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— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CURRENT AFFAIRS ANALYST
WEEK- 4 (MARCH, 2020)

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SECTION: A
(MAINS)
CURRENT AFFAIRS

BHARAT STAGE EMISSION STANDARDS

CONTEXT

- **The Society of Indian Automobile Manufacturers (SIAM) approached the Supreme Court seeking directions for ensuring that sale and registration of BS-IV vehicles is allowed till the cut-off date of March 31, 2020.**

◉ ABOUT:

- The Bharat Stage Emission Standards (BSES), introduced in 2000, are emission standards instituted by the government to regulate the output of air pollutants found in petrol and diesel vehicles.

- BSES are based on European norms for emission from motor vehicles, which are commonly classified as 'Euro 2', 'Euro 3'

- The regulations were first launched in India in 2000 and have seen several revisions in the last two decades.

- The different norms are brought into force in accordance with the timeline and standards set up by the Central Pollution Control Board (CPCB).

- India 2000, which was based on the Euro 1 standards, was replaced with Bharat Stage II (BSII) norms in 2001.

- These were followed by BS3, while the latter was then replaced with BS4 standards. India is now all set to leapfrog to BS6 emission standards, which will roll out on 1 April 2020.

- The sale of BSIV-compliant vehicles will be banned with the introduction of the next level of emission standards.

- The first emission norms for Indian motor vehicles were the idle emission limits that came into effect in 1989.

- These regulations were replaced by mass emission limits for petrol engines in 1991 and diesel engines in 1992.

- By 1995, the use of catalytic converters was made compulsory for all cars that were sold in metros.

- The following table shows Indian Emission Standards (four wheel):

How BS-VI will make difference?

- BS VI norms include a wide list of technology modifications, the most significant being making 'On-board diagnostics (OBD)' mandatory for all vehicles.

- Making OBD mandatory is to make sure that the emission control component work at its optimum efficiency at all times.

- It will help to detect the malfunction with the help of the error codes sent by the malfunctioning component.

- The BS-VI emission norms would come into force from

Table: Indian Emission Standards (4-Wheel Vehicles)

Standard	Reference	Year	Region
India 2000	Euro 1	2000	Nationwide
Bharat Stage II	Euro 2	2001	NCR*, Mumbai, Kolkata, Chennai
		2001	NCR*, 13 Cities †
		2003.04	Nationwide
Bharat Stage III	Euro 3	2005.04	NCR*, 13 Cities †
		2010.04	Nationwide
Bharat Stage IV	Euro 4	2010.04	NCR*, 13 Cities †
Bharat Stage V	Euro 5	(to be skipped)	
Bharat Stage VI	Euro 6	2020.04 (proposed) [11]	Entire Country
*National Capital Region (Delhi)			
† Mumbai, Kolkata, Chennai, Bengaluri, Hyderabad, Ahmedabad, Pune, Kanpur, Lucknow, Sholapur, Jamshedpur and Agra			

April 1, 2020, across the country.

So, what's the difference between BS IV & BS VI:

◎ Petrol Emission Norms (All figures in g/km)

Emission Norms	CO	HC	NOx	HC+NOx	PM
BS-IV	1.00	0.10	0.08	---	---
BS-VI	1.00	0.10	0.06	---	0.005

◎ Diesel Emission Norms (All figures in g/km)

Emission Norms	CO	HC	NOx	HC+NOx	PM
BS-IV	0.50	----	0.25	0.30	0.025
BS-VI	0.60	----	0.06	0.17	0.005

◎ **Carbon Monoxide emissions (CO):** CO emissions are more evident in Petrol engines and long-term exposure to CO can prevent oxygen transfer and increase problems such as headaches/nausea.

◎ **Hydrocarbons (HC):** HC is again more prevalent in Petrol engines and even short-term exposure can cause problems such as headaches, vomiting and disorientation.

◎ **Nitrogen Oxide (NOx):** NOx emissions which are more prevalent in Diesel engines. Their long-term exposure can cause irritation in the nose and eye and can also damage lung tissue.

◎ **Particulate matter (PM):** PM is again more prevalent in a Diesel engine and their long-term exposure can harm the respiratory tract and reduce lung function.

◎ **Sulphur:** At present, the sulphur content in BS-IV petrol and diesel is 50 parts per million (ppm). BS VI-grade fuels, however, are to have a sulphur content of 10ppm. The lower the sulphur content in the fuel, the cleaner it burns.

What's the need to move SC?

◎ The move was taken after some state governments issued circulars directing that no applications for registration of BS-IV vehicles would be accepted

on or after a certain date.

◎ According to SIAM, the cut-off dates ranges from February 29 to March 25, from state to state, though BS-VI emission compliance is mandated from April 1, 2020.

◎ These circulars have put the customers, dealers and vehicle manufacturers in severe discomfort, as each of them is racing against time to exhaust the BS-IV stocks which are with the dealers.

◎ The Supreme Court has directed that no BS-IV vehicle will be sold or registered from April 1.

Significance of the move:

◎ **OBD:** OBD will help in monitoring the pollution levels.

◎ **Real Driving Emission (RDE):** RDE will be introduced for the first time to measure the emissions in real-world conditions.

◎ **Reduction in emissions:** With BS VI norms, Nitrogen oxide emission will come down by 25 percent for the petrol engine and 70 percent for the diesel engine. PM emission will also decrease by 80 percent in diesel engines.

◎ **Regulation of PM:** BS VI norms will change the way particulate matter is measured. It will measure PM by number standards instead of mass standards thereby, regulating the fine particulate matter as well.

◎ **Low Sulphur levels:** BS VI norms have less Sulphur than BS IV, which is a significant cause of air pollution in cities.

◎ **Improving the global environment:** It will bring much-needed changes in the Indian automobile industry in terms of pollutant emissions and with this, India will come at par with the United States, European countries and other advanced automotive markets in the world.

Conclusion:

With the rollout of BSVI fuels across the country, several older vehicles, which would be compliant to BSIV, BSIII, or BSII norms, will have to run on cleaner fuel. The sulphur content in BSVI fuels is much lower than that of BSIV fuels. Hence, improved fuel will only lead to lower pollution. Talking about the BSVI fuel effect on BSIV cars, the latter could require some fine-tuning in the long run, but there is nothing that the car owners should be worried about. Sulphur works as a lubricant for the injectors of diesel engines, so, the low sulphur content might lead to higher wear and tear in the long run. However, the engines can

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FORMER CJI'S RAJYA SABHA NOMINATION TRIGGERS PLEA IN SUPREME COURT'

CONTEXT

- A petition filed in the Supreme Court conveyed the "widespread disquiet and unease" triggered by the nomination of the former chief justice of India Ranjan Gogoi to the Rajya Sabha and sought the court's intervention for extending the post-retirement restrictions imposed on the office of the Lokpal to former judges as well.

⦿ BACKGROUND:

- The petition filed by academic Madhu Purnima Kishwar contended that former judges should be insulated from "post-retirement allurements" like the Lokpal, as the country otherwise risked having public faith in an independent judiciary dry up.

