spotlight on Kerala's energy-positive campus

News

The Energy Management Centre (EMC), an autonomous institution under the Kerala government, has grabbed the global spotlight for its energy-positive campus, located at Sreekaryam in the State capital.

Beyond News

- The ‘Global Status Report 2017: Towards a zero-emission, efficient, and resilient buildings and construction sector,’ published by the United Nations Environment Programme (UNEP), listed the EMC campus as one of the recent achievements in the deployment of key technologies for energy-efficiency in buildings.
- The 40,000-square foot building is the only one from India to figure in the list, along with five other projects worldwide.

According to the report, the EMC’s energy-positive campus was designed to allow natural cross-flow ventilation from building forms and openings.

- The campus is equipped with a 30-kilowatt grid-connected solar capacity that exports around 50 kWh a day on an average, with a doubling of the capacity under implementation.
- Built with assistance from the Global Environment Fund, the EMC campus is the only LEED Gold certified building in the government sector in Kerala. Up to 94% of the built-up space is daylight illuminated.

NBA calls for plan to manage import of exotic fish



News

Increase in the import of ornamental fishes to the country, which is posing a threat to India’s native fish populations, the National Biodiversity Authority (NBA) has urged the government to come up with quarantine facilities at major seaports and airports.

Beyond News

- The government of India has only approved the import of 92 species of ornamental fish but the number of ornamental fish species being imported and in trade is somewhere between 200-300.
- The huge market for Invasive Alien Species (IAS) is turning out to be major threat to India’s aquatic biodiversity.
- The paper states that several studies have disclosed the occurrence of exotic ornamental fish in many inland aquatic systems, including biodiversity-sensitive areas such as the Western Ghats.

MARCH 3

General Studies-01

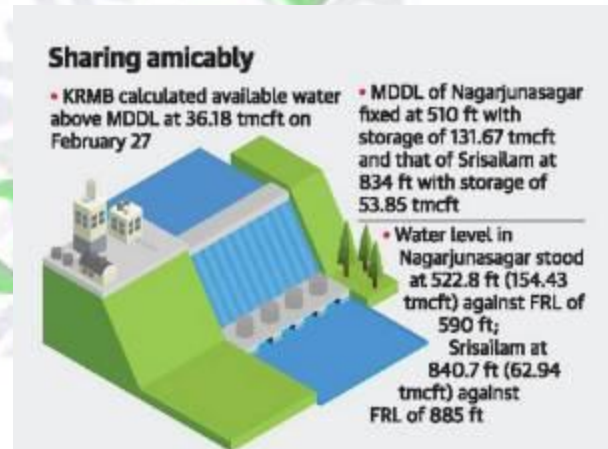
Spells of heavy rainfall see two-fold increase

News

- Very heavy rainfall lasting less than 24 hours (sub-daily) in urban locations in India has become more intense during the last few decades.

Beyond News

- Researchers said that, the frequency of sub-daily rainfall extreme has also witnessed a two-fold increase between 1979 and 2015.
- Currently, rainfall data is reported on 24-hour basis and long-term sub-daily observations are limited. In cities, heavy downpour for less than an hour can create urban flooding due to large impervious area.
- Since heavy rainfall for less than an hour causes flooding and deaths, it is now necessary to record the amount of rainfall every 15 minutes especially in the urban areas.
- Most of the previous studies have considered changes in atmospheric moisture on account of local or global change in climate warming (thermodynamic).
- But extreme precipitation is also linked to variations in atmospheric motion and vertical wind velocity (dynamic).
- For 1 Kelvin temperature increase, the half-hourly rainfall extreme increases by about 10%, while it is only about 6% in the case of daily rainfall extreme.



Reasons

- Both large-scale change in climate warming and localised heating due to urban heat island effect could be contributing to increased air temperature in cities leading to intense rainfall.

General Studies-02

KRMB panel allows AP to draw 9 tmc ft water for irrigation

News

- The row over utilisation of Krishna waters between Andhra Pradesh and Telangana has subsided for the time being with the three-member committee of Krishna River Management Board (KRMB) allowing them to avail 33 tmc ft water till the month-end for meeting immediate irrigation needs.

Beyond News

- The three-member panel allowed AP to utilise 9 tmc ft and Telangana 24 tmc ft water to protect the standing crops under Nagarjunasagar Right and Left Canal systems.
- Official sources said that about 15 tmc ft out of 33 tmc ft to be drawn by the two States would be released from Srisailem to Nagarjunasagar after generation of power.
- The dispute over utilisation of water reached a flash point on February 28 when the irrigation officials and police from the two sides gathered at Srisailem Right Canal regulator at the reservoir site, following orders issued by KRMB to stop water release to the canal.
- The river board has asked the two States to coordinate among themselves on release of water to Nagarjunasagar Right and Left Canal systems to save the standing crop.

Diabetes has five types, say scientists

News

- Scientists unveiled a revised classification for **diabetes**, could lead to better treatments and help doctors more accurately predict life-threatening complications from the disease.

Beyond News

- There are five distinct types of diabetes that can occur in adulthood, rather than the two currently recognized.
- People with diabetes have excessively high blood glucose, or blood sugar, which comes from food.
- Some 420 million people around the world today suffer from diabetes, with the number expected to rise to 629 million by 2045, according to the International Diabetes Federation.

Current types of diabetics.

- **With type-1** — generally diagnosed in childhood and accounting for about 10% of cases the body simply doesn't make insulin, a hormone that helps regulate blood sugar levels.
- **For type-2**, the body makes some insulin but not enough, which means glucose stays in the blood.

Issues with current classification:

- This form of the disease correlates highly with obesity and can, over time, lead to blindness, kidney damage, and heart disease or stroke.
- It has long been known that type-2 diabetes is highly variable, but classification has remained unchanged for decades.

- By isolating measurements of insulin resistance, insulin secretion, blood sugar levels, age, and the onset of illness, they distinguished five distinct clusters of the disease three serious and two milder forms.
- Among the severe types, a group of patients with insulin resistance in which cells are unable to use insulin effectively was at far higher risk of kidney disease.

New groups:

- **The third “severe” group** were people with auto-immune diabetes corresponding to the original “type-1” diagnosis.
- **The two other groups** have milder types of the disease including one, which includes about 40% of the patients, beset with a form of diabetes related to advanced age.

India to help build nuclear plant in Bangladesh

News

- India, Bangladesh and Russia have signed a tripartite memorandum of understanding (MoU) for cooperation in the construction of the Rooppur **nuclear power** plant in Bangladesh.

Beyond News

- The MoU was signed in Moscow by the Department of Atomic Energy of India, the Ministry of Science and Technology of Bangladesh and Rosatom.
- **Russia** is building the nuclear power plant in Bangladesh on a turnkey basis.
- Indian companies can be involved in construction and installation works and in the supply of equipment of a non-critical category .

General Studies-03

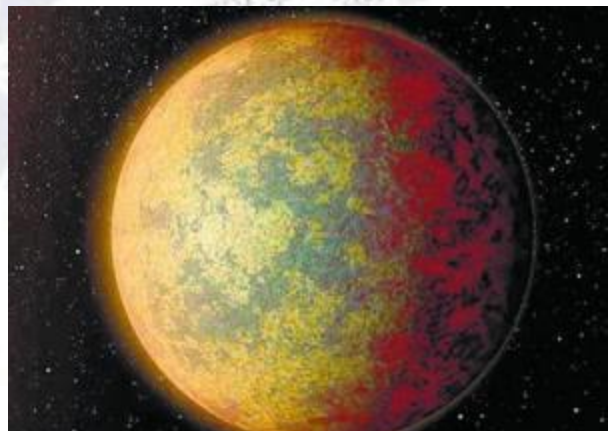
Water detected in exoplanet’s atmosphere

News

- Astronomers have detected a large amount of water in the atmosphere of a hot, Saturn-mass exoplanet some 700 light-years away.

Beyond News

- NASA said that ,the planet, known as WASP-39b, has three times as much water as Saturn does.
- Researchers said that,though no planet like this resides in our solar system, WASP-39b can provide new insights into how and where planets form around a star.



MARCH 4&5

General Studies-01

Papua New Guinea quake leaves 67 dead as aftershocks rock homes: Red Cross

News

At least 67 people were killed by a major earthquake that devastated Papua New Guinea's remote highlands last week, with thousands homeless and without food and clean water.

Why its important? This makes Earth quake & Papua New Guinea relevant for examination.

Beyond News

The recovery effort has been slow as aid workers grapple with blocked roads and power outages to reach cut-off villages after the 7.5-magnitude quake struck on February 26 in the Pacific nation's mountainous interior.

Terrified locals in the Southern Highlands, Western, Enga and Hela provinces have also had to deal with strong aftershocks, including two 6.0-magnitude tremors.

Compounding the fallout was an announcement today that the impoverished country's biggest-ever development the PNG LNG project operated by US energy giant ExxonMobil will be offline for up to eight weeks as the quake-hit facilities undergo repairs.



The Australian and New Zealand defence forces have begun delivering aid, while the China Red Cross and Beijing have pledged financial assistance.

NASA observes dramatic rise in sea levels

News

A NASA study says that, the sea level may rise twice as high by 2100 as previously estimated because of climate change.

Beyond News

According to findings, rise in sea level may increase by up to 65 centimetres in the next 80 years, which will do to cause significant problems for coastal cities.

This is believed to be a conservative estimate by scientists.

General Studies-02

Cars of President, V-P to have number plates

News

The Ministry of Road Transport and Highways has informed the Delhi High Court that it has written to the authorities concerned to get these high security vehicles registered.



Beyond News:

Parting with the practice of displaying just the State Emblem of India, the vehicles of constitutional authorities and dignitaries, such as the President, the Vice-President, Governors and Lieutenant-Governors, will soon have to display their registration numbers.

Security issue

The Ministry's response came in the backdrop of a petition, filed by NGO Nyayabhoomi, which claimed that the practice of displaying the state emblem, instead of the registration numbers, make the cars conspicuous, and the dignitaries may become easy targets for terrorists or anyone with malicious intent.

General Studies-03

Road kills of wild animals in the Ghats

News

The roads that Valparai's tourists love driving through to spot wildlife also see numerous animal deaths. Road surveys show that almost 3,000 animals died on approximately 1,500 km of roads in Tamil Nadu's Valparai plateau in 2011-12 alone.

Beyond News

Along with people, animals including endangered Asian elephants and lion-tailed macaques – also live on this high-elevation plateau.

However, fragmentation of habitats ensures that wildlife have to cross roads when they move about. A study recorded 73 reptile deaths on the Valparai roads in 2001; mammal and insect deaths are also frequent here.

Scientists of the Nature Conservation Foundation (NCF) walked along eleven road sections passing through various habitats in the Valparai plateau. They noted roadkills of all animal taxa across seasons (surveying



totally 1473.4 kms, including a State Highway) in 2011-12.

Findings

The results show that 2,969 animals died on Valparai's roads during this time, which translates approximately to an average of 21 animals per 10 km of road.

Almost 50% of these kills comprised amphibians — toads, frogs and caecilians (limbless, snake-like amphibians). Rodents and shrews comprised a majority of the 148 mammal kills.

The Indian crested porcupine, the brown palm civet (a fruit-eater endemic to the Western Ghats), larger mammals like sambar deer and endemic lion-tailed macaques also figured in the list of mammal roadkills.

findings could help identify specific management measures for different habitats to prevent or reduce roadkills in Valparai and similar places.

Roads through forest patches need urgent attention because forest-dependant and endemic species died most here. Drains along roadsides with underpasses at regular intervals can also provide safe passages for small-sized taxa like amphibians.

Iraq pips Saudi Arabia to become India's top crude oil supplier

News

Iraq has overtaken Saudi Arabia by a wide margin to become India's top crude oil supplier, meeting more than a fifth of the country's oil needs in the current financial year.

Beyond News

Saudi Arabia traditionally was India's top oil source but in the April-January period of 2017-18, Iraq dethroned it, supplying 38.9 million tonnes (MT) of oil.

Despite India cutting imports over delays in award of contract for a gas field development, Iran continued to be the third largest supplier selling 18.4 MT during April-January.

This is the second year in a row that Iran has occupied the third position.

India's dependence on West Asia for its crude oil needed has increased from 58 per cent in 2014-15 to 63.7 per cent in the April-January period of this fiscal.



MARCH 6

General Studies-01

India's child marriage numbers drop sharply, driving down global rate, says UNICEF

News

The proportion of girls getting married in India has nearly halved in a decade, the United Nations children's agency UNICEF said, which has contributed significantly to a global decline in child marriage.

Findings

- UNICEF said 25 million child marriages were prevented worldwide in the last decade, with the largest reduction seen in South Asia where India was at the forefront.
- India constitutes more than 20% of the world's adolescent population and accounts for the highest number of child marriages in South Asia given its size and population.

In the current trend, 27% of girls, or nearly 1.5 million girls, get married before they turn 18 in India. This is a sharp decline from 47% a decade ago.

- UNICEF estimates that 12 million girls a year are married globally, and says more is needed to end the practice by 2030 the target set under the U.N.'s Sustainable Development Goals.
- The legal age of marriage in India is 18 for women and 21 for men. Last year the Supreme Court ruled that sex with an underage wife constituted rape.

India's Prohibition of Child Marriage Act imposes a fine of 1,00,000 and two years in prison for parents caught trying to marry off their underage children.

Japanese volcano erupts, dozens of flights grounded



News

A volcano in southern Japan has erupted, shooting smoke and ash thousands of metres (feet) into the sky and grounding dozens of flights to and from a nearby airport.

Beyond News

- The Meteorological Agency says the Shinmoedake volcano erupted violently several times , shooting up ash and smoke up to 2,300 metres (7,500 feet) in its biggest explosion since 2011.
- It said some lava was rising from inside a crater at the volcano.
- The volcano has had smaller eruptions since last week.
- Entry to the 1,421-km-high volcano was restricted. About 80 flights in and out of the nearby Kagoshima airport were canceled.

Japan has 110 active volcanoes.

General Studies-02

Bengaluru's first helitaxi service takes off

##Not much important. Still it's good to know this.

News:

App-based taxi service took on a whole new meaning when Bengaluru's first helitaxi service took off, ferrying passengers from Kempegowda International Airport (KIA) to Electronics City in 15 minutes.



Beyond News

The helitaxi, touted to be the first such service in the country, was announced in August 2017 . The service is being offered by KIA in partnership with Thumbby Aviation Pvt Ltd, in an effort to reduce the time taken to travel to the city from the international airport.

General Studies-03

Maoists torch 2 Telangana State buses, 4 private buses in Sukma district of Chhattisgarh

News

An alert has been sounded up in Bhadrachalam Agency, the tribal heartland of Telangana, following the killing of a youth and torching of two Telangana State buses and four private vehicles, allegedly by Maoists, in the insurgency-hit Sukma district of Chhattisgarh.

Beyond News

In an apparent retaliatory action to the killing of 10 Maoists in an alleged encounter in Chhattisgarh's Bijapur district, Maoists allegedly killed the youth, who is believed to be one of the passengers of a bus, and set ablaze the two TSRTC buses, both belonging to Hyderabad-II depot, when they were heading towards Hyderabad from Jagdalpur and Bailadilla in Chhattisgarh respectively.



The incident prompted the Bhadrachalam sub-division police to beef up security and intensify vehicle-checking operations along the inter-State border.

Vehicle checking has been intensified in coordination with the CRPF personnel.

Threat of new malware looms over cyberspace

News

After Mirai and Reaper, cybersecurity agencies have detected a new malware called Saposhi, which is capable of taking over electronic devices and turning them into 'bots', which can be then used for any purpose, including a Distributed Denial Of Service attack which, with enough firepower, can cripple entire industries.

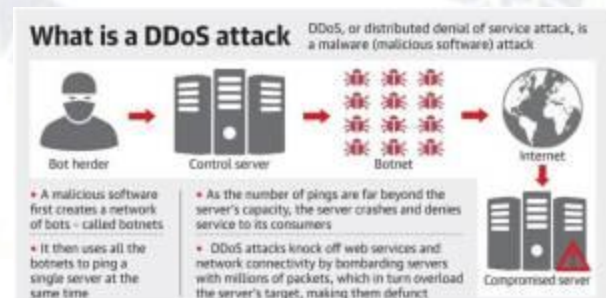
Being monitored

Saposhi is similar in its intensity to Reaper, which was taking over millions of devices at the rate of 10,000 devices per day. Various cyber security agencies are currently keeping tabs on it to get a better idea of what it is capable of.