- The petitioner also noted how unlike in the case of the Comptroller and Auditor-General and Chairman and Members of the Union and State Public Service Commissions, the framers of the Constitution did not make any explicit provisions restricting the post retirement acceptance of public offices by the judges of the Supreme Court and high courts as "they (former judges) were expected to conduct themselves in such a manner even after their retirement so as not to create an adverse impression about the independence of judiciary".

- Justice Gogoi's acceptance of the nomination was "befuddling" as he had "himself pronounced that there is a valid strong viewpoint that post-retirement appointment is itself a scar on judicial independence of the judiciary".

- Justice Gogoi was one of the four apex court judges who had held the January 12, 2018, press conference demanding that the **independence of judiciary from the executive be safeguarded.**

Knowing Constitutional Provisions:

- There is no law or constitutional provision that prohibits such a nomination. Nor is this an unprecedented decision by the government.

- Still, it is not a common practice that a government nominates or appoints a former Supreme Court judge or even a high court judge to some office within months of her or his retirement.

- But there is a recommendation of the **Law Commission of India** that considered the question of such nominations and appointments before forming a negative opinion.

- It was the **14th report of the Law Commission of India,** and was made in 1958 when Pandit Jawaharlal Nehru was the prime minister of the country.

- In paragraph 28 of the report, the Law Commission says, "we have noticed the only bar imposed on a Judge of the Supreme Court who has retired is that he shall not thereafter plead or act in any Court or before any authority.

- In the result some Supreme Court Judges have, after retirement, set up chamber practice while some others have found employment in important positions under the Government. We have grave doubts whether starting chamber practice after retirement is consistent with the dignity of these retired judges and consonant with the high traditions which retired judges observe in other countries."

- **Section 8** of the **Lokpal Act** mandates that a retired chairperson or member of the Lokpal, an anti-corruption ombudsman, would be ineligible for reappointment, not hold diplomatic posts or be made an administrator of a Union Territory, and observe a five-year moratorium from contesting elections.

The formula to elect Rajya Sabha Members:

- The Rajya Sabha or the Upper House of Parliament is modeled after the House of Lords in the United Kingdom.

- The Rajya Sabha currently has 245 members, including 233 elected members and 12 nominated. As per the constitutional limit, the Upper House strength cannot exceed 250.

- Nominated members of the Rajya Sabha are picked by the President of India. These MPs are luminaries from the world of economics, sports, literature, art, social service etc.

- While Lok Sabha members are elected directly by the voters, Rajya Sabha members are elected indirectly by the people, that is, by the MLAs.

- Every Rajya Sabha MP has a tenure of six years and elections to one-third seats are held every two years.

- According to Section 154 of the Representation of the People Act 1951, a member chosen to fill a casual vacancy will serve for the remainder of his predecessor's term of office.

- Members of a state's Legislative Assembly vote in the Rajya Sabha elections in what is called proportional representation with the single transferable vote (STV) system. Each MLA's vote is counted only once.

- In this system, MLAs don't vote for each seat. If that were the case, then only ruling party representatives would make it through. Instead, the MLAs are given a paper with the names of all candidates

- The formula simply is **[(Number of MLAs X 100) / (Vacancies + 1)] + 1.**

Supreme Court retirees & appointments in the government:

- Post-retirement appointment of judges by the government is not new.

- As per a study, Supreme Court retirees between 2002 to 2012, over 70 percent of retired Supreme Court judges got appointments by the government.

Why Ranjan Gogoi's appointment is an issue

- Ranjan Gogoi's tenure as the Chief Justice of India was perhaps one of the most fractious tenures that one has seen.

- This is primarily because of two incidents:

- the sexual harassment allegations against him during which his conduct was far from exemplary, particularly for being on the bench in his own cause

- his supervision of the NRC in Assam where he was more executive-minded than the executive.

- Very few Chief Justices have done as much to belittle the cause of judicial independence and fairness as Gogoi.

- With this appointment, no pretence remains either on the side of the government or the judiciary that judicial independence needs to be seen to be protected.

- Any government would know that the appointment of this nature would damage the perception of judicial independence.

- Any judge would know that his or her acceptance of such a post would corrode the moral fabric of the judiciary even further.

- But it's clear—homilies aside, neither really care about an independent judiciary.

- The technical criteria for nomination of MPs to the Rajya Sabha by the President is special knowledge or practical experience in literature, art, science or social service.

- Are there some qualities of Gogoi's that we are unaware of that makes him eligible?

- Gogoi became a judge in the Gauhati High Court in 2001 before being transferred to the Punjab and Haryana High Court in 2010.

- He was appointed Chief Justice of Punjab and Haryana High Court in 2011 before being elevated to the Supreme Court on April 23, 2012.

- He was appointed the 46th Chief Justice of India on October 3, 2018.

- Justice Ranjan Gogoi headed the benches of the Supreme Court that decided politically volatile cases such as the Rafale deal and the Ayodhya title dispute.

◉ CONCLUSION:

For an institution like the Supreme Court, what matters the most is its independence as well as the perception of independence. This requires a high standard of conduct and a certain level of restraint from judges in order to maintain public confidence in the judiciary.

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HERD IMMUNITY

CONTEXT

- While countries around the world began to lock down workplaces, schools, and public gatherings in response to the rapidly spreading coronavirus, the United Kingdom's initial strategy 'Herd Community'sent many into an uproar.

◉ BACKGROUND:

- Questions have been raised about a phenomenon known as "herd immunity" and whether it might play a role in how the COVID -19 pandemic progresses.

- UK's Government Science community hinted at a strategy that would allow the novel corona virus to infect 60% of the country's population so that a degree of "Herd immunity" could be achieved.

- Following widespread criticism, and with Imperial College London projecting a dire scenario if the pandemic remains uncontrolled, the UK has now retracted — and is looking at self -isolation for the elderly.

◉ ANALYSIS:

What is Herd Immunity?

- Herd immunity refers to preventing an infectious disease from spreading by immunising a certain percentage of the population. While the concept is most commonly used in the context of vaccination, herd community can also be achieved after enough people have become immune after being infected.

- The premise is that if a certain percentage of the population is immune, members of that group can no longer infect another person. This breaks the chain of infection through the community ("herd"), and prevents it from reaching those who are the most vulnerable.

How does Herd Immunity work?

- The scientific principle is that the presence of a large number of immune persons in the community, who will interrupt the transmission, provides indirect protection to those who are not immune.

- To estimate the extent of spread and immunity, epidemiologists use a measure called the 'basic reproductive number' (R0). This indicates how many persons will be infected when exposed to an single case; an R0 of more than 1 indicates one person can spread the infection to multiple persons.

- Scientific evidence shows that a person with measles can infect around 12-18 persons; and a person with influenza can infect around 1.2-4.5 persons, depending on the season. On the basis of the available evidence from China, and according to various experts, R0 COVID-19 range between 2 and 3.

- There are three ways in which an infection can spread in a community.

- The first scenario looks at a community that is not immunised. When two infectious cases, both with an R0 value of 1, are introduced, there is a possibility of the entire community being infected, with a few exceptions.

- In the second scenario, there may be some persons who have been immunised; and only these immunised persons will not be infected when at least two infectious cases are introduced in the community.

- The third scenario is when the majority of the community is immunised. So, when two infectious cases are introduced, the spread can take place only in exceptional cases, like in the elderly or other vulnerable persons. Even in such a situation, the immunised persons protect the non-immunised by acting as a barrier — which is herd immunity.

When do we achieve Herd Immunity?

- It depends on multiple factors: how effective the vaccine for a given disease is, how long-lasting immunity is from both vaccination and infection, and which populations form critical links in transmission of the disease.

- Mathematically, it is defined on the basis of a number called "herd immunity threshold", which is the number of immune individuals above which a disease may no longer circulate.

- The higher the R0, the higher the percentage of the population that has to be immunised to achieve herd immunity.

- Polio has a threshold of 80% to 85%, while measles has 95%. With the current data for COVID-19, experts have estimated a threshold of over 60%. That means more than 60% of the population needs to develop immunity to reach the stage of herd immunity.

Why is herd immunity not safe against COVID-19?

- It is very risky to seek herd immunity by allowing a large proportion of the population to get infected. Such a strategy at this stage, experts have underlined, would be based on many unknowns and variables.

- To begin with, much about the behaviour of the pathogen is still unclear. There isn't enough statistically significant data to estimate conclusively how many persons can get the virus from a single infected person.

- Second, it can take months, or even longer, to build group immunity to COVID-19. During that time, the need is to protect people who are at greater risk; the numbers so far indicate that people above 55, especially those with co-morbidities like cardiovascular disease and hypertension, are the most vulnerable.

- Third, while herd immunity may come about from a pandemic because the people who survive may develop immunity — they also may not — it is important to note that for COVID-19, we still don't know whether one can become immune to the virus. Nor is it clear whether a person who develops immunity will remain permanently immune.

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KARNTAKA GOVERNMENT SEEKS QUOTA FOR LOCALS

CONTEXT

- The State government of Karnataka has reiterated its stance on 80 percent reservation in jobs for locals (Kannadigas) in private firms.

⊙ BACKGROUND:

- ◎ Reservation as we know has proved to be detrimental to the progress of India. While any sort of reservation was initially meant to uplift the backward and marginalised classed in the country.

- ◎ Now, increasingly states are seeking lion's share.

- ◎ The Constitution of India does not provide for reservation in private sector, the Karnataka government seeks to overlook that and amend its Karnataka Industrial Employment (Standing Orders) Rules of 1961 to justify their means.

- ◎ Reservation for Kannadigas in the IT sector is a key area where the government wants to intervene.

- ◎ Karnataka's reservation bill is similar to what neighboring Andhra Pradesh implemented last July.

- ◎ While countries introducing job quotas for their citizens in times of economic distress and rising unemployment to keep migrants away is common — Saudi Arabia, Oman, Qatar and Switzerland being recent examples — states within a country doing so is not as prevalent.

- ◎ The states in support of such a policy provides an argument that it is the state's responsibility to fulfill aspirations of its people, also since the state is providing incentives, the industries should not have any problem in following its directions.

⊙ ANALYSIS:

Who are Kannadigas?

- ◎ The state government has not stated who will be considered a Kannadiga.

- ◎ But it is likely that only those who have lived in Karnataka for at least 15 years and can speak, read and write Kannada reasonably well will qualify as Kannadigas.

- ◎ This definition was used by the committee headed by former union minister **Sarojini Mahishi**.

- ◎ The committee, which submitted its report in 1986, recommended a slew of quotas for Kannadigas, including 65-100% in state and central government departments and public sector units, and all jobs in the private sector except in senior and skilled positions.

- ◎ At one point of time, close to 27 percent of Bengaluru's population comprised Kannadigas, now it has dropped to nearly 21 percent.

- ◎ It also indicates that there is a drop in the number of Kannadigas getting jobs.

- A committee under Sarojini Mahishi (now the leader of the Janata Party) was appointed to look into the matter of reservation in the state of Karnataka in 1983.

- It submitted its report which sought reservation for Kannadigas in central government department for 'Group C' and 'Group D' jobs.

What is 'Locals First' Policy?

- ◎ The 'locals first' policy implies that jobs that will be created in a state will be first offered to only people who belong to that state i.e., local people.

- ◎ This policy is becoming popular due to unemployment and fear of some locals who believe that their jobs are being taken away from them and provided to the people not belonging to the state.

- ◎ However, it has been seen that such laws remain in the statute books and are not enforced.

Assessing the case for nativism:

- ◎ Nativism, the cry for job protection of locals, is rearing its head again in India.

- ◎ In 2019, the newly elected government of Andhra Pradesh passed the Andhra Pradesh Employment of Local Candidates in the Industries/Factories Bill, 2019.

  - ➤ As per this law, 75% of jobs in industries are to be reserved for locals.

- ◎ Madhya Pradesh is mulling over a similar law. Goa and Odisha may be next in line. Maharashtra and Assam have seen similar nativist agitations for decades in varying intensities.

- The 2011 census shows that state-level job reservation for native residents is unnecessary and driven by politics.

- The calls for nativism should also be seen against the backdrop of the economic slowdown. The best way to grow out of nativism is to ensure economic recovery.

How is it linked to migration?

- The new insight the census offers is a decisive directional shift in India's migration story—with the Hindi heartland exodus no longer directed at just the economic hubs along the western coast, but also along a newly emerging north-to-south corridor.

- More Indians are also moving across state lines in search of better educational opportunities. But despite these newly emerging trails, in a majority of India's districts, less than one in 10 (or less than 10%) of the urban workforce is an interstate migrant.

- In Madhya Pradesh, where there are calls for a quota for locals, that share is 5%.

Indian Constitution & Migration:

- The Constitution of India guarantees 'freedom of movement' and consequently employment within India through several provisions.

- Article 19 ensures that citizens can "move freely throughout the territory of India".

- Article 16 guarantees no birthplace-based discrimination in public employment.

- Article 15 guards against discrimination based on place of birth and Article 14 provides for equality before law irrespective of place of birth.

  - Some of these Articles were invoked in a landmark 2014 case—Charu Khurana vs. Union of India—when a trade union had declined membership to a make-up artist because she had not lived in Maharashtra for at least five years, as per the union's rules. The trade union lost the case.

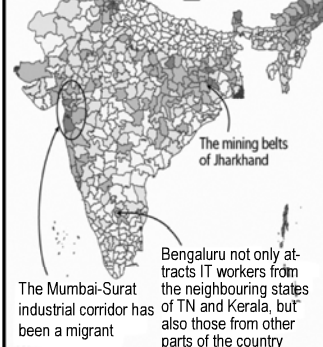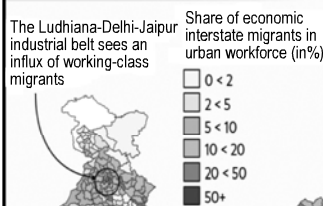## How migration affect employment opportunities for locals?

- The numbers on interstate migration should also influence the debate on 'job protection for locals'.

- Census figures on absolute magnitudes of interstate migration are usually underestimates since they do not capture short-term and circular migration very well, but inferences can still be gleaned from growth rates and comparative percentages.

➤ As per the census, the stock of interstate migrants grew from 41 million in 2001 to 54 million in 2011, but the share in total population remained roughly the same at around 4%.

➤ Migration flows in the decade before the census rose from 20 million (1991-2001) to 26 million (2001-2011).