In October last year, the Computer Emergency Response Team (CERT), a central government body that deals with cyber attacks, had issued an alert about reaper, a highly evolved malware capable of not only hacking devices like WiFi routers and security cameras, but also able to hide its own presence in the bot a device taken over by a malware.

Beyond News

Malwares like Saposhi, Reaper and Mirai are primarily aimed at DDoS attacks, in which the malware first creates a network of bots called a



botnet and then uses the botnet to ping a single server at the same time.

As the number of pings are far beyond the server's capacity, the server crashes and denies service to its consumers.

In 2016, Mirai, using a botnet of 5 lakh devices, had caused the servers of Dyn, a leading domain name service provider, to crash, affecting services of popular websites like Twitter, Netflix and Reddit.

MARCH 7

General Studies-02

Aadhaar not mandatory for NEET, other all India exams: Supreme Court

News:

The Supreme Court directed the CBSE (Central Board of Secondary Education) not to make Aadhaar number mandatory for enrollment of students appearing in NEET (National Eligibility cum Entrance Test) 2018 and other all India exams.

Beyond News:

- A five-judge Constitution Bench, directed the CBSE to upload the information on their website.
- Attorney General had instructions from UIDAI that like in Jammu and Kashmir, Meghalaya and Assam, other identity proofs like passport, voter card and ration card can be used by the CBSE for enrolling students in the examination.
- The UIDAI's remarks came on a plea challenging the CBSE's decision seeking Aadhaar number or Aadhaar enrolment number from students who are aspiring to take up the NEET.

TB patients to get nutritional support

News:

Tamil Nadu will roll out a programme of providing nutritional support for tuberculosis patients from April.

Beyond News:

- Payments at the rate of 500 per month will be deposited in bank accounts of patients in three instalments during the period of



treatment, which is typically six months but can be longer.

- The programme will be piloted at the Government Hospital of Thoracic Medicine, Tambaram, and then extended to the rest of the State.
- The scheme, announced in the Union Budget last month with a total allocation of 600 crore, has been welcomed by doctors and experts.
- Under the Revised National Tuberculosis Control Programme (RNTCP), which provides free treatment to patients in the government sector, guidance provided to patients on nutrition is limited.

The Central TB Division, last year, released a guidance document on nutritional care and support.

General Studies-03

A new state of matter created

News

An international team of physicists have successfully created a “giant atom” and filled it with ordinary atoms, creating a new state of matter termed “**Rydberg polarons**”.

These atoms are held together by a weak bond and is created at very cold temperatures.

How was the new polaron created?

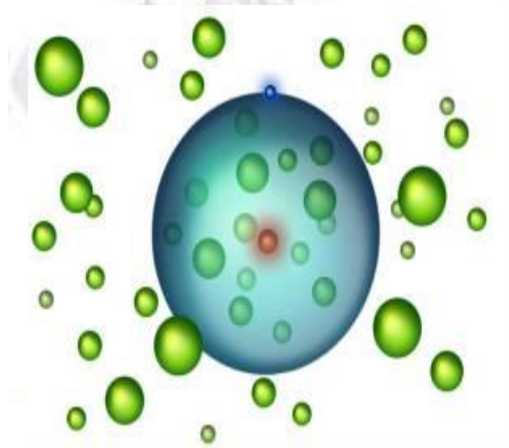
- It uses ideas from two different fields: Bose Einstein Condensation and Rydberg atoms.
- A BEC (Bose Einstein Condensate) is a liquid-like state of matter that occurs at very low temperatures. A BEC can be perturbed to create excitations which are akin to ripples on a lake. Here, the authors have used a BEC of strontium atoms.
- Electrons in an atom move in regular orbits around the nucleus, somewhat like planets around the sun.
- A ‘Rydberg atom’ is an atom in which an electron has been kicked out to a very large orbit. These have interesting properties and have been studied for a long time.

In this work, the authors used laser light on a BEC of strontium atoms so that it impinges on one strontium atom at a time. This excites an electron into a large orbit, forming a Rydberg atom. This orbit is large enough to encircle many other strontium atoms inside it.

As the electron moves around many strontium atoms, it generates ripples of the BEC. The Rydberg atom becomes inextricably mixed with these ripples and forms a new super-atom called a ‘Rydberg polaron’.

Use of Rydberg polarons:

- A particularly interesting implication is for cosmology.



- Some theories of dark matter postulate that it is a cosmic Bose Einstein Condensate, perhaps composed of an as-yet-unknown type of particle. If we are indeed living in an invisible all pervading Bose Einstein Condensate, this experiment can suggest ways to detect it.

India to join multilateral lender EBRD

News

India has got the go-ahead to join the European Bank of Reconstruction and Development (EBRD), after shareholders of the London-based multilateral lender agreed to the country becoming its 69th member.

Beyond News

It enable Indian companies to undertake joint investments in regions in which the EBRD operates.

Set up in 1991, based on a proposal by former French President Francois Mitterand, the bank's initial focus was helping central and Eastern European nations reconstruct their economies in the post-Cold War era.

It remains committed to furthering the development of “market-orientated economies and the promotion of private and entrepreneurial initiative.”

Indian businesses have already cooperated on EBRD projects worth some €982 million, the hope is that the membership, which will see India take up a small stake in the bank.

India's stake will also give it a say in the direction of the EBRD's future work.

Following the approval of Indian membership, India is expected to join EBRD within the first half of the year.

The EBRD works with the private sector and also local governments in the provision of services and infrastructure across 38 nations with projects ranging from transport provision to agribusiness, heating, waste management, to renewable energy.

Scientists on overdrive to save world's last white rhino

News:

As the health of the world's last male northern white rhino declines in Kenya, a global team of scientists and conservationists is making effort to save the subspecies from extinction with the help of the two surviving females.

Beyond News:

They are trying to create rhino embryos through in vitro fertilization and its success depends not



on the sick, elderly male named Sudan, but on his daughter Najin and granddaughter Fatu, whose eggs would likely have to be extracted because the rhinos can't reproduce naturally.

Semen from dead northern white rhinos is stored in various locations around the world, and it is critical to keep the two females alive "until such time when the protocol or technique for in vitro fertilization has been perfected.

MARCH 8

General Studies-01

Tribal festival begins

News

- A two-day tribal festival organised by the Ministry of Tribal Affairs and the **Karnataka** State Tribal Research Institute, got under way in the city.

Objective of the festival

- The objective of the festival is to create awareness, promotion and dissemination of tribal culture and traditions.
- Besides, it is also expected to generate awareness of the richness and the diversity of the tribal culture among the urban population.
- A release said such festivals also help provide the Scheduled Tribe communities an opportunity to conduct cultural activities and showcase the same to the public.
- About 45 tribal communities from Mysuru, Kodagu, Chamarajanagar, Chikkamagaluru are participating in the festival.



General Studies-02

Karnataka takes historic decision to have separate State flag

News:

Karnataka government took a historic decision to have separate State flag.



Beyond News

- The decision was taken at a meeting convened by Chief Minister to discuss the recommendations of the nine-member flag committee.
- The committee had recommended yellow, red and white with the State emblem in the middle.
- The meeting was attended by representatives of Kannada organisations, litterateurs and official representatives.
- Chief Minister said that, the “government, which felt the need of having separate flag, lent voice to the demand by setting up expert committee to decide on colour and emblem of the State flag.”
- In the tri-colour State flag, white symbolises peace with State emblem. While yellow symbolises the auspiciousness and well-being of Kannadigas, the red colour symbolises courage.
- If centre agrees to the proposal, Karnataka will be second state in the country to have a separate State flag, after Jammu and Kashmir. This is due to J&K’s special status under the Constitution.

Free education for girls from April 1

News

- Free education for girls from primary level to post-graduation — which was announced in the budget will be implemented from April 1.

Beyond News

- Chief Minister reiterated his budget promises such as free bus passes for students, and also spoke about the free laptop scheme for first-year students.

Higher Education Minister said the State government would set up 16 new residential degree colleges to help students from economically weak backgrounds complete their higher education.

General Studies-03

Scientists discover antibiotic-producing bacterium

News

- A novel species of a bacterium that produces antibiotic has been discovered .

Beyond News

- The newly discovered bacterium, *Planctopirus hydrillae*, may provide a solution to the problem of diseases becoming resistant to a majority of known drugs.
- The new bacteria would also clean up ammonia waste, a growing environmental concern.
- Scientists have been striving hard to find drugs to overcome the challenge of antimicrobial resistance in the wake of disease-causing germs failing to respond to even the most potent antibiotics.

- In this scenario, the discovery of antibiotic-producing Planctomycete may help in the development of a new drug.
- The bacterium was isolated from aquatic plant Hydrilla.



TNERC suggests 30% lower tariff for wind, solar power

News:

- A consultative paper of the Tamil Nadu Electricity Regulatory Commission (TNERC) has suggested a benchmark tariff of Rs. 2.86 per unit for wind energy and Rs. 3.11 per unit for solar energy, an over 30% fall from previously fixed tariffs.

Beyond News:

- The suggested tariffs are also cheaper than thermal power, whose average cost is Rs. 4 per unit.
- States are also procuring wind and solar energy through competitive bidding, a process which could drive the prices even lower than the benchmark rates.
- The consultative paper has fixed a rate of Rs. 2.86 per unit without accelerated depreciation and Rs. 2.80 per unit with accelerated depreciation benefits [for wind energy].
- Reports broadly suggest reduction in the prices of wind power turbines to an extent of 20% in the last two years.
- The recent auctions show that the developers have adopted a combination of various factors that have brought down the per unit price of wind energy.

MARCH 9

General Studies-02

SC Constitution Bench holds passive euthanasia, living wills permissible

News

In a historic decision, the Supreme Court declared passive euthanasia and the right of persons, including the terminally ill, to give advance directives to refuse medical treatment permissible.

Beyond News

A Constitution Bench upheld that the fundamental right to life and dignity includes right to refuse treatment and die with dignity.

The fundamental right to a “meaningful existence” includes a person’s choice to die without suffering, it held.

The court said it was time to dispense with such shared suffering and sense of guilt and face the reality. Doctors who attended on the terminally ill were under pressure and dithered in letting the patient go, apprehending criminal liability and fear of being drawn into the “vortex” of a possible family struggle for inheritance.

Justices, said though religion, morality, philosophy, law and society shared equally strong and conflicting opinions about whether right to life included right to death, they all agreed that a person should die with dignity.

The Chief Justice’s judgment includes specific guidelines to test the validity of a living will, by whom it should be certified, when and how it should come into effect, etc. The guidelines also cover a situation where there is no living will and how to approach a plea for passive euthanasia.

The issue of death and when to die transcended the boundaries of law, but the court had intervened because it also concerned the liberty and autonomy of the individual.

WHO launches plan for cheaper TB drugs

News

The World Health Organisation (WHO), invited pharmaceutical companies around the world to submit proposals to manufacture affordable versions of newer medicines for treatment of drug resistant tuberculosis.

Beyond News

Competition among Indian drug producers had then brought down the price of HIV medicines by 99% from \$15,000 per patient per year to less than a dollar a day.

WHO has now requested drug makers to submit an Expression of Interest (EoI) for Bedaquiline and Delamanid, two new-generation drugs, recommended for drug resistant-TB. Under WHO norms, drugs submitted upon such requests and complying with its standards are included in a list for procurement by the UN and other organisations.

India has nearly 1.3 lakh DR-TB patients, the most in the world, but the Health Ministry gets only 10,000 doses of Bedaquiline and 400 doses of Delamanid. The medicines are obtained as donations from Janssen (US) and Otsuka Pharmaceuticals (Japan), the respective manufacturers.

One of the aims of pre qualification is to ensure that a greater number of manufacturers are supplying quality medicines, which in turn



means a more competitive market and more affordable prices.

Cheaper drugs to treat HIV became possible at the time as the Indian Patents Act did not provide for product patents on pharmaceutical products, until required by the Trade Related Intellectual Property Rights (TRIPS) framework of the World Trade Organization (WTO). India became TRIPS compliant with pharma product patents in 2005.



General Studies-03

Trump threatens to impose “reciprocal tax” on India, China

News

United S President Donald Trump threatened to impose “reciprocal tax” on countries like China and India if they do not match America’s tariff.

Reciprocal tax

A reciprocal agreement, also called reciprocity, is an agreement between two states that allows residents of one state to request exemption from tax withholding in the other (reciprocal) state.

Beyond News

Mr. Trump has, in recent days, spoken a number of times about the 50 per cent duty that India levies on high-end motorbikes that Harley-Davidson, an American company, sells in India. He has repeatedly insisted that the US levies “zero” duty or “nothing” on motorbikes imported from India.



- The US President said the stage for the imposition of reciprocal tax has been set in the first year of his administration.
- China charged 25 per cent duty on American cars whereas it was just 2.5 per cent on import of Chinese cars into the US.
- Mr. Trump also said the “reciprocal tax” programme would ensure “fair trade deals” for the US.

Mumbai ranks 47th on wealth index

News: India has the potential to become the third-largest contributor in Asia with respect to wealthy population after China and Japan, according to the Knight Frank Wealth Report 2018.

Findings in the Report.

Report said that, at 54%, India has recorded one of the fastest growths in its super prime population (individuals with net worth of over \$50 million) between 2012 and 2017, and will add more than 2,000 such individuals at a higher growth rate of 71% by 2022.

As per the report, which was unveiled globally, Mumbai ranked 47th on the city wealth index among 314 global cities.

Mumbai also figures among the top 20 costliest global cities, where \$1 million can buy only 92 square metres of real estate.

The report said Mumbai and Delhi would be among the top 10 markets to witness the highest addition in households earning more than \$250,000 annually between 2017 and 2022.

In terms of wealth alone, wherein the index measures the number of the ultra-high net worth individuals (UHNWIs), high net worth individuals (HNWIs) and rate of wealth generation in a city, Mumbai ranks in the top 20 with Delhi coming in 22nd and Bengaluru 26th.

As per the findings property investment was amongst the lowest (17%) contributing factors that led to increase in wealth amongst Indians, compared to 30% for Asia and 50% globally.

The investment allocation into property in India (36%) was lower than Asia (39%) and globally (43%).

MARCH 10

General Studies-01

Coral sediments in oceans could dissolve by next century

News

As oceans get more acidic, sediments that constitute coral reefs could begin dissolving by the end of this century, suggests a study.

Beyond News

- Coral reefs are formed by not just the calcium carbonate skeletons that tiny animals called coral 'polyps' create, but also carbonate sediments which accumulate on them over thousands of years.
- Ocean acidification lowering of sea water's pH when it absorbs the excess, human-caused carbon dioxide from the atmosphere prevents polyps from building their stony skeletons.



- In several reef systems, acidification also dissolves corals' carbonate sediments.

Predictions

- Based on this, the team also predicted changes in coral systems by incorporating several factors including current rates of coral formation and sediment dissolution.
- According to their calculations, coral sediments will begin dissolving by 2050; by 2080, they will dissolve faster than they are formed.
- Currently, the processes of coral formation are also under threat. In 1998, Lakshadweep's reefs experienced bleaching: increased ocean temperatures caused algae that live as symbionts within corals to leave, stressing the corals.

Indian reefs

- Coral reefs span 3,062 sq. km in India.
- Many coral species are afforded protection at par with tigers: they are included in Schedule I of the Wildlife Protection Act (1972).
- While coral systems support a diversity of fish species that local communities depend on for sustenance, many like those in Lakshadweep also provide protection from storms and prevent coastal erosion.

General Studies-02

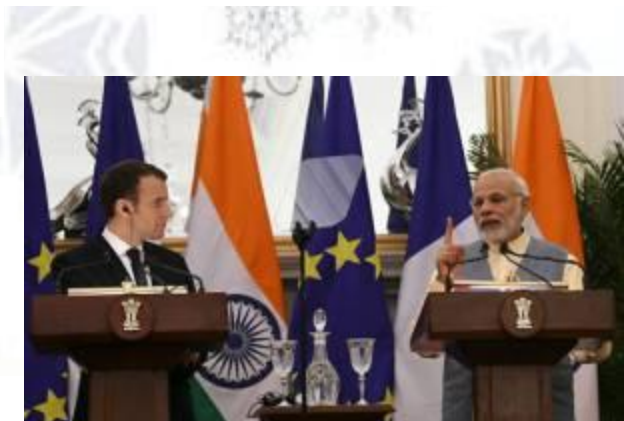
₹65 cr. allotted for maternity scheme

News: In an attempt to curb the maternal and infant mortality rate, Mumbai has allocated ₹65 crore for the Pradhan Mantri Matru Vandana Yojana in the Budget.