➤ Between 1991 and 2011, the share of interstate migration in overall internal migration also remained roughly constant at around 12% (19% for males and 10% for females).

➤ While migration rates surged between 2001 and 2011, the bulk of this surge came from migration within states rather than interstate migration.

➤ Between 2001 and 2011, the total number of interstate migrants who moved for economic reasons, in particular, rose marginally from 11.6 million to 13 million.

➤ Their share in the urban workforce hovered at only 8%, with substantial regional variation.

➤ In only 26 out of 640 districts did the figure exceed 25% and none of those districts were in Madhya Pradesh or Andhra Pradesh.

➤ **Female interstate migration:** Much of the interstate migration for women occurs as reciprocal flows in districts along state boundaries as marriage is a primary reason

HOW INDIA MOVES ACROSS STATE LINES

Chart 1: In only 26 of India's 640 districts does the share of migrants in the urban workforce exceed 25%.

8% of India's urban workforce is made up of interstate migrants

The Ludhiana-Delhi-Jaipur industrial belt sees an influx of working-class migrants

Share of economic interstate migrants in urban workforce (in%)
- ☐ 0 < 2
- ☐ 2 < 5
- ☐ 5 < 10
- ☐ 10 < 20
- ☐ 20 < 50
- ■ 50+

The mining belts of Jharkhand

The Mumbai-Surat industrial corridor has been a migrant

Bengaluru not only attracts IT workers from the neighbouring states of TN and Kerala, but also those from other parts of the country

Note: Interstate migrants refer only to those who moved for economic reasons
Source: Census 2011

Chart 2: Delhi and Mumbai are still migrant magnets, but a new North-South corridor is emerging

Top 5 origin   Top 5 destinations

Other   Other

3,644,322 Bihar   1,498,554 Karnataka

989,383 Karnataka   4,892,816 Maharashtra

5,912,052 Uttar Pradesh   3,307,992 NCT of Delhi

1,213,861 Maharashtra   1,391,890 Haryana

1,453,683 Rajasthan   2,190,212 Gujarat
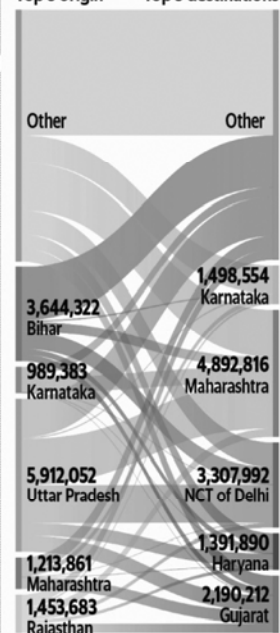
for migration, but the 2011 census shows a sharp pick up in interstate female migration for economic reasons such as employment or business.

➤ **Male interstate migration:** Over half of male interstate migration is for economic reasons but, even there, most interstate migration is confined to neighbouring states—barring large corridors from Uttar Pradesh and Bihar to Maharashtra (mainly Mumbai), Gujarat, and other relatively prosperous regions.

Why local quota is not a good idea?

◉ Job quotas are economic insanity. With GST (goods and services tax), we are trying to make India one national market, but with quotas for locals, we are going the other way.

◉ Having a law which mandates this quota is a violation of Article 14 of the Indian Constitution, which prohibits discrimination on the basis of religion, race, caste, sex or place of birth.

◉ Local reservation in the private sector may not be the ideal solution to tackle the unemployment crisis; in fact, it can deter the corporate sector from investing in states that come up with such a rule.

◉ The idea of reservations for locals also goes against the established fact that migration of labour is good for the economy. Many Indian states, Punjab, Gujarat, and Maharashtra, to name a few, have benefited from migrant labour.

◉ One India, one market. That was the hope when the goods and services tax (GST) was enacted. This idea of local reservation hits the ideal of one unified Indian market.

Suggestive measures:

◉ A better way to engage with the private sector would be to make the youth of a state employable with proper investments in education, health and skill development.

◉ The states may enact reservations in government jobs for scheduled castes, schedules tribes and educationally and socially backward classes, but not for local residents alone. Nor can they reserve jobs in the private sector.

◉ The central government should also take some complementary actions to comprehensively address how to achieve decent work and inclusive growth for all. These include, formalizing the informal economy, fostering accumulation of skills and growth for sustainable enterprises, promoting equal pay for work of equal value and strengthening social protection for workers.

In India, the calls for nativism and their critiques are not new, they tend to occur during periods of economic sluggishness. In the given situation, the only and best way to grow out of nativism is to ensure that the economy is back on track at the earliest.

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WOMEN RIGHT ISSUES

CONTEXT

- The Union Ministry of Corporate Affairs has sought feedback from stakeholders on the draft National Action Plan on Business & Human Rights by March 20, 2020..

⊙ BACKGROUND:

- The fear of a woman's sexuality and reproductive abilities has, throughout history, spurred religious texts and mythological epics.

- Man-made laws find ways to control and dominate a woman's body. In the current context, not only religion but also the society attempts to do the same.

- Vaanavil Research Collective, a grass-root think-tank based out of Dindigul in Tamil Nadu, in February 2020 organised a consultation on 'gender and business'.

- This was a part of the Union Ministry of Corporate Affairs' (MCA) efforts to draft the NAPBHR.

- Workers and supervisors from textile mills discussed solutions to gender-related issues women faced at workplaces.

⊙ ANALYSIS:

Challenges faced by women workers:

- One of the many findings was that the companies provide women with painkillers to deal with menstrual pain. The painkillers cause irregularity in their periods and adversely affect their health. This finding reiterated what a Thomson Reuters Foundation study found a year ago.

- According to workers, a day off every month denies them the wage for that day as well as a higher monthly rate — often; a 'leave-free month' has a higher wage rate than otherwise.

- They also said they want only 'extended rest hours' and unrestricted access to toilets during menstruation, which are not allowed by companies.

- It cited hundreds of sugarcane farm workers being forced to remove their uterus so that they do not lose out on productivity in workspace during menstruation.

- The workers were not only denied paid leave for the hours they do not work but are also fined for their absence by the company citing additional work burden on other workers.

- The frequency of hysterectomies has increased.

- Almost 10 years after a uterus-removal scam was first unearthed in Bihar, there is still no adequate legislative remedy for coercive uterus removal. This indicates complacency in the healthcare system in treating women's health.

- The absence of toilets on farms and greater distance to toilets, because of which women workers refrain from repeated toilet breaks for fear of losing productive time are common feedbacks that women workers across value chains shared.

- At the outset, discussing menstruation in such work contexts is taboo. When it does get discussed, solutions stem from a lens of protection, rather than rights.

- Garment workers who attended the Vaanavil consultations said supervisors dismiss the idea of additional rest hours, saying it would entail a woman worker having to do the 'uncomfortable' task of informing her male supervisors that she is menstruating.

- The management takes refuge in societal factors to not provide solutions instead of coming up with progressive provisions that might also break the taboo.

- Girls living with disabilities, especially those with an intellectual disability, are often convinced or coerced for uterus removal to make their lives and those of their guardians more 'comfortable'.

- The self-assurance with which the society exercises control over the bodies of women in general, and menstruating women in particular, derives from this patriarchal role of protection.

Important Constitutional and Legal Provisions for Women in India

The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The Constitution not only grants equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women.