Beyond News:

- Under the scheme, pregnant women below and on the poverty line receive ₹5,000 for an institutional delivery.
- The scheme aims at covering partial compensation for the wage loss so that women can take adequate rest before and after delivery.
- The State has also allocated ₹964 crore for the National Health Mission to cater to the poor in rural and urban areas.
- The mission aims at getting better doctors and infrastructure in urban and rural health centres.

We will jointly fight terror, radicalisation, says Macron after talks with Modi



News:

Visiting French President Emmanuel Macron met Prime Minister Narendra Modi .

14 AGREEMENTS SIGNED

- India and France signed 14 pacts in the strategic areas of security, nuclear energy and protection of classified information after extensive talks between Mr. Modi and Mr. Macron.
- It included an agreement on 'reciprocal logistical support' by the armed forces of both sides.
- The agreements include education, environment, urban development and railways.

Mr. Macron, at a joint press briefing with Mr. Modi, said India and France have decided to work together to deal with threats of terrorism and radicalisation.

Both the leaders also talked about cooperation in the Indo-Pacific region.

General Studies-03

Agro-forestry scheme to rope in SC, ST farmers in Chittoor

News: The Social Forestry Division of Chittoor district in Andhra Pradesh expanded the purview of its ambitious “agro-forestry” scheme to all 66 mandals to achieve the target of an additional green cover of 83,000 hectares in 2018.

Beyond News:

The focus would be on farmers belonging to SC and ST communities, with their landholdings at the foothills.

Earlier, the scheme was grounded as pilot project in the eastern mandals.

Awareness campaigns

In order to achieve effective results, the departments of agriculture, horticulture, animal husbandry and education, and voluntary organisations would be roped in to create massive awareness campaigns.



MARCH 11 & 12

General Studies-02

WHO steps up fight against tobacco

News

The World Health Organization has launched new guidelines on the role that tobacco product regulations can play in reducing tobacco demand, saving lives and raising revenues for health services to treat tobacco-related diseases.

Guidelines

- Most countries hesitate to implement policies, due in part to the highly technical nature of such policy interventions and the difficulties in translating science into regulation.
- Failure to regulate represents a missed opportunity as tobacco product regulation, in the context of comprehensive control, is a valuable tool that complements other tried and tested tobacco control interventions, such as raising taxes, and ensuring smoke-free environments.
- The new guidelines provide practical, stepwise approaches to implementing tobacco testing. Such guidance is relevant to a wide range of countries in various settings, including those with inadequate resources to establish a testing facility.

The laboratory guide has comprehensible information on how to test tobacco products, what products to test, and how to use testing data in a meaningful way to support regulation.



U.S. tariffs: 'India must raise dispute at WTO'

News

Experts said that India should drag the United States into the World Trade Organisation's (WTO) dispute mechanism against the latter's move to hike import duties on steel and aluminium, as the decision will impact exports and is not in compliance with the global trade norms.

Beyond News

- The decision of the U.S. would not only impact India's export of these goods to America but also affect global trade.
- Such decisions are protectionist in nature. India needs to approach the WTO against this move as it would severely hit global trade.
- Former Commerce Secretary said the country should take action against America and also raise duties on products like almonds, pistachio and Harley-Davidson motorcycles.

General Studies-03

NASA satellites recreate solar eruption in 3D

News

Scientists have mapped and recreated solar bursts in 3D using three NASA satellites, an advance that may help predict how such events may affect weather around Earth, endanger spacecraft and astronauts.

Beyond News

- The new models can help see how shocks associated with coronal mass ejections (CMEs) propagate from the Sun by combining data from three satellites to produce a much more robust mapping of a CME than any one could do alone.
- Much the way ships form bow waves as they move through water, CMEs set off interplanetary shocks when they erupt from the Sun at extreme speeds, propelling a wave of high-energy particles.
- These particles can spark space weather events around Earth, endangering spacecraft and astronauts.
- Understanding a shock's structure particularly how it develops and accelerates is key to predicting how it might disrupt near-Earth space.
- However, without a vast array of sensors scattered through space, these things are impossible to measure directly.



India commits \$1.4 billion for solar energy worldwide

News

India announced one of the world's largest investment plans in solar energy at the Founding Conference of the International Solar Alliance (ISA).

Beyond News

- The \$1.4 billion line of credit will cover 27 projects in 15 countries and boost the much-required financial power to the solar sector.
- Prime Minister said that, India will provide assistance to 15 countries for \$1.4 billion.

The Founding Conference was co-chaired by Mr. Modi and French President Emmanuel Macron. Mr. Modi presented a 10-point action plan aimed at making solar power more affordable while raising the share of power generated.

- The solar energy sector, facing a challenge of funding, received considerable support at the conference.
- Mr Macron is heading to Mirzapur where he will inaugurate a 100 MW solar power project .

Mr. Macron identified three issues to be addressed the solar energy potential in each country should be identified; mobilisation of finance; and the provision of a favourable framework.

India's first coastal policing academy to start from next month

News

The country's first national academy to train police forces in effectively safeguarding the Indian shoreline will start functioning in Devbhumi Dwarka district of Gujarat from next month.

Beyond News

The Union Home Ministry recently sanctioned the launch of the National Academy of Coastal Policing (NACP) from a campus of Gujarat's Fisheries Research Centre located in coastal Okha.

To be run by a team of paramilitary and defence forces, the academy will sharpen the skills of marine forces of coastal States.

Scientists link 36 genes to heart failure

News

Scientists have identified 36 new genes linked to heart failure, paving the way for novel personalised drug therapies to treat or prevent the deadly condition.

Beyond News

Researchers confirmed that one of those genes plays a causal role in cardiac hypertrophy abnormal thickening of the heart muscle which can lead to heart failure.

This is an exciting direction for personalised medicine.

It can predict whether a patient should be prescribed a different drug using just a blood test.

MARCH 13

General Studies-01

Artefacts of 'pre-Iron Age' found in Odisha

News: Archaeological Survey of India, which has been excavating a mound at Jalalpur village of Odisha's Cuttack district, has now come across stone and bone tools believed to be of early Iron Age.



Beyond News:

- The discovery includes faunal remains, carbonised grains and stone and bone tools of early iron age to prehistoric period.
- Yellow and dark grey colour soil noticed during the excavation signifies the rural settlement flourished in different eras. Circular wall, semi-circular wall, crescent shape wall and mud platforms of different size and shape have been discovered.
- Recently, teeth of three types of sharks, stone tools were unearthed from the site.
- Among the artefacts retrieved from the site include red ware, red slipped ware, grey and black wares, pots of different shapes, bowls, bowl-on-stand, ring based bowls, miniature pots, storage jars, pots .
- Similarly, important antiquities retrieved from the site are polished stone axes and adzes, bone points, terracotta sling balls, terracotta wheel, beads of carnelian, and sand stone, hopscotch, barbed bone point, bone drill, bone arrow-head, bone spear-head, stylus and needle made of antler, bone borer cum side scraper and bone spatula.

General Studies-02

'Levels of pollutants increased during odd-even'

News:

The fortnight-long odd even policy (OEP) to check pollution in Delhi may have been counterproductive and may have exposed people to elevated levels as much as 60% of volatile organic compounds (VOCs), a key component of emissions from vehicles said to aggravate respiratory ailments.

Beyond News

- Based on whether cars bore odd-or-even-numbered licence plates, the Delhi-government policy restricted passenger cars from plying between 8 a.m. and 8 p.m. between January 1 and January 15, 2016, on Delhi roads in a bid to cut down pollution from vehicles during winter.
- The report states that the stretch sees nearly 35,000 petrol and diesel vehicles ply at peak traffic hours.
- Pollutant concentrations spiked in the morning and afternoon but didn't show a significant change during the night, the authors note.
- Statistics from the transport ministry shows that Delhi has the highest number of personal vehicles in India, with a total registered fleet of 2.9 million cars and 6.1 million two-wheeler motor vehicles, which alone contributed to 93% of total registered vehicles (about 9.7 million).

- Sources of pollution in Delhi have blamed road dust and the burning of biomass, with vehicular emissions said to be the third major source of pollution.

General Studies-03

Ranganathittu to be pitched as a potential Ramsar wetland site

News

- The renowned **islets of Ranganathittu** on the banks of the river Cauvery in Srirangapatna will be pitched to be recognised as a Ramsar wetland site of international importance.

Beyond News

- India is a signatory to the Convention on Wetlands, called the Ramsar Convention, which was adopted in the Iranian city of Ramsar in 1971.
- The convention provides a framework for conservation of wetlands and their resources. There are currently 26 sites in India recognised as Ramsar wetland sites of international importance, but none of them are in **Karnataka**.
- Deputy Conservator of Forests told that Ranganathittu has the potential to be recognised as a Ramsar wetland site as it meets some of the criteria pertaining to local flora, fauna and ecology.
- According to the framework of the convention, a water body should meet any one of the seven criteria spelt out by it to be declared a wetland of international importance.
- The official said the sanctuary supports more than 1% of the world population of spot-billed pelicans as against a global population of nearly 17,000, Ranganathittu supports about 1,000 of them.

City	Rank	ASICS score
Pune	1	5.1
Kolkata	2	4.6
Thiruvananthapuram	3	4.6
Bhubaneswar	4	4.6
Surat	5	4.5
Delhi	6	4.4
Ahmedabad	7	4.4
Hyderabad	8	4.3
Mumbai	9	4.2
Ranchi	10	4.1
Raipur	11	4

MARCH 14

General Studies-02

Pune tops quality of governance list

News: Pune, Kolkata, Thiruvananthapuram and Bhubaneswar have the best quality of governance among Indian cities in 2017, a study has found.

Beyond News

- The fifth edition of the Annual Survey of India's City-Systems (ASICS) by Janaagraha Centre for Citizenship and Democracy spans 23 Indian cities and factors in answers to 89 questions.
- The cities were scored based on the quality of laws, policies, institutions and institutional processes that together help govern them.

ASICS groups questions into four categories: urban planning & design; urban capacities & resources; transparency, accountability & participation; and empowered & legitimate political representation.

- **Pune** scored 5.1 out of 10 (all questions are scored on a scale of 0-10). This is in stark contrast to cities in developed countries for instance, London and New York scored 8.8 on the same scale.
- The report addresses **five major issues**, and suggests solutions at the local body, State and Central government levels.
- Indian cities have a weak **urban planning** framework, and the problem can be addressed by a well-made and executed spatial development plan something which is difficult to do, considering there is only one urban planner in Indian cities for every 4 lakh citizens (This number is 48 in the U.S. and 148 in the U.K.).
- Another problem is stability of finances. On average, the cities assessed generated only 39% of the funds they spent, with several cities unable to even cover staff salaries.
- A third major issue is the lack of skilled staff and poor management of human resources. Fragmentation of governance and low levels of empowerment of mayors and councillors is another key roadblock to good governance.
- One of the most important takeaways for citizens from the report is the absence of platforms where citizens can participate in civic matters in their neighbourhoods.

This can be remedied by enacting public disclosure and community participation laws, adopting open data standards and ensuring transparency in finances and operations.

General Studies-03

India's growth to speed to 7.3%: World Bank

News: The World Bank in its India Economic Update has predicted India's economy to grow at 6.7% in the current financial year, which is set to accelerate to 7.3% in 2018-19 and 7.5% in 2019-20.

Beyond News

- The Central Statistics Office predicted GDP growth to be 6.6% in the current financial year.
- The report divides India's economic growth history since 1970 into four segments.
- The first is from 1970 to 1990, when the economy maintained an average growth rate of 4.4%.
- This subsequently accelerated in the 1991-2003 period to an average of 5.4%. Thereafter, growth accelerated sharply for a short period from 2004 to 2008, where it averaged 8.8%, which then slowed down to a "still impressive" average of 7.1% in the 2009-17 period.

- The report did highlight several challenges facing the Indian economy that needed prioritised attention.
- These included the poor state of private sector investments which needed to be enhanced through measures “that assure a favourable investment climate while reducing policy uncertainty”.

T.N. has second highest salary, pension expenditure

News: Tamil Nadu has the second highest expenditure on salaries and pensions among comparable peer States.

Beyond News:

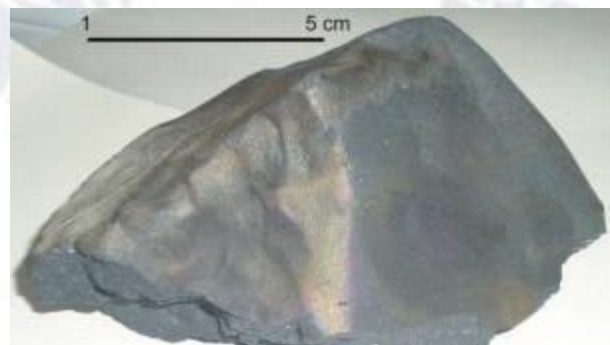
- The government’s spending on salaries and pensions, as a percentage of its revenue expenditure, was estimated to be 40% between FY2016 and FY2018, according to data from ICRA, making it the second largest after Maharashtra.
- As per the Budget estimates for 2017-18, the State’s salary and pension expenditure is pegged at ₹66,908.59 crore, excluding the impact of the Seventh Pay Commission’s recommendations.
- The State spends roughly ₹72,000 crore or 25% of its expenses annually on social welfare measures — one of the highest in the country. The higher spending on salaries, pensions and freebies means the State has little leeway to spend on infrastructure projects.

Rare meteorite may hold clue to life’s origin

News: A study of two meteorites which fell in Assam and Rajasthan over a span of 13 hours in 2017, by the Geological Survey of India (GSI), has concluded that they may contain “significant clues to the origins of life.

Beyond News

- Experts from GSI’s Meteorite and Planetary Science Division (the custodian of meteorites) studied both objects for over 10 months.
- The Mukundpura one is a carbonaceous meteorite, one of the most primitive types. They contain grains of calcium and iron which date to a time before the sun came into existence.
- The impact of the meteorite, which fell on sandy farmland, created a hole six inches deep, with a diameter of nearly 43 cm. The GSI now refers to the object as ‘Mukundpura carbonaceous meteorite.’
- The GSI says this is a rare type, since carbonaceous meteorites constitute only 3%-5% of all meteorite falls. Analysis revealed the presence of water-bearing minerals in the meteorite.
- Meteorites mostly originate from the asteroid belt between Mars and Jupiter.



MARCH 15

General Studies-01

The cave temples of Elephanta

Nb: This is not a news/beyond news item, still this article from Hindu is significant for preparation.

Located on the Elephanta island off the coast of Mumbai, the Elephanta Caves are cave temples dedicated predominantly to Siva, the Hindu god. It also contains a Buddhist stupa mound.

Archaeologists believe the rock-cut caves were hewn between the 5th and 7th centuries AD.

Over the years, **several dynasties laid claim over the island**. These include the Konkan-Mauryas, Trikutakas, Chalukyas of Badami, Silaharas, Rashtrakutas, Kalyani Chalukyas, Yadavas of Deogiri, Muslim rulers of Ahmedabad and the Portuguese.

Many of the art work in the caves were destroyed during the Portuguese rule. The monuments were restored in the 1970s and were conferred the world heritage status in 1987 by UNESCO.

There are seven cave excavations on the Elephanta island. The caves have been named Cave 1 to 7 with Cave 1 being the most important.



Cave 1

- The highlight of Cave 1 is the 7 m-high sculpture of 'Sadashiva', the most important sculpture in Elephanta. This sculpture represents three aspects of Siva the creator, the preserver and the destroyer.
- Some of the other important sculptures in Cave 1 include the 'Andhakasuravada murti', the 'Nataraja' sculpture, 'Kalyanasundara murti', and Ravana shaking Kailasa and Siva as Lakulisa.