Constitutional Provisions

The Constitution of India not only grants equality

to women but also empowers the State to adopt measures of positive discrimination in favour of women for neutralizing the cumulative socio economic, education and political disadvantages faced by them. Fundamental Rights, among others, ensure equality before the law and equal protection of law; prohibits discrimination against any citizen on grounds of religion, race, caste, sex or place of birth, and guarantee equality of opportunity to all citizens in matters relating to employment. Articles 14, 15, 15(3), 16, 39(a), 39(b), 39(c) and 42 of the Constitution are of specific importance in this regard.

Constitutional Privileges

- Equality before law for women (Article 14)

- The State not to discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them (Article 15 (i))

- The State to make any special provision in favour of women and children (Article 15 (3))

- Equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State (Article 16)

- The State to direct its policy towards securing for men and women equally the right to an adequate means of livelihood (Article 39(a)); and equal pay for equal work for both men and women (Article39 (d))

- To promote justice, on a basis of equal opportunity and to provide free legal aid by suitable legislation or scheme or in any other way to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities (Article 39 A)

- The State to make provision for securing just and humane conditions of work and for maternity relief (Article 42)

- The State to promote with special care the educational and economic interests of the weaker sections of the people and to protect them from social injustice and all forms of exploitation (Article 46)

- The State to raise the level of nutrition and the standard of living of its people (Article 47)

- To promote harmony and the spirit of common brotherhood amongst all the people of India and to renounce practices derogatory to the dignity of women (Article 51(A) (e))

- Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Panchayat to be reserved for women and such seats to be allotted by rotation to different constituencies in a Panchayat (Article 243 D(3))

- Not less than one- third of the total number of offices of Chairpersons in the Panchayats at each level to be reserved for women (Article 243 D (4))

- Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Municipality to be reserved for women and such seats to be allotted by rotation to different constituencies in a Municipality (Article 243 T (3))

- Reservation of offices of Chairpersons in Municipalities for the Scheduled Castes, the Scheduled Tribes and women in such manner as the legislature of a State may by law provide (Article 243 T (4))

Legal Provisions

To uphold the Constitutional mandate, the State has enacted various legislative measures intended to ensure equal rights, to counter social discrimination and various forms of violence and atrocities and to provide support services especially to working women. Although women may be victims of any of the crimes such as 'Murder', 'Robbery', 'Cheating' etc, the crimes, which are directed specifically against women, are characterized as 'Crime against Women'. These are broadly classified under two categories.

- **The Crimes Identified Under the Indian Penal Code (IPC)**

  ➤ Rape (Sec. 376 IPC)

  ➤ Kidnapping & Abduction for different purposes (Sec. 363-373)

  ➤ Homicide for Dowry, Dowry Deaths or their attempts (Sec. 302/304-B IPC)

  ➤ Torture, both mental and physical (Sec. 498-A IPC)

  ➤ Molestation (Sec. 354 IPC) (vi) Sexual Harassment (Sec. 509 IPC)

  ➤ Importation of girls (up to 21 years of age)

- The Crimes identified under the Special Laws (SLL) Although all laws are not gender specific, the provisions of law affecting women significantly have been reviewed periodically and amendments carried out to keep pace with the emerging requirements. Some acts which have special provisions to safeguard women and their interests are:

  ➤ The Employees State Insurance Act, 1948

  ➤ The Plantation Labour Act, 1951

  ➤ The Family Courts Act, 1954

  ➤ The Special Marriage Act, 1954

➤ The Hindu Marriage Act, 1955

➤ The Hindu Succession Act, 1956 with amendment in 2005

➤ Immoral Traffic (Prevention) Act, 1956

➤ The Maternity Benefit Act, 1961 (Amended in 1995)

➤ Dowry Prohibition Act, 1961

➤ The Medical Termination of Pregnancy Act, 1971

➤ The Contract Labour (Regulation and Abolition) Act, 1976

➤ The Equal Remuneration Act, 1976

➤ The Prohibition of Child Marriage Act, 2006

➤ The Criminal Law (Amendment) Act, 1983

➤ The Factories (Amendment) Act, 1986

➤ Indecent Representation of Women (Prohibition) Act, 1986

➤ Commission of Sati (Prevention) Act, 1987

➤ The Protection of Women from Domestic Violence Act, 2005

Special Initiatives for Women

◉ **National Commission for Women:** In January 1992, the Government set-up this statutory body with a specific mandate to study and monitor all matters relating to the constitutional and legal safeguards provided for women, review the existing legislation to suggest amendments wherever necessary, etc.

◉ **Reservation for Women in Local Self -Government:** The 73rd Constitutional Amendment Acts passed in 1992 by Parliament ensure one-third of the total seats for women in all elected offices in local bodies whether in rural areas or urban areas.

◉ **The National Plan of Action for the Girl Child (1991-2000)**: The plan of Action is to ensure survival, protection and development of the girl child with the ultimate objective of building up a better future for the girl child.

◉ **National Policy for the Empowerment of Women, 2001:** The Department of Women & Child Development in the Ministry of Human Resource Development has prepared a "National Policy for the Empowerment of Women" in the year 2001. The goal of this policy is to bring about the advancement, development and empowerment of women.

◉ WAY FORWARD

◉ The Government should intervene and break the strand of patriachary by acknowledging and providing due solutions to the problems faced by women in their respective working space.

◉ The creation of National Action Plan on Business and Human Rights (NAPBHR) should include major Human Rights Issues and the execution should be done is in a progressive manner.

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SECTION: B
(PRELIMS)

CURRENT AFFAIRS

CENTRAL SANSKRIT UNIVERSITIES BILL, 2020

⊙ **CONTEXT**
- **The Central Sanskrit Universities Bill, 2020 has been passed by the Parliament after it was passed by Rajya Sabha.**

⊙ **ABOUT:**
- This bill will convert the following into Central Sanskrit Universities:
  - Rashtriya Sanskrit Sansthan, New Delhi
  - Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeeth, New Delhi
  - Rashtriya Sanskrit Vidyapeeth, Tirupati

- These 3 universities will have more opportunities to spread the knowledge of Sanskrit language not only in India but also across the world in a better way.

- **The Universities will:**
  - disseminate and advance knowledge for the promotion of Sanskrit
  - make special provisions for integrated courses in humanities, social sciences, and science
  - train manpower for the overall development and preservation of Sanskrit and allied subjects.

Sanskrit, the classical language of India:
- Sanskrit is the classical language of Indian and the liturgical language of Hinduism, Buddhism, and Jainism.
- It is also one of the 22 official languages of India.
- The name Sanskrit means "refined", "consecrated" and "sanctified".
- The word "Sanskrit" means "refined, decorated" or "produced in perfect form". It is known for its clarity and beauty.
- Sanskrit is the classical language of Hinduism, the oldest and the most systematic language in the world.
- In the recent times, major Western countries are increasingly showing interests in learning Sanskrit and exploring the wide variety of knowledge it offers.
- In this context, creating central Sanskrit Universities is one major and significant step that India has taken to assert its leading position.

Functions of the Universities:
- Key powers and functions of the University include:
  - prescribing courses of study and conducting training programmes
  - granting degrees, diplomas, and certificates
  - providing facilities through a distance education system
  - conferring autonomous status on a college or an institution
  - provide instructions for education in Sanskrit and allied subjects

Significance of the Bill:
- This is one of the landmark Bills passed by the Parliament which has fulfilled the aspirations and long standing wish of many sanskrit lovers, scholars and Sanskrit speaking people in the country.

- The Central University status awarded to these 3 Universities will enhance the status of these Universities and will give boost to Post Graduate, Doctoral and Post-doctoral education and Research in the field of Sanskrit and Shastraic education.

- This will pave way for many people from abroad to learn Sanskrit and Shastraic lore from these prestigious Central Sanskrit Universities in our country.

Therefore creation of Central Sanskrit Universities will boost further research in Sanskrit with the deep route that may lead to many useful insights and offer solutions to some of the modern-day problems.

KRISHNA RAJA SAGAR(KRS) DAM

⊙ **CONTEXT**

- **The water level in the Krishna Raja Sagar(KRS) Dam in Karnataka is coming down because of increase in the evaporation rate and the decrease in the inflows due to summer.**

⊙ **ABOUT:**

- The Krishna Raja Sagar Dam (KRS Dam) was built across river Kaveri, the life giving river for the Mysore and Mandya districts, in 1924.

- Apart from being the main source of water for irrigation in the most fertile Mysore and Mandya, the reservoir is the main source of drinking water for all of Mysore city and almost the whole of Bangalore city, the capital of the state of Karnataka.

- The water released from this dam is further used as an important source of water in the state of Tamil Nadu, which has its own Mettur dam in the Salem district.

- The dam is named for the then ruler of the Mysore Kingdom, Krishnaraja Wodeyar IV.

- The Chief Engineer, Sir M. Vishveswaraya engineered the construction of the dam during the Wadeyar kings regime in 1932.

Kaveri River:

- The Kaveri, also spelt as Cauvery in its anglicized form, is an ancient river that arises from a gurgling spring at Brahmagiri hills in Kodagu district in Karnataka.

- This highly-revered river flows through Karnataka, Tamil Nadu and the Union Territory of Puducherry.

- It is considered as the holiest river in southern India and is sometimes referred to as the 'Ganges of the South'.

- There are a number of dams built along the meandering path of this river with the popular ones being the KRS (Krishna Raja Sagar) dam, Amaravathi dam, Mettur dam, Upper Anicut and the Kallanai dam.

- The Kaveri is the third longest rivers in south India after the Godavari and Krishna. It forms three islands along its path where it has split, with the first two islands being at Shivanasamudra and another one near Mysore, forming the island of Srirangapatnam in Karnataka state.

- The third island is in Tamil Nadu where the Kaveri River splits into two at Tiruchirappalli city, forming the island of Srirangam.

Water crisis & the case of India:

- The country is suffering from "the worst water crisis in its history" from the past few years, placing millions of lives and livelihoods under threat.

- The groundwater level has been going down in almost all parts of the country.

- Every year (from April to July every year), the water situation in at least eight states has been grim.

- With almost all of the country depending on monsoon rain for agriculture and domestic purpose, there is a desperate need for water management on a war footing.

In the given situation, it is important that the impending water crisis is acknowledged at the policy level and urgent efforts made to estimate the true extent of this crisis and cope with this situation at the earliest.

CLIMATE CHANGE & CARBON SEQUESTRATION

⊙ **CONTEXT:**

- **A recent report by the Institute for Applied Systems Analysis (IAASA) published in journal** *Scientific Reports* **attempts to shed light on ecosystem processes crucial to carbon sequestration and its impact on ecosystems functioning.**

⊙ **ABOUT:**

- Carbon dioxide is the most commonly produced greenhouse gas. Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide.

- It is one method of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change.

How trees fight against climate change

- Trees have an iconic status in the fight against climate change and in the environmental movement in general.

- The question is how much carbon can forests suck up? What is the mitigation potential of forests?

- In 2019's special report on climate change and land, the **Intergovernmental Panel on Climate Change (IPCC)** estimated that the mitigation potential from reducing deforestation and land degradation — while highly uncertain — was at best about a sixth of annual energy sector emissions alone.

- The IPPC further concluded that forests "do not continue to sequester carbon indefinitely", noting that any sequestration gains are "at risk from future loss (or sink reversal) triggered by disturbances such as flood, drought, fire, or pest outbreaks, or future poor management."

- The world has seen a spectacular example of these risks in Brazil and Australia in recent months.

- Evidence of the uncertainty of estimates of carbon stored in forests is mounting.

- A study last year by the University of Queensland found greenhouse gas emissions from damage to tropical rainforests are being underestimated by a factor of six.

- Even more worryingly, a study by the University of Leeds concluded that tropical forests were losing their ability to sequester carbon and may soon become net emitters, rather than net sinks.

- How will climate change itself impact tropical forests and the carbon stored in them?

- Traditional large-scale projections are limited, as remote sensing techniques integrate over large areas and ignore spatial heterogeneity.

- Hence, they fail to accurately represent ecosystem processes crucial to carbon sequestration.

Key-findings of the study:

- The report includes carbon sequestration by focussing on fifteen undisturbed, lowland tropical forests located at the **Pacific slope of southwestern Costa Rica.**

- It is often emphasised that diverse forests store more carbon. The new study, however, confirms previous findings that this approaches a plateau in tropical forest with high species diversity, though species diversity may be crucial for other environmental reasons.

- The actual composition of the mix of species was found equally important.

- Species diversity and species composition are governed by climatic factors — affecting not just temperatures but also water availability — and soil type.

- Soils may themselves evolve with climate change as a result of weathering due to rainfall patterns.

- The study found ecosystem functioning was affected not just by biological diversity but also by a diversity of abiotic factors, which the paper terms geodiversity.

- The study found that plant species diversity was indirectly controlled by climatic factors through their effect on water availability.

- Plant species richness decreased with mean annual temperature and more so with increasing temperature variation.

- Carbon storage in vegetation increased mean wood density and soil phosphorus content, but decreased with increasing climatic water deficit.

- A decrease in forest carbon sinks could further contribute to climate change which in turn could further decrease carbon sinks and so on.

How does carbon dioxide get into atmosphere

- Atmospheric carbon dioxide comes from two primary sources:
  - Natural
  - human activities

- Natural sources of carbon dioxide include most animals, which exhale carbon dioxide as a waste product.

- Human activities that lead to carbon dioxide emissions come primarily from energy production, including burning coal, oil, or natural gas.

Significance of the report findings:

- The findings are sobering for the prospects of mitigating climate change, given they indicate ecosystem functioning including carbon sequestration could be more adversely affected by climate change than previously thought.

ESSENTIAL COMMODITIES ACT

⊙ **CONTEXT:**

- **The government declared face masks and hand sanitisers as essential commodities for the next 100 days as it stepped up efforts to boost supply and prevent hoarding of these items in its fight to check the spread of coronavirus.**

⊙ **ABOUT:**

- The Essential Commodities Act provides, "in the interest of the general public, for the control of the production, supply and distribution of, and trade and commerce, in certain commodities".

- The law, which was passed in 1955 to essentially protect consumers from unreasonable and exploitative increase in prices of commodities in times of shortage, has been amended several times over the years, and made more stringent.