Caves 2-7

- Located on Cannon hill are Caves 2 to 5. These previously destroyed caves were restored in the 1970s. The sanctum inside these caves is destroyed, but suggests the caves were once Saiva shrines.
- Caves 6 and 7, on the other hand, are perched on the Stupa hill. Cave 6 was also a Hindu temple but was converted and used as a Christian church by the Portuguese.

- Past the 7th cave is a dry pond with artificial boulders and Buddhist cisterns. Next to this is a mound that resembles a Buddhist stupa. Experts believe this might be the remains of a much higher Buddhist stupa from the 2nd Century BC.

Warming could threaten half of species in 33 key areas: report

News

- Global warming could place 25 to 50% of species in the Amazon, Madagascar and other biodiverse areas at risk of localised extinction within decades.

Beyond News

- The lower projection is based on a mercury rise of two degrees Celsius over pre-Industrial Revolution levels the warming ceiling the world's nations agreed on in 2015.
- The highest is for out-of-control warming of 4.5 degrees Celsius.

Findings in the Report

- The report focused on 33 so-called “Priority Places” which host some of the world's richest and most unusual terrestrial species, including iconic, endangered, or endemic plants and animals.
- The team looked at the impact of climate change on nearly 80,000 terrestrial plant, mammal, bird, amphibian, and reptile species.
- The Miombo Woodlands risks losing 90 % of its amphibians, 86 % of birds, and 80 % of mammals, according to the report.
- Under the 2015 Paris Agreement, countries made voluntary pledges to curb planet-warming greenhouse gas emissions from burning coal, oil and natural gas.
- But even if those pledges are met, scientists predict warming over 3 degrees Celsius, a recipe for disastrous climate change-triggered sea level rises, superstorms, floods, and droughts.
- Limiting warming to 2 degrees Celsius would enable many species to continue inhabiting the areas they currently occupy.
- And if animals can move freely not constrained by roads, fences, or human settlements the proportion of species at extinction risk at warming of 2 degrees Celsius drops from 25 to 20 %.



Job- and revenue-generating tourism would suffer greatly if species disappear, and as-yet-undiscovered medicines from plants forever lost.

General Studies-02

Survey of cities: Why Bengaluru has dropped to the bottom

News

- With no citizen's charter, low per-capita expenditure and no sanitation plans, Bengaluru rapidly descended into the bottom of the table in this year's Annual Survey of India's City-Systems (ASICS) 2017.

Beyond News

- The survey, carried out by Janaagraha Centre for Citizenship and Democracy, places the IT City at 23rd rank, lower than the major cities and towns in the country. The 2016 report had placed the city in the 16th position, while in 2015, it was 12th.
- On a score of 10, Bengaluru secures 3 points, or 0.3 points lower than the previous year, and 2.1 points below the chart-topper Pune.
- Out of 140 points, covering parameters such as collection of taxes, per capita expenditure or producing budgets that can be implemented in the time frames proposed, or power of the BBMP to utilise or raise funds on its own, the city scores a meagre 29.3 points, the lowest among all urban local bodies (ULBs) compared.
- Another deficiency is in transparency, with key documents still out of public reach, and in citizen participation where the survey finds that BBMP does not have participatory budgetary process nor a scheme for citizen volunteers.

Year	2017	2016	2015	2014	2013
Bengaluru's position	23	16	12	18	6
Number of cities compared	23	21	21	21	11

Where Bengaluru falls short of the topper

Criteria	Bengaluru	Pune
Financial Management	20.9%	64%
Human Resource and Human Resource Management	42.9%	85.7%
Powers of mayor or council	9.37%	33.3%
Transparency, citizen participation and accountability	30%	54.73%

General Studies-03

Air India Twitter account hacked

News: Air India's official Twitter account was hacked for many hours before being restored, the airline has said.

Beyond News

- Messages in Turkish language were posted on the official Twitter handle @airindiain, said an Air India spokesperson
- All the malicious contents posted on the handle have been removed and the official handle has now been restored.
- One of the posts by the hackers read, "Last minute important announcement. All our flights have been cancelled. From now on, we will fly with Turkish Airlines"

- Air India has 1,46,000 followers on Twitter.

MARCH 16

General Studies-02

U.S. challenges Indian export programmes at WTO

News: Turning the heat further on India on trade issues, the United States has challenged India's export subsidy programmes at the World Trade Organisation (WTO).

Beyond News

- The move comes close on the heels of a string of statements accusing India of “unfair” trade practices, by President Donald Trump. U.S.
- Trade Representative (USTR) Robert Lighthizer said Washington has requested dispute settlement consultations with the Government of India at the WTO on the issue.
- Trump had threatened to raise duties on products from India.
- Unlike the many trade disputes between India and America that are sector specific or product specific, the new move by Mr. Lighthizer a trade hawk closely in alignment with Mr. Trump's nationalist economic policies is broad and sweeping, in targeting the whole range of Indian export subsidy programmes.
- Mukesh Aghi, president of the United States-India Strategic Partnership Forum (USISPF), said the case would not alter the long-term trajectory of bilateral trade partnership.

‘Alarming rise in hate crimes’

News: Amnesty International India, which launched an interactive data website that documents hate crimes, has said there is an “alarming increase” in the number of crimes against people from the marginalised groups, especially Dalits and Muslims.

Beyond News

- The website documents hate crimes from September 2015.
- A **hate crime**(also known as a **bias-motivated crime** or **bias crime⁽¹⁾**) is a prejudice-motivated crime which occurs when a perpetrator targets a victim because of his or her membership (or perceived membership) in a certain social group or race.

U.P. on top

- The interactive data website “Halt the Hate” notes that 40 of the total 200 hate crimes across the country in 2017 were from Uttar Pradesh.
- Tamil Nadu and Rajasthan reported 18 each. It also shows that 141 of these crimes were against Dalits and 44 were against Muslims.
- The website documents alleged hate crimes from September 2015, since Mohammad Akhlaq was killed in Dadri, Uttar Pradesh, for allegedly killing a cow.

General Studies-03

Navy inducts two microlight aircraft

News: Two microlight Garud (Virus SW80) aircraft were inducted into the Indian Naval Air Squadron 550 'Flying Fish' at the Southern Naval Air Command.



Beyond News

- Garud is a fixed-wing aircraft having low weight, slow landing speed and short landing roll and the first of its type to have been inducted into Indian naval aviation.
- Induction of Garud into the Navy will play a key role in enhancing bird survey, thus augmenting measures to tackle bird hazard and promoting flight safety.
- Garud will be the 14th type of aircraft to join INAS 550 since its commissioning in 1959.
- The squadron currently operates Dornier DO 228 aircraft used for maritime surveillance, search and rescue and training of pilots and observers .

Space travel causes changes to genes

News: Space travel caused lasting changes to 7% of genes of astronaut Scott Kelly, according to a NASA study which compared his DNA to that of his identical twin brother, who remained on the earth.

- NASA's Twins Study brought ten research teams together to accomplish one goal: find out what happens to the human body after spending one year in space.

Twin study:

- Reports included data on what happened to Scott Kelly, physiologically and psychologically, while he was in space, and compared the data to Mark Kelly, as a control subject on the earth.
- Researchers also presented what happened to Scott Kelly after he returned to the earth. By measuring large numbers of metabolites, cytokines, and proteins, researchers learned that spaceflight is associated with oxygen deprivation stress, increased inflammation, and dramatic nutrient shifts that affect gene expression.
- After returning to the earth, Scott Kelly started the process of re-adapting to gravity. Most of the biological changes he experienced in space quickly returned to nearly his preflight status. Some changes returned to baseline within hours or days of landing, while a few persisted after six months.
- Scott's telomeres end caps of chromosomes that shorten as one ages actually became significantly longer in space.
- A new finding is that the majority of those telomeres shortened within two days of Scott's return to the earth. Researchers now know that 93% of Scott's genes returned to normal after landing.

- However, the remaining 7% points to possible longer term changes in genes related to his immune system, DNA repair, bone formation networks, hypoxia and hypercapnia.

Ban on plastic from Gudi Padwa

News

- The Maharashtra State Cabinet decided to impose a ban on plastic products from Gudi Padwa, which falls on March 18. Violation of the ban will invite penal action against sellers and users.

Beyond News

- The department has omitted items such as flex, non-woven polypropylene bags, banners, flags, decorative door hangings, plastic sheets, and all types of plastic wrappers.
- According to the sources in the Environment department, the ban will be effective only on manufacture, use, storage, distribution and sale of plastic carry bags, thermocol and plastic plates, cups, glasses, forks, bowls and spoons.
- Violators would be **fined ₹25,000** and could also face a **three-year jail term**.
- An empowered committee has been formed to discuss the ban on rest of the plastic goods.
- The State has already banned the production and distribution of plastic carry bags thinner than 50 microns and smaller than 8×12 inches.
- But no visible, effective impact is seen on the ground.

After Effects

- Environmental problems due to non-biodegradable plastic are on the rise. Water clogging due to plastic bags causes health hazards.
- Animals are eating these bags, and marine animals are endangered too.

MARCH 17

General Studies-01

Ancient water pipeline found in Hampi

News: The Archaeological Survey of India has stumbled upon an ancient terracotta pipeline near the 'Octagon' pavilion near the Queen's bath in Hampi.

Beyond News

- During inspection of the ongoing work on the protection wall for the ancient Octagon pavilion Superintending Archaeologist, Hampi Mini Circle, and other officials noticed a terracotta pipeline.
- Immediately, a thorough search of the area by them helped to unearth the pipelines in a few places in the vicinity.

- The ASI officials believe that these multiple-rowed pipelines, buried under the existing road between the Bhojana Shala on the opposite direction and the octagonal pavilion and further, continues towards the Royal enclosure.

Octagonal pavilion monument will be included in the vision plan under preparation so that an in-depth study of the area can be undertaken in a phased manner so as to find out the exact path of the pipelines and throw more light **on the incomparable hydraulic engineering techniques of the Vijayanagar rulers five hundred years ago.**

General Studies-02

Illegal mining: T.N. recorded highest number of FIRs

News

- A total of 10,734 First Information Reports (FIRs) relating to illegal mining were registered across the State during 2017-18, the highest figure in the country.

Beyond News

- According to the information provided by Minister of State for Mines and Coal Haribhai Parthibhai Chaudhary in the Rajya Sabha, almost half of the total number of FIRs (21,559) registered in the States across the country during 2017-18 (till September 2017) were from Tamil Nadu.
- Rajasthan and Jharkhand registered 2,536 and 2,444 FIRs respectively.
- As per section **23-C of the Mines and Minerals (Development and Regulation) Act, 1957**, the State governments were empowered to frame rules for prevention of illegal mining, storage and transportation for both major and minor minerals.
- The information is based on the details provided by the respective State governments to the Indian Bureau of Mines.

General Studies-03

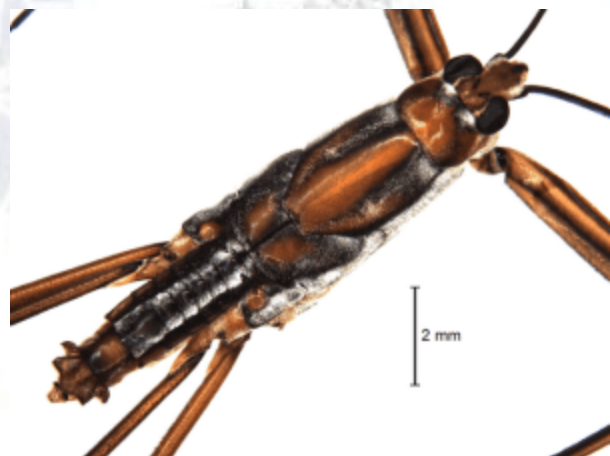
New species of water strider found in Nagaland

News

- Scientists from the Zoological Survey of India (ZSI) have discovered a new species of water strider from Nagaland.

Beyond News

- The species, named *Ptilomera nagalanda Jehamalar and Chandra*, was found in the river Intanki, Peren district.



- Water striders are a group of insects adapted to life on the surface of water, using surface tension to their advantage.
- Scientists working on the water striders say that their presence serves as an indicator of water quality and they are found on water surface.
- With the discovery of *Ptilomera nagalanda* the number of species of water striders belonging to the subgenus has increased to six.
- Water striders also play an important role in the food chain by feeding on mosquito larvae.

Ptilomera

- What is unique about *Ptilomera* is that they are only found in rocky, fast flowing streams and rivers that are not exposed to a lot of sunlight.
- Orange with black stripes on the dorsal side and a pale yellowish brown ventral part of the body, this particular species has long slender legs and measures about 11.79 mm.
- Water striders have three pairs of legs.
- The front legs are relatively shorter than the mid and hind legs and used to catch and hold prey. The striders possess needle-like mouth parts that are used for sucking the juice of prey.

‘Over ₹3,600 cr. released in 3 years for cleaning Ganga’

News: The government has released ₹3,633 crore between 2014-15 and 2016-17 for cleaning the Ganga and beautifying ghats along it, the Lok Sabha informed.



Beyond News

- Minister of State for Water Resources said that, construction and beautification of 228 of the total 361 ghats sanctioned have been completed till now under the Centre's Namami Gange programme.
- Of these, 189 ghats are located along the river's stretch in West Bengal.
- In Uttar Pradesh, Bihar, Uttarakhand and Jharkhand works on 20, 16, two and one ghats have been completed till date respectively.
- 154 priority drains and 1,109 grossly polluting industries (GPIs) have been identified along the river, most of which are located in Uttar Pradesh.
- Of the five basin States, the longest stretch of the Ganga is in Uttar Pradesh.

Anti-pollution steps

- Surprise inspection of GPIs is carried out for compliance verification of the stipulated environmental norms.
- Out of the 1,109 GPIs inspected, 538 were found to be non-complying and 358 of those were issued closure directions and 180 have been given show cause notices, he said.

- Implementation of water conservation measures in industrial sectors and establishment/upgradation of sewage treatment plants/common effluent treatment plants in the towns located along Ganga's mainstream and tributaries are among the steps taken by the government to curb pollution in the river.

MARCH 18&19

General Studies-01

Bilaspur's stone age tools link Sivalik cultures

News: Researchers from the Anthropological Survey of India (AnSI) have discovered a number of Acheulian artefacts (dated to about 1, 500,000–1,50,000 years ago) along with contemporary Soanian ones from an unexplored site at Ghumarwin in Bilaspur district of Himachal Pradesh.

Beyond News

- The site is close to another site where scientists in the 19th century discovered fossil remains of Sivapithecus, the last common ancestor of orangutans and humans.
- The discovery of stone tools belonging to the Acheulian age in a region known to have rich evidence of the Soanian period, presents the possibility of continuity of the two stone age cultures at the site.
- This is the first time that the AnSI has found a large number of Acheulian artefacts along with the Soanian tools at a same site.
- They have found bifacial hand axes along with cleavers and scrapers, which are clearly tools of the Acheulian age.
- Along with this, tools like various types of choppers, discoids, scrapers, cores, numerous flake types and angular core fragments of Soanian cultural period have also been found at the same site.
- According to experts, the Soanian stone age cultures date to 600 ka (about 6,00,000) years ago.
- Other than over 100 stone tools, the exploration also yielded petrified remains of a number of vertebrate and invertebrate groups.



The petrified remains are under examination by experts and will help in recreating an ecological picture of the area, millions of years ago.

General Studies-03

A floating laboratory to save the famed Loktak Lake

News: Three days a week, four women in white lab coats traverse the Loktak Lake in a custombuilt motorboat, scooping flaskfuls of water for analysis.

Why its important?

This news brings loktak lake relevant for upsc. Loktak Lake is the **largest freshwater lake in Northeast India and is famous for the phumdis floating over it**. The lake is located near Moirang in Manipur state, India. The etymology of Loktak is Lok = “stream” and tak = “the end”

Beyond News

- They record changes in the temperature, acidity, conductivity and dissolved-oxygen in the 300-sq km lake.
- Rising urbanisation and land-use change over the years has seen the Loktak Lake, the largest in the northeast, become a dump yard for municipal waste.