- Under the Act, the government can also fix the maximum retail price (MRP) of any packaged product that it declared as "essential commodity".

What products are generally classified as essential commodities?

- The Act defines an "essential commodity" as simply "a commodity specified in the Schedule".

- The Act empowers the central government to add new commodities to the list of Essential Commodities as and when the need arises, and to remove them from the list once the crisis is over or the situation improves.

- Over the years, a long list of items have been designated as essential commodities, including various drugs, fertilisers, cereals, pulses, sugar, edible oils, petroleum and petroleum products, and certain crops.

The decision:

- Both masks (2-ply and 3-ply surgical masks, N95 masks) and hand sanitisers have been brought under the Essential Commodities Act, 1955.

- It will empower states and Union Territories to regulate production, distribution and prices of these items and also crack down on hoarding and black-marketing.

- It also empowers to carry out operations against speculators and those involved in over-pricing and black-marketing.

The need:

- The coronavirus pandemic has triggered panic buying of masks and hand sanitisers at many places around the world, including in India.

- In view of the ongoing outbreak of COVID-19, masks and hand sanitisers are either not available in the market or are available with great difficulty at exorbitant prices.

- Due to this, the government took this step. It has also issued an advisory under the Legal Metrology Act.

- The purpose of designating any commodity as "essential" is to prevent profiteering at a time of extraordinary demand.

- This decision will enhance the availability of both the items to the general people at reasonable prices or at MRP (maximum retail price).

Masks and hand sanitisers are 'essential' to combat the novel coronavirus?

- It is important to note that the designation of masks and hand sanitisers as "essential commodities" does not mean that the government considers them to be 'essential', in the literal sense, in the fight against COVID-19.

- Doctors and health experts have underlined that the use of masks is helpful only if one have symptoms, or if he/she is caring for someone who has symptoms.

- The infection is spreading mostly through infected surfaces — and masks, especially the cheap surgical ones, cannot actually block the virus out.

- Similarly, washing your hands thoroughly — for at least 20 seconds — with soap and (preferably warm) water is more effective than hand sanitisers.

- If one uses a hand sanitiser, ensure that is alcohol-based, with at least 60% alcohol content.

- So-called "herbal" hand sanitisers are not useful.

MINERAL LAWS (AMENDMENT) BILL

◉ **CONTEXT:**

- **The Indian parliament has passed Mineral laws (Amendment) Bill, 2020 that will open the coal sector fully for commercial mining for all domestic and international mining companies.**

⊙ **ABOUT:**

- In India, mining is a major economic activity and accounts for more than 2% of the country's gross value added (GVA).

- The sector provides the basic raw materials required by several manufacturing and infrastructure industries in the country.

- India is home to 1,531 operating mines and produces 95 minerals, including:

  ◎ 4 fuel-related minerals

  ◎ 10 metallic minerals

  ◎ 23 non-metallic minerals

  ◎ 3 atomic minerals

  ◎ 55 minor minerals (including building and other minerals)

- Globally, India is ranked as one of the leading producers of valuable minerals such as chromite, iron ore, coal and bauxite.

- The mining sector in India is highly regulated and the legal framework has undergone significant changes in the past three years, the result of which is a more transparent and efficient regime.

Key-highlights of the Bill:

- The Bill amends the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) and the Coal Mines (Special Provisions) Act, 2015 (CMSP Act).

- The latest 'Mineral laws (Amendment) Bill' replaces the 'Mineral Laws (Amendment) Ordinance, 2020'.

- The amended provisions clearly provide that companies which do not possess any prior coal mining experience in India and/or have mining experience in other minerals or in other countries can participate in the auction of coal/lignite blocks.

- This will not only increase participation in coal/lignite block auctions, but also facilitate the implementation of FDI policy in the coal sector," the statement said.

- Now, the companies that are not 'engaged in specified end-use' can also participate in the auctions of Schedule II and III coal mines.

- The removal of the end-use restriction would allow wider participation in coal mine auctions for a variety of purposes such as own consumption, sale or for any other purpose, as may be specified by the Centre

- The Bill also removed the current end-use restrictions, thereby allowing for wider participation and competition in auction.

- The bill also allows prospecting licence-cum-mining lease (PL-cum-ML) for coal/lignite which increases availability of coal and lignite blocks, and coal blocks of varying grades in a wide geographical distribution will be available for allocation.

Significance of the Bill:

- The legislation is likely to bring a 'sea change' in the coal mining sector and noted that the focus should be on exploring reserves without harming the environment.

- The bill will open up the coal sector for commercial mining and allow domestic as well as global companies to invest.

WORK IN UNISON AND NOT IN DIVISION: MADRAS HIGH COURT TELLS LG & CM

⊙ **CONTEXT:**

- **Madras High Court counselled Puducherry Chief Minister and Lieutenant Governor to "work in unison and not in the division" while setting aside a single bench's order that the L-G cannot "interfere in the day to day affairs" of the government.**

⊙ **ABOUT:**

- Part VIII of the Constitution of India is concerned with the administration of the Union Territories.

- Administration of Union Territories and Creation of local Legislatures or Council of Ministers or both for certain Union Territories are defined under Article 239 and 239A of Constitution of India 1949.

- With the inclusion of Jammu & Kashmir and Ladakh, there are now 28 States and 8 Union Territories in the country.

- Union Territory is an administrative unit controlled and regulated by the Union Government.

- The constitution head of the state is the Governor but the President acts as the executive head for the UT.

- Union Territories are ruled directly by the Central Government has a Lieutenant Governor as an administrator, who is the representative of the President of India and appointed by the Central government.

Lieutenant-Governor:

- Lieutenant-Governor is the head of a Union Territory (UT).

- Under Article 239 of the Indian Constitution, the President of India occupies, in regard to Union Territories, a position analogous to that of a Governor in a State.

- An Administrator is also appointed by the President of India.
  - ⊙ UT under LG: Andaman and Nicobar Islands, Delhi, Puducherry, Jammu and Kashmir and Ladakh
  - ⊙ UT under administrator: Chandigarh, Dadar & Nagar Haveli, Daman & Diu and Lakshadweep

The ruling:

- A division bench of Chief Justice **A P Sahi** and **Justice Subramonium Prasad** set aside the April 30, 2019 ruling by **Justice R Mahadevan** of the Madurai Bench which said Lt Governor and Administrator of the Union Territory, Kiran Bedi, cannot interfere in the day to day affairs of the government.
  - ⊙ Justice Mahadevan in his judgment had held that the Lieutenant Governor has no powers to interfere in the day-to-day affairs of the elected government saying it would defeat the purpose of the people's mandate.

- The court ruled that a government is "a trustee for the little man who should not have a perception that the running of the government is a gigantic conspiracy".

- It held that the role of Puducherry's Lieutenant Governor and that of an elected government in the Union Territory were intertwined as per law, and therefore they were expected to act in unison and not in division.

Impact of the Verdict:

- The view of the learned single judge suffers from a basic fallacy of drawing a parallel on the basis of expected notions of democracy and republicanism vis-a-vis the status of elected legislature of a Union Territory and that of a State.

- This cannot be done by a judicial pronouncement and has to be through a legislative process by the appropriate legislature.