‘Silent threat’

- Though the Loktak Lake is yet to see worrying levels of pollution, early signs suggest that there’s need to be vigilant.
- Everyone talks about carbon dioxide levels, but nitrogen pollution is a major, silent threat.
- Already there are signs of calcium anomalies in some of the mollusc and other aquatic life in the lake.
- The model of a floating laboratory ties in with a larger initiative by the Centre’s Department of Biotechnology (DBT) to monitor the health of aquatic systems in the northeast.
- The health of the lake also affects the Phumdis, or the unique ‘floating islands’, on the lake.
- The pH level of the lake, as per measurements so far, varies from 6.8 to 7.2 (ideally it should be slightly below 7). Studies of ocean acidification have shown that even a 0.1 increase can cause [harmful] decalcification.

New algorithm may prevent cyber attacks on GPS devices

News

- Scientists have developed a novel algorithm that may help detect and prevent cyber attacks on GPS-enabled devices in real time.

Beyond News

- The algorithm developed by researchers at University of Texas at San Antonio (UTSA) in the US mitigates the effects of



spoofed GPS attacks on electrical grids and other GPS-reliant technologies.

- Malicious agents have the ability to disrupt a device's understanding of time and location by emitting a signal that is pretending to be a GPS signal.
- The US electrical power grid, for example, depends on GPS to give time stamps for its measurements at stations across the country.
- Although reliable, researchers in laboratories across the world have shown that the system can be vulnerable to spoofing cyber-attacks that can disrupt the system's time and location data.
- The algorithm, which can be applied to cell phones or computers as easily as a new app, has the ability to recognise false GPS signals and counter an attack while it occurs.
- The main focus of researchers is to prevent attacks on the American electrical power grid, but the algorithm is applicable to several different devices.

Mission: clean water

News: This year though, Kerala is gearing up to conserve its water resources and also to supply clean drinking water.

Beyond News

- **God's Own Country** suffered its worst-ever drought in 115 years in 2017.
- As the monsoon failed, residents faced an acute shortage of drinking water.
- Last year, many areas in the State faced acute shortage of clean drinking water.
- Last year, the State received only 185 mm of rainfall, which is about 33% of the average rainfall of 480.7 mm. Following the drought, a spike in waterborne diseases and fevers were reported in the State.
- 66% of schools in Kerala had functional drinking water facilities in 2010, the number slipped to 80.5% in 2016.



Haritha Keralam

- Haritha Keralam is an umbrella mission integrating the components of waste management and water resources management.
- Local bodies are involved actively in cleaning ponds and rivers, and also carrying out Watershed Walking programmes.
- Through Watershed Walking programmes, they are identifying watersheds, cleaning them, and also upgrading the water resources map of the State.
- The Water Parliament will sensitise people towards protecting water resources and keeping them unpolluted. By April, this [the Water Parliament] will be held at local body levels and groups will be formed to carry out water conservation awareness programmes.

MARCH 20

General Studies-01

Africa's oldest DNA found

News: The oldest nuclear DNA from Africa ever has been discovered in eastern Morocco, adding new clues to the world's understanding of human history.

Beyond News:

- The Moroccan Culture Ministry announced that the Deoxyribonucleic acid (DNA) was found at a burial site called Grotte des Pigeons near the eastern town of Taforalt.
- The sequenced DNA dates back to approximately 15,000 years ago.
- The DNA, dating to the Late Stone Age, had a genetic heritage that was in part similar to Near Eastern populations and in part related to sub-Saharan African populations, it noted.

DNA from nine individuals from Taforalt were analysed, and we were able to recover mitochondrial data from seven of the individuals and genome-wide nuclear data from five of the individuals.

Because of the age of the samples, at approximately 15,000 years old, and the poor preservation characteristic of the area, this is an unprecedented achievement.

- This is the second major archaeological achievements made in Morocco in a year.
- The remains push back human species' origins by 100,000 years, and suggest that humans didn't evolve only in East Africa.

Waking the sleeping giants

News: The Arctic is warming like never before.

Beyond News:

- The region experienced an alarming heatwave was last month, with temperatures around the entire Arctic region recorded at minus 8 degree Celsius about 20 degree Celsius above normal.
- A new study has found that the permafrost in the coldest northern Arctic is thawing at an unprecedented rate that it may unleash ancient carbon, worsening the problem of global warming.



- It found that the Arctic permafrost could thaw enough to become a permanent source of carbon to the atmosphere in 60 years.
- They found that if melting continues, by the year 2300, total carbon emissions from this region will be 10 times higher than the carbon emission produced by humans through the burning of fossil fuel in 2016!

Permafrost

- Permafrost is soil that has remained frozen for years or centuries under topsoil.
- It forms in a climate where the mean annual air temperature is 0 degree Celsius or lesser and is generally characterised by long winters with little snow and short cool and dry summers.
- Such a climate exists in Siberia and a few other parts of Russia, the Tibetan Plateau, Alaska, Northern Canada, Greenland, and parts of Scandinavia. Hence permafrost forms in these regions. It covers about 24 % of the exposed landmass of the Northern Hemisphere.
- Scientists estimate that the world's permafrost holds about 1,500 billion tonnes of carbon, almost double the amount of carbon that is currently in the atmosphere.

General Studies-02

39 Indians captured by IS dead: Sushma

News: External Affairs Minister Sushma Swaraj informed **Rajya Sabha** that, all 39 Indians who went missing in the war-torn Iraqi city of Mosul in 2014 are dead.

Beyond News:

- Making a *suo motu* statement in Hindi, Ms. Swaraj said that, a team of Indian and Iraqi officials found the bodies from a mass grave in Badush and DNA tests confirmed they belonged to the missing Indians.
- A total of 39 bodies were exhumed. They collected DNA samples from India sent them to Iraq. The tests were conducted in Baghdad. The samples were matching in 38 cases.

Background:

- Forty Indians from Punjab, Himachal Pradesh, Bihar and West Bengal went missing in June 2014 after Mosul fell to the Islamic State.
- In 2015, one of them, Harjit Masih, managed to flee from the clutches of Islamic State and said all other Indians were killed. But the External Affairs Minister refused to buy his claims then.
- In July last year, she said she would declare the missing persons dead until she had a concrete evidence.

General Studies-03

Two new dog-faced bat species discovered

News: The dog-faced bats are a fast-flying, insectivorous species that are highly difficult to spot found in the forests of South and Central America.

Beyond News:

- Scientists have only recorded six species so far, but now an international team of scientists has succeeded in recognising two more species of these bats.
- Named *Cynomops freemani* in honour of Dr. Patricia W. Freeman, a scientist who studied bats these tiny bats with a wing span of just 4 cm were found in the Canal Zone region of Panama.
- The bat is reddish-brown to dark chocolate brown in colour with silky short fur.
- The second species named *Cynomops tonkigui* (tonkigui means bat in Waorani, a language spoken by the natives of Ecuador) was found in the eastern Andes of Ecuador and Colombia.
- It has a dark cinnamon brown colour and is about the same size as *Cynomops freemani*.

Morphological analysis, acoustics data and modern DNA studies have helped identify the new species.

General Studies-04

SC/ST Atrocities Act has become a means to blackmail citizens, public servants: SC

News: The anti-atrocities law which protects Scheduled Castes and Scheduled Tribes from casteist slurs and discrimination has become an **instrument for “blackmail” of innocent citizens and public servants**, the Supreme Court observed in a judgment.

Beyond News:

- The court referred to how public administration has been threatened by the abuse of this Act. Public servants find it difficult to give adverse remarks against employees for fear that they may be charged under the Act.
- Issuing a slew of guidelines to protect public servants and private employees from arbitrary arrests under the Atrocities Act, the Supreme Court directed that public servants can only be arrested with the written permission of their appointing authority.
- In the case of private employees, the Senior Superintendent of Police concerned should allow.
- Besides this precaution, a preliminary enquiry should be conducted before the FIR is registered to check whether the case falls



within the parameters of the Atrocities Act and whether if it is frivolous or motivated.

Courts significant observations:

- Supreme Court Bench said in their 89-page judgment that, the last three decades have seen complainants who belong to the marginalised sections of the society use the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act of 1989 to exact “vengeance” and satisfy vested interests.
- The SC observed that, Innocent citizens are termed as accused, which is not intended by the legislature. The legislature never intended to use the Atrocities Act as an instrument to blackmail or to wreak personal vengeance.
- The court also said that, the 1989 Act penalises casteist insults and even denies anticipatory bail to the suspected offenders. Hence, the law is used to rob a person of his personal liberty merely on the unilateral word of the complainant.

MARCH 21

General Studies-01

Concerns on Totten Glacier

News: More of a giant France-sized glacier in Antarctica is floating on the ocean than previously thought, scientists have said, raising fears it could melt faster as the climate warms and have a dramatic impact on rising sea-levels.

Beyond News

- The Totten Glacier is one of the fastest-flowing and largest glaciers in Antarctica with scientists keen to keep a close eye on how it melts given the enormous amount of water it could potentially unleash.
- Using artificially created seismic waves that help scientists see through the ice, researchers have discovered that more of the Totten Glacier floats on the ocean .
- The portion of the glacier resting on water rather than rock increases, accelerating the pace of disintegration.
- From the air, the contours of Totten Glacier are invisible because the entire Antarctic continent is covered by a seamless, kilometres-thick blanket of snow and ice.
- Totten Glacier contains enough ice to raise global sea levels by about three mt if it all melted.
- Since the 1900s the global sea-level has risen by around 20 cm and by the end of the century it's projected to rise by up to one metre or more, but this is subject to high



uncertainty which is why studying glaciers such as the Totten is important.

Glaciers

- Glaciers are huge bodies of dense ice that slowly move down valleys, mountains and slopes under their own weight over many centuries, sculpting the earth below as they go.
- They hold the vast majority of Earth's fresh water and are the main contributor to rising sea levels when they melt.

According to NASA monitoring, between 2002 and 2016, Antarctica lost 125 gigatonnes of ice per year, causing sea levels worldwide to rise by 0.35 mm annually.

General Studies-02

India joins Europe's satellite data sharing pool

News: India joined Europe's mega global arrangement of sharing data from Earth observation satellites, called **Copernicus**.

Beyond News

- Data from a band of Indian remote sensing satellites will be available to the European Copernicus programme while designated Indian institutional users will in return get to access free data from Europe's six Sentinel satellites and those of other space agencies that are part of the programme, at their cost.
- Under this arrangement, the European Commission intends to provide India with free, full and open access to the data from the Copernicus Sentinel family of satellites using high bandwidth connections.
- Reciprocally the Department of Space will provide the Copernicus programme and its participating states with a free, full and open access to the data from ISRO's land, ocean and atmospheric series of civilian satellites (Oceansat-2, Megha-Tropiques, Scatsat-1, SARAL, INSAT-3D, INSAT-3DR) with the exception of commercial high-resolution satellites data.
- The arrangement includes technical assistance for setting up high bandwidth connections with ISRO sites, mirror servers, data storage and archival facilities.



Uses

- The space-based information will be used for forecasting disasters, providing emergency response and rescue of people during disasters; to glean land, ocean data; and for issues of security, agriculture, climate change and atmosphere, according to a statement issued by the European Commission.
- The multi-billion-euro Copernicus is Europe's system for monitoring the Earth using satellite data. It is coordinated and managed by the EC.

Wide range

- The free and open data policy is said to have a wide range of applications that can attract users in Europe and outside.
- The Copernicus emergency response mapping system was activated on at least two Indian occasions during the 2014 floods in Andhra Pradesh in October 2014 and after the 2013 storm in Odisha.

General Studies-03

AI helps locate 6,000 new craters on Moon

News: Scientists have mapped 6,000 new craters on the Moon with the help of a newly developed technique based on artificial intelligence (AI).

Beyond News

- By comparison, the technique developed can generalise very well to unseen lunar patches, and even other cratered bodies like Mercury.
- It's the first time they have an algorithm that can detect craters really well for not only parts of the Moon, but also areas of Mercury.
- In order to determine its accuracy, the researchers first trained the neural network on a large data set covering two thirds of the Moon, and then tested their trained network on the remaining third of the Moon.
- It worked so well that it was able to identify twice as many craters as traditional manual counting. In fact, it was able to identify about 6,000 previously unidentified craters on the Moon.
- The data used by the algorithms was taken from elevation maps gathered from orbiting satellites.



Importance

- Knowing the size and location of craters on bodies like the Moon is important because it offers a window into the history of our solar system.
- By studying impact craters of all shapes, sizes and ages, researchers can better understand the distribution of material and the physics that occurred in the early stages of our solar system.
- Since the Moon lacks an atmosphere, plate tectonics and water, there is little erosion and as a result some impact craters as old as four billion years are visible.
- The ages of large craters can also be determined by counting how many small craters are found inside it.

143 species spotted in bird survey

News: A recent bird survey organised by the Forest Department and the Hume Centre for Ecology and Wildlife Biology in the South Wayanad Forest Division has recorded 143 species.

Beyond News

- Six species of raptors, belonging to Schedule 1 of the **Wildlife Protection Act**, were discovered on the mountain ranges of the region.
- Seven species of pigeons, eight species of woodpeckers, four species of drongos, six species of bulbuls, and nine species of babblers were recorded during the survey.
- *Banasura Chilappan* (*Montecincla jerdoni*), one of the **most endangered forest birds of the country**, was spotted in the Shola forests above an altitude of 1,800 m.
- Global distribution of the species is restricted to three mountain ranges of Wayanad, that too an area of less than 50 sq km.
- Fourteen species of migratory birds seven species of warblers belonging to *Phylloscopus* and *Acrocephalus* genus and seven species of migratory flycatchers, including Rusty-tailed flycatcher were observed during the survey.



Forest fire threat

- Every year, forest fires, mostly man-made, devastate a large tract of grassland on the mountain ranges.
- Close to 100 hectares of grassland was ravaged in a recent forest fire in the area this year. Such incidence highlight the need for conservation on a war footing to protect the fragile mountain region.

New protein 'mat' can soak up pollution

News: In a breakthrough, scientists have created novel protein mats that can soak up and trap chemical pollution.

Beyond News

- Despite years of effort to stabilise proteins outside of their native environments, scientists have made limited progress in combining proteins with synthetic components without compromising protein activity.



- The study, shows a path toward exploiting the power of proteins outside of the cell by demonstrating a unique way to keep proteins active in synthetic environments.
- Proteins are usually unstable outside their native environments. To function properly, proteins must fold into a specific structure, often with the help of other proteins.
- To overcome this challenge, researchers analysed trends in protein sequences and surfaces to see if they could develop a synthetic polymer that provides all the things that a protein would need to keep its structure and function.
- This opens the door to the creation of larger mats that could soak up toxic chemicals in places like war zones.

MARCH 22

General Studies-01

Dravidian language family is 4,500 years old: study

News

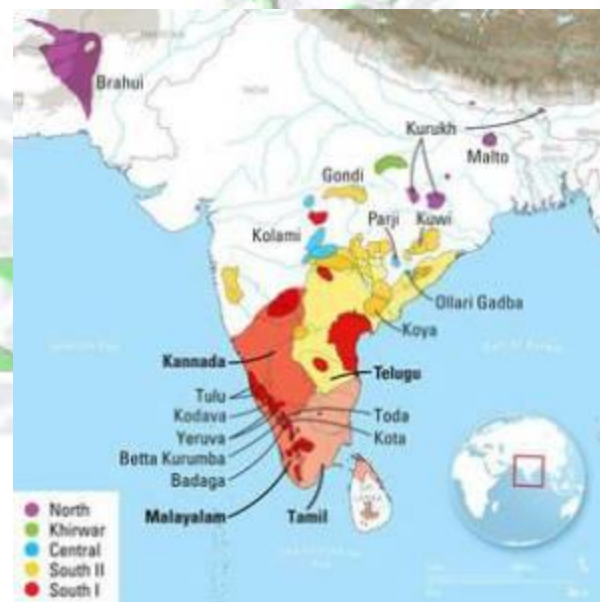
- The Dravidian **language** family, consisting of 80 varieties spoken by nearly 220 million people across southern and central India, originated about 4,500 years ago, a study has found.
- This estimate is based on new linguistic analyses by an international team.

Why its Important?

- The study of the Dravidian languages is crucial for understanding prehistory in Eurasia, as they played a significant role in influencing other language groups.

Findings in the Study

- The researchers used data collected first-hand from native speakers representing all previously reported Dravidian subgroups.
- The findings, match with earlier linguistic and archaeological studies.
- South Asia, reaching from Afghanistan in the west and Bangladesh in the east, is home to at least six hundred languages belonging to six large language families, including Dravidian, Indo-European and Sino-Tibetan.
- The Dravidian language family, consisting of about 80 language varieties (both languages and dialects) is today spoken by about 220 million people, mostly in southern and central India, and surrounding countries.



- The Dravidian language family's four largest languages Kannada, Malayalam, Tamil and Telugu have literary traditions spanning centuries, of which Tamil reaches back the furthest.
- Along with **Sanskrit**, Tamil is one of the world's classical languages, but unlike Sanskrit, there is continuity between its classical and modern forms documented in inscriptions, poems, and secular and religious texts and songs.
- Neither the geographical origin of the Dravidian language nor its exact dispersal through time is known with certainty.
- The consensus of the research community is that the Dravidians are natives of the Indian subcontinent and were present prior to the arrival of the Indo-Aryans (Indo-European speakers) in India around 3,500 years ago.
- Study author collected contemporary first-hand data from native speakers of a diverse sample of Dravidian languages, representing all the previously reported subgroups of Dravidian.
- The researchers used advanced statistical methods to infer the age and sub-grouping of the Dravidian language family at about 4,000-4,500 years old.
- This estimate, while in line with suggestions from previous linguistic studies, is a more robust result because it was found consistently in the majority of the different statistical models of evolution tested in this study.
- This age also matches well with inferences from **archaeology**, which have previously placed the diversification of Dravidian into North, Central, and South branches at exactly this age, coinciding with the beginnings of cultural developments evident in the archaeological record.

General Studies-02

Parliament passes Payment of Gratuity Bill

News: Parliament passed a key bill that will empower the government to fix the amount of tax-free gratuity and the period of maternity leave with an executive order.

Beyond News:

- The Rajya Sabha, which failed to transact any significant business over the last fortnight due to protests by various parties, passed the Payment of Gratuity (Amendment) Bill without discussion.
- The Bill, moved by Labour Minister, was **passed by a voice vote**.
- **The Lok Sabha gave its approval to the important bill last week.**
- The legislation will enable the government to enhance the ceiling of tax-free gratuity to Rs. 20 lakh from the existing Rs. 10 lakh for employees falling under the Payment of Gratuity Act.
- After the implementation of the 7th Pay Commission, the ceiling of gratuity amount for Central government employees was doubled to Rs. 20 lakh.
- It also allows the government to fix the period of maternity leave for female employees as deemed to be in continuous service in place of the existing 12 weeks.
- The amendment to the payment of gratuity law comes in the backdrop of Maternity Benefit (Amendment) Act, 2017 enhancing the maximum maternity leave period to 26 weeks.

Jackfruit is now Kerala's official fruit

News: Kerala elevated jackfruit as the State's official fruit.

Beyond News

- Agriculture Minister announced the ennoblement of the ubiquitous fruit in the Assembly during a discussion on demand for grants in the Budget for farming.
- He said Kerala produced 30 to 60 crore jackfruits annually. Their produce was entirely organic and pesticide-free.
- Kerala hoped to market jackfruit and its value-added products as its signature agricultural export. The State also would market its banana and pineapple crop in foreign markets.
- **Coconut production in Kerala was on the decline.** Chhattisgarh, Andhra Pradesh, and Karnataka had overtaken Kerala in coconut production.
- Kerala remained the largest coconut producer because of the vast area under cultivation.
- The government planned to extend coconut cultivation from the current 8 lakh hectares to 9.5 lakh hectares. It would introduce more high-yielding varieties to boost coconut harvests.



General Studies-03

Indigenous technology tested on BrahMos supersonic missile

News: Supersonic cruise missile BrahMos was successfully flight-tested for the first time with an indigenous seeker.

Beyond News

- The seeker, a critical technology in missiles, had come from Russia.
- The precision strike weapon with Indian-made seeker flew in its designated trajectory and hit the target with pin-point accuracy.
- The seeker was developed by Research Centre Imarat (RCI), Hyderabad, in collaboration with other DRDO labs.
- The seeker technology, which determines the accuracy of a missile, is a closely guarded secret.
- Mastering it is a significant milestone in missile technology and would reduce import dependence.
- BrahMos is a **joint collaboration between India and Russia** and the missile is capable



- of being launched from land, sea, sub-sea and air against surface and sea-based targets.
- Its range was initially capped at 290 km as per obligations of the Missile Technology Control Regime (MTCR).
- Since India's entry into the club, the range has been extended to 450 km and the plan is to increase it to 600km.

Pakistan gets powerful missile tracking system from China

News: The state-run Chinese Academy of Sciences (CAS) said that, in an unprecedented deal, **China** has sold Pakistan a powerful tracking system which could speed up the development of multi-warhead missiles by its all-weather ally.

Beyond News

- Zheng Mengwei, a researcher with the CAS Institute of Optics and Electronics in Chengdu, confirmed to the Hong Kong-based *South China Morning Post* that Pakistan had bought a highly sophisticated, large-scale optical tracking and measurement system from China.
- Zheng said he could not elaborate on the technology nor where in Pakistan it was being used as it involved the country's **defense** interests.
- Pakistani military recently deployed the Chinese-made system "at a firing range" for use in testing and developing new missiles.
- China was the first country to export such sensitive equipment to **Pakistan**.
- The system's performance surpassed the user's expectations and it was considerably more complex than Pakistan's home-made systems.

MARCH 23

General Studies-02

Why have you not appointed Lokayuktas yet, SC asks 12 States

News: The Supreme Court directed Chief Secretaries of 11 States to explain the five-year delay in appointment of anti-corruption ombudsman Lokayukta and Uplokyukta.

Why its important?

Lokpal and Lokayuktas Act comes under the radar of UPSC. Make a note.

Beyond News

- A Bench, found that several States have not moved a muscle to appoint Lokayuktas despite the **Lokpal and Lokayuktas Act coming into existence in 2013**.
- The court found that Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Puducherry, Tamil Nadu, Telangana, Tripura, West Bengal and Arunachal Pradesh have not appointed Lokpal, Lokayukta or Uplokyukta.

- The Chief Secretaries of the aforesaid 11 States shall inform the court within two weeks as to whether steps have been taken for appointment of Lokyukta/Uplokayukta and if so the stage thereof.

U.S. warship sails near disputed islands in South China Sea, officials say

News: A U.S. Navy destroyer carried out a “freedom of navigation” operation on Friday, coming within 12 nautical miles of an artificial island built by **China** in the South China Sea-U.S. officials.

Beyond News

- The operation, which infuriated Beijing, was the latest attempt to counter what Washington sees as China’s efforts to limit freedom of navigation in the strategic waters.
- The officials, speaking on condition of anonymity, said the USS Mustin traveled close to **Mischief Reef in the Spratly Islands** and carried out maneuvering operations. China has territorial disputes with its neighbors over the area.
- China’s Defence Ministry said two Chinese naval ships had been sent to identify the U.S. ship and warn it to leave.
- China’s claims in the South China Sea, through which about \$5 trillion in ship-borne trade passes each year, are contested by Brunei, Malaysia, the Philippines, Taiwan and Vietnam.
- The U.S. military put countering China and Russia at the center of a new national defense strategy recently unveiled.
- **The United States has been pushing allies to carry out freedom of navigation operations as well.**
- Britain this year said one of its warships would pass through the South China Sea to assert freedom-of-navigation rights.

General Studies-03

Bengaluru tops in waterbodies with chemical pollution

News: More than half of the country’s critically polluted waterbodies, in terms of chemical pollution, are found in Karnataka, with its capital itself accounting for 17 lakes and tanks with the highest chemical pollution.

Beyond News

- From Bellandur to Hebbal, 17 lakes and tanks in Bengaluru have been categorised as critically polluted with Chemical Oxygen Demand (COD) levels, which indicate

Water quality

Chemical oxygen demand (COD): quantifies amount of oxidizable pollutants (that is, effluents) in surface water

National Water Quality Monitoring Programme covers 253 rivers, 133 lakes, 47 ponds and 79 tanks across the country

Pollution

Ministry of Environment, Forest and Climate Change lists critically-polluted water bodies based on Central Pollution Control Board (CPCB) analysis between 2013-17

36 rivers and 46 lakes, tanks and ponds have COD higher than 250 microgrammes per litre

250mg/l is the discharge standard for sewage and effluent treatment plants

Pollution in Karnataka

Bhima river considered critically-polluted

26 Polluted water bodies in Karnataka

54% of the total listed across the country

Bengaluru and its outskirts

Arakere, Bellandur, Hebbal, Hulimavu, Karthabarahalli (Peenya), Puttenahalli, Singasandra, Somasundrapet, Usec, Yediyur, Uttarahalli Derakere, Shivapura, Vengalrahe, Madavara, Dheeravara, Veerapura, Beemgahalli

Kolar and Tumakuru

Mulbagal, Melikote, Pavagada

Mysuru

Dabaw, Yennehole, Shettykere

Others

Hallanahalli (Hassan), Hirekere (Dharwad), Wavankere (Raichur)

Source: Lok Sabha reply to starred question No. 3423



chemical pollution, topping 250 microgrammes per litre, shows data that was submitted to the Lok Sabha.

- The Minister of Environment, Forest and Climate Change, provided a list of 38 rivers and 48 lakes, tanks and ponds in the country that have been categorised as critically polluted.
- The analysis was done by Central Pollution Control Board (CPCB), in association with the State Pollution Control Boards, for the years 2013-17. Over 253 rivers and 259 waterbodies are being monitored under the National Water Quality Monitoring Programme.

Water bodies

- Karnataka tops the list in critically polluted water bodies, followed by Telangana with 12 and Kerala with 6.
- While lakes in and around Bengaluru are polluted, it is hard to believe that lakes in other States are not as polluted or worse off. This is perhaps because other State Pollution Control Boards do not monitor or give reliable data.
- Interestingly, in the list of 38 rivers, only Bhima from the State finds mention.
- Sugar factories and cement factories along the stretch dump effluents directly into the river, while rampant sand mining in both Karnataka and Maharashtra has resulted in the disappearance of sand, which can naturally filter pollutants.

Microplastics ruin the beaches

News: Microplastics, one of the carriers of pollution to the marine environment, have been found more on the beaches of Karnataka and Maharashtra as compared to Goa, according to a study.

Beyond News

- Microplastics are extremely small pieces of plastic debris in the environment, resulting from the disposal and breakdown of consumer products and industrial waste.
- During a study conducted on different beaches along the coast of Maharashtra, Karnataka and Goa, the researchers found significant variations in the distribution pattern of plastic contaminants.
- However, comparatively fewer microplastic pellets were found along the coast of Goa.
- During a comprehensive study on the identification and ecotoxicological impact of microplastics in the coastal Arabian Sea, they observed 5,095 pieces of plastic pollutants in total, ranging from 3 to 100 mm in size, on 10 beaches along the west coast of India during 2016-17.
- These pellets were made of polyethylene and polypropylene, and a few of them were unidentified polymers.

After effects

- Due to the long residence time of microplastics in the sea and on the beaches, they tend to adsorb various pollutants, and may act as vector transferring toxic chemicals from the environment to the marine organisms.

MARCH 24

General Studies-01

Glacier melting passes point of no return

News: The further melting of glaciers worldwide cannot be prevented in the current century – even if all the emissions are curtailed, a study has found.

Beyond News

- In the long run, 500 metres by car with a mid-range vehicle will cost one kilogramme of glacier ice.
- In the Paris Agreement, 195 member states of the United Nations Framework Convention on Climate Change agreed to limit the rise in global average temperature to significantly below two degrees Celsius.
- Melting glaciers have a huge influence on the development of sea level rise.
- Whether the average temperature rises by 2 or only 1.5 degrees Celsius makes no significant difference for the development of glacier mass loss over the next 100 years.
- Around 36 per cent of the ice still stored in glaciers today would melt even without further emissions of greenhouse gases.
- That means more than a third of the glacier ice that still exists today in mountain glaciers can no longer be saved, even with the most ambitious measures.



General Studies-02

Indian sign language dictionary released

News: It may have only 3,000 words, but it is the first step to a potentially huge resource for the country's 50 lakh deaf citizens and almost 20 lakh people with speech disabilities.

Aim: The aim of developing the Indian Sign Language Dictionary was to remove communications barriers between the deaf and hearing communities.

Beyond News

- The country's first sign language dictionary, in the works for one and a half years, was launched by the Minister for Social Justice and Empowerment .
- The dictionary, developed by the Indian Sign Language Research and Training Centre, has subtitled videos depicting the various signs.

India among 20 nations that pledged \$100 million to agency for Palestine refugees

News: India is among 20 nations that have pledged a total of about \$100 million to the United Nations (UN) relief agency charged with the well-being of Palestinian refugees across the Middle East.



Beyond News

- UN Secretary-General Antonio Guterres voiced gratitude for the generous pledges of approximately \$100 million made at the Extraordinary Ministerial Conference in Rome on March 15 titled '**Preserving Dignity and Sharing Responsibility Mobilizing Collective Action for UNRWA**'
- Almost 20 donors pledged additional contributions, including Qatar, Norway, Turkey, Canada, India and Switzerland.
- Giving details of the pledges made by the nations, spokesman told that the Emir of the Qatar pledged \$50 million in new contributions, while Norway pledged \$13.6 million, Turkey \$10 million and a doubling of their food aid, Canada \$7.7 million, India \$5 million and Switzerland \$4.2 million.
- He said the ministerial conference was an "exceptional demonstration" of high-level support for UNRWA's mandate and a recognition for the continued necessity of its work in support of over five million Palestine .

Insurers cannot reject claims on genetic disorder clause

News: The Insurance Regulatory and Development Authority of India (IRDAI) has directed insurers not to reject any claim, on existing policies, based on exclusions related to 'genetic disorder'.

Beyond News

- It also advised the companies to refrain from including 'genetic disorders' as one of the exclusions in new health insurance policies.
- A circular in this regard, to all life, general and health insurers, follows the High Court of Delhi, in a case, directing IRDAI to take a re-look at the exclusionary clauses in insurance contracts.
- The High Court wanted the regulator to ensure that insurance companies do not reject claims on the basis of exclusions relating to genetic disorders.
- The High Court had, in the matter of United India Insurance Company versus Jai Parkash Tayal, held that the exclusionary clause of 'genetic disorders', in the insurance policy, is too broad, ambiguous and discriminatory hence violative of Article 14 of the Constitution of India, a circular from IRDAI (Non Life).
- Thus, in pursuance of the High Court's directions, all insurance companies offering contracts of health insurance are directed that no claim in respect of any existing health insurance policy shall be rejected based on exclusions related to 'genetic disorder'.

General Studies-03

Supreme Court issues notice on Polavaram project

News: The Supreme Court asked the Centre, Andhra Pradesh, Telangana, Odisha, and Chhattisgarh to respond to a petition challenging the implementation of the Polavaram project.

Polavaram project

- **Polavaram Project** is a multi-purpose irrigation project which has been accorded national project status by the union government. This dam across the Godavari River is under construction located in West Godavari District and East Godavari District in Andhra Pradesh state and its reservoir spreads in parts of Chhattisgarh and Odisha States also.

Beyond News

- The petition filed by NGO RELA, represented by advocate Sravan Kumar, is against an order of the National Green Tribunal (NGT), which refused to go into the merits of the issue for the sole reason that a similar matter is pending in the Supreme Court.
- A Bench issued notice to the Centre and the States as Mr. Kumar urged that the project was nearing completion and an intervention should be made forthwith.
- He argued that the rights protected under various laws such as the Scheduled Tribes and Other Forest Dwellers (Recognition of Forest Rights) Act 2006 have been blatantly violated by the project.
- He claimed large-scale destruction of environment, forests and irreparable loss to about four lakh people, including 2.5 lakh tribals and Dalits due to the Polavaram project.

MARCH 25&26

General Studies-01

Damaged reefs turn butter flyfish into flexible eaters

News: In bleached coral reefs that host less food resources, Lakshadweep's melon butterflyfish change their diets and eating patterns to adapt to reef damages caused by climate change.

Beyond News

- Climate change induced ocean warming can cause coral bleaching, which stresses coral patches and makes them prone to death.



- Bleaching is not new in Indian reef systems; the bleaching event of 2010 killed patches of corals in several reefs off the Lakshadweep Islands. This can be catastrophic for exclusive coral-eaters like melon butterflyfish.

Live coral cover

- Scientists from Bengaluru's Nature Conservation Foundation (NCF) and National Centre for Biological Sciences (NCBS) studied live coral cover and butterflyfish numbers in three reefs fringing the islands of Kadmat (coral death was highest here with only about 7% live coral cover and, therefore, resource-poor), Bitra and Kavaratti (least coral death, nearly four times more live coral cover than Kadmat) in Lakshadweep.
- Surprisingly, their surveys show that despite these large differences in coral cover across the reefs, melon butterflyfish numbers were similar in all three.
- The video footage recorded the coral species that 58 pairs of melon butterflyfish they followed ate, the time the fish spent eating and the time they took to travel between patches of live coral to obtain food. In resource-poor reefs, fish ate coral species that they otherwise clearly avoided in rich reefs like Kavaratti.
- Fish spent more time travelling and less time searching for food in resource-poor reefs, making food procurement both difficult and energetically expensive.
- To compensate for this, the fish ate more 'compulsively' in such reefs, taking faster bites (about two times quicker than in rich reefs) off corals in a hurry.

Mount Etna is 'sliding towards the sea'

News: Europe's most active volcano, Mount Etna on the Italian island of Sicily, was sliding towards the Mediterranean sea at a rate of 14mm per year, according to a report.

Beyond News

- The U.K.-led team of scientists have said the situation will need careful monitoring because it may lead to increased hazards at Etna in the future.
- The group has published its findings in the Bulletin of Volcanology.
- Murray's team has conducted lab experiments to illustrate how this works.

The group believes it is the first time that "basement sliding" of an entire active volcano has been directly observed.

General Studies-02

SC seeks Centre's views on polygamy, 'nikah halala'

News: The Supreme Court agreed to examine the constitutional validity of polygamy and 'nikah halala' among Muslims and sought the views of the Union



government and the Law Commission on the the practices.

Beyond News

- A Bench considered the submission that a five-judge Constitution Bench, in its 2017 verdict, kept open the issue of polygamy and 'nikah halala' while quashing triple talaq.
- By a majority of 3:2, the Constitution Bench held triple talaq as unconstitutional.
- The Bench said a fresh five-judge Constitution Bench would be set up to deal with the constitutionality of 'nikah halala' and polygamy.
- While polygamy allows a Muslim man to have four wives, 'nikah halala' deals with the process in which a Muslim woman has to marry another person and get divorced from him before being allowed to marry her divorcee husband again.

The Bench was hearing at least three petitions including some public interest litigation (PIL) pleas challenging the practices on various grounds including that they violate Right to Equality and gender justice.

U.S., India hold naval training

News

- Indian Navy's Talwar class frigate *INS Tarkash* carried out a "greeting and training" exercise with the U.S. Navy's Theodore Roosevelt Carrier Strike Group (TRCSG) which was until now involved in operations against the Islamic State in the Arabian Gulf.

Beyond News

- S. Embassy said in a statement that, *INS Tarkash* sailed in formation with aircraft carrier *USS Theodore Roosevelt*, guided-missile destroyer *USS Preble* (DDG 88) and other ships on March 25 as part of the exercise.
- The embassy also said that, During the exercise, personnel from both the sides practiced working together and strengthened their crews' ship handling. Exercises included drills in communications and navigating in several close formations.
- This exercise offered a unique opportunity to further our capabilities to operate with and learn from one another.
- Ten Indian sailors toured spaces aboard *Preble* such as combat information center, central control station, and the bridge, while 10 *Preble* Sailors visited *Tarkash*.
- *USS Preble* is currently deployed to the U.S. 7th Fleet area of operations with the aircraft carrier *USS Theodore Roosevelt*, the flagship of Carrier Strike Group 9, along with the guided-missile cruiser *USS Bunker Hill*, and guided-missile destroyers *USS Halsey*, *USS Higgins* and *USS Sampson*.
- TRCSG will now be in the U.S. 7th Fleet area responsible for counter-piracy,



freedom of navigation operations and training.

Bill on transfer of assigned lands cleared

News

- The Telangana State Government assured the Assembly that transfer of assigned lands would be allowed only in case they are in the possession of Scheduled Castes and Scheduled Tribes persons and not others.

Beyond News

- A Bill to amend the Telangana Assigned Lands (Prohibition of Transfers) Act, 1977, was passed for the purpose.
- Deputy Chief Minister, who also holds the Revenue portfolio, stated that the Act was first amended in 2007 in combined Andhra Pradesh for regularisation of assigned lands transferred to others till September 30, 2007.
- The present amendment extends that date till December 31, 2017, Deputy Chief Minister said adding that it would provide for transfer of 2.5 acres wet and five acres of dry assigned land to other SC/ST persons who were in the possession of those lands after purchasing them from the original assignees.
- A total of 20,13,833 acres land was assigned to dalits in Telangana so far and out of it 2,14,627 was in possession of others.
- Bills providing for selection and appointment of Director General of Police (Head of Police Force) by the State Government instead of selection by UPSC; amendment to the Telangana Medical Practitioners Registration Act, 1968, removing the requirement of compulsory rural medical service to Post Graduate doctors; amendments to the Telangana Advocates' Welfare Fund Act, 1987 and Telangana Advocates Clerks Welfare Fund Act, 1992 were also passed.

MARCH 27&28

General Studies-01

When snow turned orange

News:

- Dust from a sandstorm in the Sahara desert is causing snow in eastern Europe to turn orange, transforming the mountainous regions of Ukraine, Russia, Bulgaria and Romania into Mars-like landscapes, the media reported .

Beyond News

- The unusual scenes were believed to be created by a mix of sand, dust and pollen particles stirred up and swept across from storms in northern Africa.
- According to meteorologists, the phenomenon occurs roughly every five years.
- As the sand gets lifted to the upper levels of the atmosphere, it gets distributed elsewhere. Looking at satellite imagery from NASA, it shows a lot of sand and dust in the atmosphere drifting across the Mediterranean.
- It is not the first time eastern Europeans have experienced an eerie snow-tint.
- A similar phenomenon occurred in 2007 when mysterious “oily” orange snow fell across three regions of southern Siberia.

General Studies-02

Khaps cannot interfere in marriage of consenting adults, rules Supreme Court

News

- In an “unlimited direction” to parents, society and khap panchayats (community groups), the Supreme Court ruled that interference, harm or insult caused to consenting adults who fall in love and choose to marry is absolutely illegal.



Beyond News

- With this judgment, the court has filled the vacuum caused by the lack of a specific penal law against honour killings.
- The court said the fundamental right of two people who wish to get married to each other and live peacefully is absolute.
- A bench had repeatedly emphasised that no one has any individual, group or collective right to harass a couple.
- The Chief Justice has said it is up to the courts to decide legally whether a marriage is null and void, or if children are legitimate or illegitimate; “no other person or group” have the right to intervene.
- The government had acknowledged that “honour killing was neither separately defined or classified as an offence under the prevailing laws. It [honour killing] is treated as murder,” the government said in its written suggestions.
- The proposed law against honour killing The Prohibition of Interference with Freedom of Matrimonial Alliance Bill is still under circulation among the States.

Centre not for 'creamy layer' within SCs, STs category

News

- The Union government opposed the idea of a “creamy layer” within the Scheduled Castes (SC) and Scheduled Tribes (ST) category.

Beyond News

- The government told a Bench that the principle of creamy layer cannot be applied to the presidential order on quota for SC/ST groups.
- The court was hearing a petition to exclude the affluent members or the “creamy layer” of the SC and ST communities from accessing reservation benefits.
- The Mandal judgment, however, confined the exclusion of ‘creamy layer’ only to the OBCs and not the SC/STs. Now, the petition wants the same exclusion from quota benefits to the ‘creamy layer’ among the SC/STs too.
- Additional Solicitor General P.S. Narasimha said the government would not do anything to dilute the benefits due to SC/STs.
- The Bench asked the government to file a categorical affidavit.

China resumes data sharing on Brahmaputra as part of post-Doklam thaw

News: China pledged to continue data sharing of Brahmaputra and Sutlej waters, marking another confidence building step between the two countries in the post-Doklam phase.



Beyond News

- The decision was taken during the 11th meeting of the India-China Expert Level Mechanism (ELM) on Trans-border **Rivers**. The two-day meeting began on March 26 in Hangzhou.
- The data on water flows in both rivers is shared during the monsoons, to predict flooding, mainly in the northeast. It has been resumed after a gap of one year, when ties between the two countries had been strained due to the military standoff at the Doklam plateau.

Chinese dams

- The Chinese have been building dams on the Brahmaputra, including the Zangmu barrage. But they say that these dams are not used for storing water a downstream concern in Bangladesh and India—but for generating hydro-electricity alone.

- An Indian embassy press statement said, that both sides also reviewed the report on how data provided by China on the two rivers was being utilised.
- Analysts point out that the resumption of water sharing data is in tune with a series of steps that are being taken to reboot **India-China** post-Doklam ties, following talks between the Chinese President Xi Jinping and Prime Minister Narendra Modi at the Xiamen BRICS summit in September.

General Studies-03

China's space lab expected to fall to earth this week

News: China's first experimental space lab is expected to fall back to Earth between March 31 and April 4 and should burn up in the atmosphere, space authorities said.

Beyond News

- Tiangong-1 has officially stopped sending data and entered its final phase of life on March 16, a statement issued on March 26, by the **China** Manned Space Engineering Office said.
- The Tiangong, or Heavenly Palace, is orbiting at an average height of about 216.2 kms, the announcement noted, but did not disclose any re-entry location.
- It is impossible to name the exact re-entry location at this stage.
- The approximate re-entry location cannot be decided until the last two hours before it starts to fall based on international precedents.
- Launched in September 2011, Tiangong-1 an experimental had a design life of two years. The heavenly vehicle successfully docked with the Shenzhou-8, Shenzhou-9 and Shenzhou-10 spacecraft and undertook a series of experiments.
- The lab completed its main missions following Shenzhou-10's return in June 2013.
- During its extended flight, Tiangong-1 conducted experiments in space technology, space-earth remote sensing and space environment exploration, the office said. China plans to finalise its space station to rival Mir, the Russian space station currently in orbit by 2022.



Deer to get access to drinking water 24x7 in Kondapalli forest

News

- Spotted deer and sambar in the Kondapalli Reserve Forest (KRF) will now get access to drinking water 24x7 this summer.
- **Kondapalli Reserve Forest** is a reserved forest in the Krishna district of Andhra Pradesh. It is spread over an area of 30,000 acres(120 km²) and is under the protection of Andhra Pradesh Forest Department.

Beyond News

- The forest authorities have decided to ensure availability of water round the clock in the natural water sources for the deer in the reserve forest.
- Scarcity of water had forced the animals to come out of the forest to quench their thirst, thereby falling prey to hunters.
- Since 2015, three deer were hunted by the local communities when they came out of the reserve forest in search of water. Cases are under trial as per the Wildlife (Protection) Act 1972.

India ranks 67 in fixed broadband speed in February: Ookla

News: India ranked 67th in terms of fixed broadband speeds and 109th for mobile internet speeds globally in February, internet testing and analysis platform Ookla said.

Beyond News

- The company's updated Speedtest Global Index revealed that in absolute terms, India's performance in fixed broadband download speeds have gone up from average speeds of 18.82 mbps in November 2017 to 20.72 mbps in February 2018, marking significant improvement since last quarter.

'Illegal immigrants issue top priority'

News: Bangladesh High Commissioner said that the issue of illegal Bangladeshi immigrants in India, particularly those with links to terrorist outfits, was being handled on a priority basis.

Beyond News

- Over the past two weeks, the Maharashtra Anti Terrorism Squad has arrested 30 alleged citizens of Bangladeshi from various parts of the State.
- Three of the arrested accused claimed to be members of Ansarullah Bangla Team, a terrorist organisation, which owes allegiance to the Al-Qaeda and is banned in Bangladesh.
- He also said that, there is consistent coordination between India and Bangladesh over the issue. Information is shared regularly. The border security agencies of both countries meet twice a year, and Home Ministers of the countries meet at least once a year to discuss the issue. It is being constantly reviewed. The Bangladesh government has also nabbed and handed over insurgent elements to Indian security agencies.

- He said that the governments of both countries were in talks to ensure bilateral cooperation in fields such as security, trade, connectivity, energy, and civil nuclear agreement.

Animals too have DNA fingerprints

News: Individual members of many species also have unique and identifiable genetic profiles.

Beyond News

- As with human beings, a large number of variations in a relatively short sequence of DNA can make it possible to identify an individual and to distinguish that animal from other members of the species.
- DNA fingerprinting is commercially available for dogs, for example, for purposes like identifying a lost or stolen pet or tracing a pedigree.

Uses

- The approach is also used in wildlife research.
- It can determine whether an isolated population of wild birds has become too inbred for survival, for instance, so that some can be moved elsewhere.
- Scientists at the University of Arizona and elsewhere also have turned to genetic fingerprinting to identify individual animals that have been poached or illegally trafficked, as well as to determine where imported animals came from.

MARCH 29

General Studies-01

115,000-year-old bone tools unearthed in China

News: The tool making techniques mastered by prehistoric humans in China were more sophisticated than previously thought, suggests an analysis of 115,000-year-old bone tools discovered in the country.

Beyond News

- Marks found on the excavated bone fragments show that our ancestors living in China in the early Late Pleistocene were



already familiar with the mechanical properties of bone and knew how to use them to make tools out of carved stone.

- These artefacts represent the first instance of the use of bone as raw material to modify stone tools found at an East Asian early Late Pleistocene site.
- Until now, the oldest bone tools discovered in China dated back 35,000 years and consisted of assegai (spear) points.
- Prior to this discovery, research into the technical behaviour of humans inhabiting China during this period was almost solely based on the study of tools carved from stone.
- The seven bone fragments analysed by Doyon and his colleagues were excavated between 2005 and 2015 at the Lingjing site in central China's Henan province.
- The artifacts were found buried at a depth of roughly 10 metres.
- The bone fragments were dated using optically stimulated luminescence (OSL), a method widely used by geologists for dating the sediment layers in which tools are found.
- The researchers identified three types of bone retouchers, known as soft hammers, that were used to modify stone tools.

The researchers have not yet determined which hominid species the users of these prehistoric tools belonged to, although they do know that they lived during the same period as Neanderthals and Homo sapiens.

General Studies-02

Indian Immunologicals unveils Pentavalent vaccine

News:

- Indian Immunologicals Ltd. (IIL) has launched Vaxtar 5, a pentavalent vaccine for children.
- **Pentavalent** combines five different **vaccines** in a single vial. It protects against five diseases: diphtheria, pertussis (whooping cough), tetanus, hepatitis B and Haemophilus influenzae type B (Hib). **Pentavalent vaccine** is a successor to the diphtheria-tetanus-pertussis (DTP) **vaccine**.

Beyond News

- Developed with the company's research and development expertise, it will be made at the IIL's vaccine manufacturing facility in Hyderabad for retail market as well as the national Universal Immunisation Programme implemented by the Union Ministry of Health and Family Welfare.
- The vaccine is available in single and multidose presentations.
- The Ministry, which had introduced pentavalent vaccine four years ago, procures about 85 to 90 million doses annually and is in the process of scaling up the use across the country.
- In a recent tender floated by the Ministry for pentavalent vaccine, IIL emerged as the most competitive bidder.

- A wholly owned subsidiary of National Dairy Development Board, the company had launched several other human vaccines in the past decade and supplying its Hepatitis B, DPT (Triple Antigen) and TT (Tetanus Toxoid) vaccines to UIP.
- It is also working on hexavalent vaccine which includes inactivated polio antigen.

Trade-an agenda of Tokyo talks

News

- India and Japan will discuss cooperation in the Indo-Pacific in the first high-level meeting since the Quadrilateral and iron out growing worries over bilateral trade as External Affairs Minister Sushma Swaraj meets Japanese Foreign Minister Taro Kono in Tokyo.

Beyond News

- The two sides are meeting for the ninth India-Japan Strategic Dialogue, instituted in 2007 as an annual dialogue held alternately in Delhi and Tokyo.
- Among the discussions will be the next steps in the Quadrilateral engagement between India-Japan-US-Australia, a project initiated by Prime Minister Shinzo Abe in 2007, which was revived in 2017, with a meeting of officials of all four countries.
- Swaraj and Mr. Kono are expected to discuss actions required to keep a “free and open Indo-Pacific” as well as developing joint connectivity projects in Asia and Africa.
- Japan’s development agency JICA provided India with soft loans of more than US\$23.36 billion at minimal rates, becoming the biggest donor partner, while India is JICA’s largest recipient since 2008, with its biggest investment in the Mumbai-Ahmedabad bullet train project.
- However concerns over declining trade also hang over the engagement, with Indian exports to Japan having halved in the four years from \$6.81 billion in 2013-14 to \$3.85 billion in 2016-17, while the trade deficit more than doubled in that period.

Indus Commission talks today

News: India and Pakistan will go ahead with talks on the Indus Waters Treaty despite an upsurge in tensions over LoC crossfire and allegations of harassment of diplomats in Delhi and Islamabad, Ministry of External Affairs sources confirmed.

Beyond News

- This is the 114th meeting of the Permanent Indus Commission (PIC) take place in New Delhi to hold technical deliberations on various issues.
- India’s Indus water commissioner P.K. Saxena, technical experts and a representative of the Ministry of External Affairs will meet with a six-member delegation from Pakistan, led by Syed Muhammad Mehar Ali Shah.

- The last meeting of the PIC had been held in Islamabad in March 2017, a significant move at the time as it came after the “surgical strikes” by India across the Line of Control, and the government’s announcement that it would reconsider its position on the 1960 treaty with Pakistan after terrorist attacks in Uri.
- While the government kept its treaty commitments to meet, it has been exploring ways to utilise its share of the Indus waters more efficiently and to the maximum permissible.
- Ahead of the PIC meeting, Minister for Water resources Nitin Gadkari announced that three dams would be built in Uttarakhand to further that effort.
- Minister for Water resources said that, water from (share of) rivers was going into Pakistan. They are making detailed project reports to stop that from happening and water will be given to Punjab, Rajasthan, Delhi and Haryana.

General Studies-03

GSLV successfully places communication satellite GSAT-6A in orbit

News: India’s latest communication satellite GSAT-6A was launched onboard Geosynchronous rocket GSLV-F08 from the spaceport at Sriharikota and successfully placed in the designated orbit, in yet another achievement for the ISRO.



Beyond News

- The Geosynchronous Satellite Launch Vehicle (GSLV-F08), fitted with indigenously developed cryogenic third stage, injected the satellite into orbit about 18 minutes after its lift off from the Satish Dhawan Space Centre at Sriharikota.
- The satellite would provide a thrust to mobile communication through multi-beam coverage facility.
- This marks the 12th flight of Geosynchronous Satellite Launch Vehicle GSLV-F08 and sixth flight with indigenous Cryogenic upper stage.
- GSAT-6A, is similar to GSAT-6, a high power S-band communication satellite built on I-2K satellite bus with a mission life of about ten years, the ISRO said.

Scientists puzzled by exotic distant galaxy lacking dark matter

News: Astronomers have detected for the first time a galaxy that is devoid of dark matter, the plentiful but enigmatic material that does not emit light or energy and had been considered a fundamental part of all galaxies including our own Milky Way.

Beyond News

- The discovery, announced on March 28, is forcing scientists to rethink their ideas about the formation of galaxies.
- Paradoxically, the discovery of a galaxy without dark matter may actually confirm that the stuff actually exists by contradicting hypotheses advanced by dark matter doubters.
- The galaxy, called NGC1052-DF2 and located about 65 million light years away from Earth, also appears to be devoid of gas and is relatively sparsely populated by stars.
- It is about the same size as the Milky Way, but has roughly 250 times fewer stars: 400 million compared to the Milky Way's 100 billion stars. It is classified as an **ultra-diffuse galaxy**, a kind first recognized in 2015.
- Dark matter, which is invisible, is thought to comprise about a quarter of the universe's combined mass and energy and about 80 percent of its total mass, but has not been directly observed.
- Scientists believe it exists based on gravitational effects it seems to exert on galaxies. The universe's ordinary matter includes things like gas, stars, black holes and planets, not to mention shoes, umbrellas, platypuses and whatever else you might see on Earth.
- The scientists spotted NGC1052-DF2 using the Dragonfly Telephoto Array, a telescope in New Mexico.

MARCH 30

General Studies-01

Himalayas warmest on record: researchers

News: Recent decades have been the wettest and warmest on record in the Himalayas, say researchers who are alarmed that a “warming signature” has led to an overall rise in mercury levels and the retreat of glaciers.

Beyond News

- They warn that the impact of global warming is clearly evident over the northwestern Himalayas in the form of rising temperatures in the last 25 years.
- An overall warming signature was observed with the maximum, minimum and mean temperatures rising.
- The maximum, minimum and mean temperatures in the Himalayas saw a total increase of 0.9 degree, 0.19 degree and 0.65 degree, respectively, over a quarter of a century.
- However, the warming was not consistent across the Himalayas. The highest rise in mean temperature was seen in the Greater Himalayas at 0.87 degree Celsius (1991-2015), followed by the Karakoram Himalayas.

General Studies-02

Govt. to file review plea in SC against ruling on SC/ST Act

News: Union Law Minister Ravi Shankar Prasad said the government is “preparing” to file a review petition against the top court’s ruling on the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989 that puts a stop to immediate arrests in complaints filed under its provisions.

Beyond News

- Officials in the Law Ministry said the government will approach the Supreme Court as early as next week after preparing a “water tight case” in consultation with the Ministry of Social Justice, the nodal Ministry to enforce the Act.
- The government has been under pressure from the Opposition as well from its allies and Ministers from the Dalit community to seek a review or bring an amendment to undo the Supreme Court’s ruling.
- In a recent order, the Supreme Court had banned automatic arrests and registration of criminal cases under the Act.
- The court had laid down stringent guidelines such as written permission from the appointing authority before a public servant could be arrested.
- The Prime Minister is understood to have assured the delegation that the government would initiate ‘remedial measures’ to ensure that the Act retains its effectiveness in ensuring justice to Dalits and tribal people.

Seychelles says “NO” to India’s proposal for naval base

News:

- India’s plans to get a foothold in the Indian Ocean islands of Seychelles received a setback after its President Danny Faure told Parliament earlier this week that he will not take up the Assomption island project deal with India for ratification.

Seychelles

- The Seychelles is an archipelago of 115 islands in the Indian Ocean, off East Africa. It’s home to numerous beaches, coral reefs and nature reserves, as well as rare animals such as giant Aldabra tortoises.

Beyond News



- This announcement came after Wavell John Charles Ramkalawan, the leader of the Opposition of Seychelles, said that he would oppose the deal.
- Significantly, the leader of the Opposition was hosted here in January as India tried to get him on board for the key project, which was rejected by the Indian Ocean country earlier this week.
- Ramkalawan declared on Tuesday that the Assomption island project, which was expected to host a naval facility, would not take off.
- Ramkalawan visited India in the second week of January and participated in the PIO Parliamentary Conference which was addressed by External Affairs Minister Sushma Swaraj and Prime Minister Narendra Modi.
- **The aim** of the conference was to firm up ties with individuals of Indian origin who are spread across the world and are playing important role in their host societies.
- He also met President Ram Nath Kovind on January 9, when Mr. Kovind said that his visit would help strengthen India-Seychelles ties. Mr. Ramkalawan, who is an ethnic Indian, was earlier in the race to occupy the post of the President of the country.

The agreement covers within its purview our shared efforts in anti-piracy operations, and enhanced EEZ surveillance to prevent intrusions by potential economic offenders including those indulging in illegal fishing, poaching, drug and human trafficking.

US wants visa applicants to submit phone, email, social media details

News: The Trump administration wants all US visa applicants to submit details of their previous phone numbers, email addresses and social media histories as part of its “vetting” practice and to prevent entry of individuals who might pose a threat to the country.

Beyond News

- In a document posted on the Federal Register, anyone who wants to come to the US on a non-immigrant visa will have to answer a list of questions under new rules.
- The State Department estimates that the new visa forms would affect 710,000 immigrant and 14 million non-immigrant visa applicants.
- It said that in addition to asking the visa applicants to provide their identifications or handles of their social media platform, they would also be asked to give details of their phone and mobile numbers used in the last five years.
- Other questions seek five years of previously used telephone numbers, email addresses and international travel whether the visa applicant has been deported or removed from any country and whether specified family members have been involved in terrorist activities.
- After its publication, the public would have 60 days to comment on the proposed new visa form.
- One question lists multiple social media platforms and requires the applicant to provide any identifiers used by applicants for those platforms during the five years preceding the date of application.
- It said the State Department will collect the information from visa applicants for “identity resolution and vetting purposes” based on statutory visa eligibility standards.

- However, it intends not to routinely ask the question of applicants for specific visa classifications, such as most diplomatic and official visa applicants.
- The revised visa application forms will also include additional information regarding the visa medical examination that some applicants may be required to undergo.

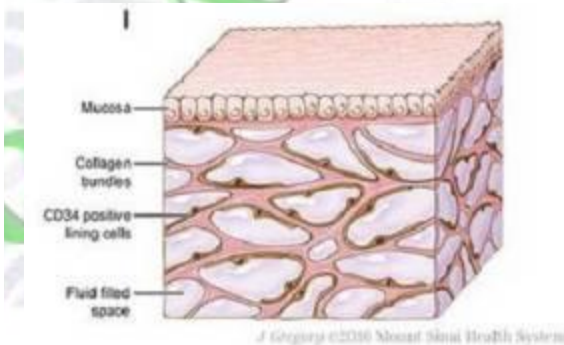
General Studies-03

Scientists report previously-unrecognised anatomical structure in the human body

News: Researchers from New York University School of Medicine have reported a previously unrecognised structure in the human body which may have implications in the mechanisms of major diseases.

Beyond News

- The reveals that layers below the skin's surface, which were long thought to be dense, connective tissues are instead interconnected, fluid-filled compartments.
- This series of spaces, supported by a meshwork of strong (collagen) and flexible (elastin) connective tissue proteins, may act like shock absorbers that keep tissues from tearing as organs, muscles, and vessels squeeze, pump, and pulse as part of daily function.
- The scientists used Confocal laser endomicroscopy (pCLE), which provides real-time images of human tissues, to find these compartments.
- By freezing the biopsy tissue, the researchers preserved the structure and demonstrated that this new part was supported by a complex network of thick collagen bundles.
- The researchers observed these structures in many tissues of the body like gastrointestinal tract, urinary bladder, skin and the lungs.



How is this new discovery helpful?

- The report says that “these anatomic structures may be important in cancer metastasis, edema, fibrosis, and mechanical functioning of many or all tissues and organs.”
- This fixation artifact of collapse has made a fluid-filled tissue type throughout the body appear solid in biopsy slides for decades, and our results correct for this to expand the anatomy of most tissues.

This finding has potential to drive dramatic advances in medicine, including the possibility that the direct sampling of interstitial fluid may become a powerful diagnostic tool.

MARCH 31

General Studies-01

Ancient temple found in China

News: Archaeologists in China's Henan province have discovered ruins of a temple dating back around 5,000 years.

Beyond News:

- The excavation at the Qingtai ruins in Xingyang city was listed as one of the top five archaeological discoveries in the province.
- Nine ceramic pots were laid out in the shape of the Big Dipper, with a round sacrificial altar at the eastern side.
- The Big Dipper refers to the seven bright stars of the constellation Ursa Major.
- A human skeleton showing signs of unnatural death and three funeral urns were found around the altar.
- The discovery shows that people had some astronomic knowledge.

General Studies-02

Russia expels diplomats from 23 countries as spy crisis escalates

News

- **Russia** expelled diplomats from 23 countries in retaliation against the West in a spy row, in the biggest wave of tit-for-tat expulsions in recent memory.

Beyond News

- The Russian Foreign Ministry said it had **summoned the heads of missions from 23 countries** almost all of them European Union member states to tell them that some of their diplomats had to leave.
- The diplomats from France, Canada, Germany, Australia and other countries were earlier seen arriving at the Russian Foreign Ministry in flagged official cars.
- France, Germany, Canada and Poland each said that Russia was expelling four of their diplomats. Among the other countries that had similarly been told to pull their envoys were the Netherlands, Sweden, the Czech Republic, Finland, Lithuania and Norway.
- Thirteen Ukrainian diplomats should also leave Russia.
- The moves came in retaliation for the coordinated expulsion of Russian diplomats by Britain and its allies over a **nerve agent attack** against former double agent Sergei Skripal and his daughter Ms. Yulia in the English city of Salisbury on March 4.

India, Pak. call truce over envoys

News: The protracted spat between India and Pakistan over harassment of respective diplomatic staff ended.

Beyond News

- Both sides will ensure safety of each other's diplomats, families of diplomats and diplomatic premises, an official announcement said.
- India and Pakistan have mutually agreed to resolve matters related to the treatment of diplomats and diplomatic premises, in line with the 1992 ,Code of Conduct for the treatment of diplomatic/consular personnel in India and Pakistan.
- The decision comes as a relief for serving diplomats on both sides, who alleged for weeks that they were being harassed by security personnel in both Delhi and Islamabad by aggressive surveillance and stalking.
- During this period, India sent more than a dozen note verbales to Pakistan to uphold the principles enshrined in the Vienna Convention for protection of diplomats.
- Diplomatic sources indicated that the resolution will ensure that both sides will abide by globally accepted diplomatic protocols as well as bilateral understandings.
- The exchange between the two countries became heated following daily incidents and at one point, Pakistan even recalled its envoy for 'consultations'.
- This bilateral mechanism is a special instrument to ensure safety and security of Indian and Pakistani diplomats who have the critical responsibility of operating in hostile circumstances.

General Studies-03

Scientists find glucose-derived molecule switches off inflammation

News: Scientists have discovered a new metabolic process in the body that can switch off inflammation.

Beyond News

- They found that 'itaconate' a molecule derived from glucose acts as a powerful off-switch for macrophages, which are the cells in the immune system that lie at the heart of many inflammatory diseases.
- It is well known that macrophages cause inflammation, but they have found that they can be coaxed to make a biochemical called itaconate.
- This functions as an important brake, or off-switch, on the macrophage, cooling the



heat of inflammation in a process never before described.

- The discovery is very much on the frontier of inflammation research and the researchers are now exploring its relevance to the onset and development of inflammatory and infectious diseases.
- They are also keen to explore whether the findings can be exploited in the effort to develop new anti-inflammatory medicines.
- The macrophage takes the nutrient glucose, whose day job it is to provide energy, and surprisingly turns it into itaconate.
- This then blocks production of inflammatory factors, and also protects mice from the lethal inflammation that can occur during infection.

E-waste industry comes together to streamline recycling process.

News: Of an estimated 18 lakh metric tonnes of electronic waste (e-waste) that India generates per annum, less than 2 lakh tonnes reach licenced recyclers.

Beyond News:

- The rest is either reaching the unorganised sector (such as scrap dealers), or ending up in landfills.
- Not only does this mean that potentially recyclable e-waste is being wasted, but also that unscientifically managed e-waste is a hazard that stands exposed.
- Now, around 180 recyclers from across the country have joined hands to change the narrative and come together to form the All India e-Waste Recyclers' Association. To be headquartered in Bengaluru, the association will look at streamlining the dismantling and recycling cycle of e-waste in the country.
- The e-waste quantum is calculated based on the sales that happened in the previous year, according to which the estimated e-waste generated is 18 lakh metric tonne per annum. Bengaluru generates around 1 lakh metric tonnes.
- The other big contributors are the National Capital Region, Mumbai, Chennai and now Hyderabad and Pune. Electronics is a component in many things from laptops and air-conditioners to cars, which has 26% electronic component. The rate of progress in technology is a big key in e-waste.
- The association is aiming at tackling the basics first: work with local municipal bodies to set up e-waste collection centres similar to the dry waste collection centres that are now being established in many cities.
- They also want to ensure that people find it convenient to make their e-waste reach recyclers. For this, they are planning to set up technology-driven drop boxes to enable people to put their waste and be paid back through e-wallets.



U.P. CM inaugurates India's longest elevated road in Ghaziabad

News: Uttar Pradesh Chief Minister inaugurated a 10.30-km-long elevated road, touted to be the longest of its kind in the country, connecting UP Gate and Rajnagar.



Beyond News

- Built at a cost of Rs. 1,147 crore, the six-lane elevated road is supported on 227 pillars.
- Vehicle owners will be allowed to drive at an average speed of 80 kmph on the road.

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