- For the time being, there is no such law that may equate or put them at par.

The verdict is a major victory for Bedi who has been maintaining that the Constitution has given her enough powers to interfere in the functioning of the democratically elected government as Puducherry is a Union Territory and not a full-fledged state.

A POLITICAL BATTLE IN MP & FLOOR TEST

◉ **CONTEXT:**

- **The Supreme Court is slated to hear a plea filed by Shivraj Singh Chouhan, which has sought directions to the Kamal Nath government to undertake a floor test in the state Assembly as directed by Governor Lalji Tandon.**

◉ **ABOUT:**

- A floor test is a constitutional mechanism used to determine if the incumbent government enjoys the support of the legislature.

- A floor test can be explained as a motion initiated by the government in position seeking to know if it enjoys the confidence of the legislature.

- As part of this procedure, the Chief Minister appointed by the governor will be asked to prove majority on the Legislative Assembly floor.

> **What is a composite floor test?**
> - If there is more than one person staking claim to form the government and the majority is not clear, the governor may call for a special session to see who has the majority.
> - Some legislators may be absent or choose not to vote. In such a case, the majority is counted based on those present and voting.

The procedure:

- The whole idea of floor test is incorporated in the Constitution of India to ensure transparency in the constitutional process.

- The voting takes place in the Legislative Assembly or the Lok Sabha at the central level.

- When a floor test is called for in the assembly of a state, the Chief Minister will move a **vote of confidence** and prove that he has the majority support.

  ◎ A confidence motion or a vote of confidence or a trust vote is sought by the government in power on the floor of the House.

  ◎ A trust vote or confidence motion has to be moved by an MLA or an MP, and the objective is to find out whether the chief minister has the 'trust' or 'confidence' of the House.

- If the floor test fails, the CM needs to give his/her resignation.

Modes of Voting:

- These are the modes by which voting can be conducted:

  ◎ **Voice vote:** In a voice vote, the legislators respond orally.

  ◎ **Division vote:** In case of a division vote, voting is done using electronic gadgets, slips or in a ballot box.

  ◎ **Ballot vote:** Ballot box is usually a secret vote - just like how people vote during state or parliamentary elections.

The plea:

- The plea directs the Speaker, CM and principal secretary of the Assembly to hold a floor test "within 12 hours of the passing of the order by this court and as per directions issued by the Governor".

- The state of Madhya Pradesh plunged into a political crisis after Jyotiraditya Scindia, a senior Congress leader, resigned from the party to join the BJP.

- Scindia's decision to leave the Congress was followed by the resignation of 22 party MLAs loyal to him.

- Madhya Pradesh Governor Lalji Tandon directed Kamal Nath (CM) to seek trust vote after the 22 legislators of the Congress party submitted their resignations last week.

- The BJP claims the Congress, which had 114 MLAs in the House with an effective strength of 228, has been reduced to a minority government following the resignation of 22 of its legislators.

- The opposition party has 107 legislators. There are two MLAs from the Bahujan Samaj Party (BSP), one from the Samajwadi Party (SP), and four Independents who support the Kamal Nath government.

- Speaker NP Prajapati had accepted the resignations of six ministers on Saturday. With this, the strength of the House has come down to 222 and the majority mark is now 112.

- The resignations of 16 other MLAs have not been accepted so far.

APPROPRIATION BILL 2020-21

⊙ **CONTEXT:**

- **The Lok Sabha has passed the Appropriation Bill 2020-21, authorising the government to draw over Rs 110 lakh crore from the Consolidated Fund of India for its working as well as the implementation of its programs and schemes.**

⊙ **ABOUT:**

- Appropriation Bill gives power to the government to withdraw funds from the Consolidated Fund of India for meeting the expenditure during the financial year.

- Post the discussions on Budget proposals and the Voting on Demand for Grants, the government introduces the Appropriation Bill in the Lok Sabha.

- It is intended to give authority to the government to withdraw from the Consolidated Fund, the amounts so voted for meeting the expenditure during the financial year.

Consolidated Fund of India:

- The Consolidated Fund of India includes revenues, which are received by the government through taxes and expenses incurred in the form of borrowings and loans.

- It represents one of the three parts of the Annual Financial Statement with the other two:

  ⊙ the Contingency Fund

  ⊙ Public Account

- All government expenditures are met by consolidated funds except a few made by contingency fund or public fund.

- The Consolidated Fund of India was created under Article 266 of the Constitution. It is also considered as the most important part of the financial statement.

- Similar to the Centre, every state has its own Consolidated Fund as well.

What goes into Consolidated Fund of India?

- All the government revenue generated from taxes, asset sale, earnings from state-run companies, etc go into the **Consolidated Fund of India**.

- The fund gets money from:

  ⊙ Revenue earned in direct taxes such as income tax, corporate tax, etc

  ⊙ Revenue earned in indirect taxes such as GST

⊙ Dividends and profits from PSUs (Public Sector Undertakings)

⊙ Money earned through government's general services

⊙ Disinvestment receipts

The process:

- This completes two-thirds of the exercise for approval of the Budget for 2020-21.

- Lok Sabha and Rajya Sabha had debated on Finance Minister Nirmala Sitharaman's second Budget in the first half of the current session

- In the second part, the lower house of Parliament passed the Appropriation Bill.

- In the third stage, the Finance Bill, which details the tax proposals, will be discussed and approved.

- The house passed the Appropriation Bill, envisaging spending of Rs 110.4 lakh crore during the financial year 2020-21

- With Parliament having very limited time for scrutinising the expenditure demands of all the ministries, it takes up discussion on spending or demands for grants for a few ministries during a pre-decided period of time.

- Once this is over, a guillotine is applied.

- Once the speaker applies the guillotine, all the outstanding demands for grants, whether discussed or not, are put to vote at once and passed.

After this, Appropriation Bill was taken into consideration and passed.

INDIA PROPOSES EMERGENCY COVID-19 FUND FOR SAARC NATIONS

⊙ **CONTEXT:**
- **India pledged $10 million toward a Covid-19 emergency fund and said it was putting together a rapid response team of doctors and specialists for South Asian Association for Regional Cooperation (Saarc) nations as part of an initiative led by Prime Minister Narendra Modi.**

⊙ **ABOUT:**
- The South Asian Association for Regional Cooperation (SAARC) was established with the signing of the SAARC Charter in Dhaka on 8 December 1985.

- It comprises eight Member States: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The Secretariat of the Association was set up in Kathmandu on 17 January 1987.

- The objectives of the Association as outlined in the SAARC Charter are:

  ⊙ to promote the welfare of the peoples of South Asia and to improve their quality of life

  ⊙ to accelerate economic growth, social progress and cultural development in the region and to provide all individuals with the opportunity to live in dignity and to realize their full potentials

  ⊙ to promote and strengthen collective self-reliance among the countries of South Asia; to contribute to mutual trust, understanding and appreciation of one another's problems

  ⊙ to promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields

  ⊙ to strengthen cooperation with other developing countries

⊚   to strengthen cooperation among themselves in international forums on matters of common interests

⊚   to cooperate with international and regional organizations with similar aims and purposes.

Extending helping hand:

- Indian Prime Minister Modi made the announcements during a video-conference with Saarc leaders that he had proposed amid rising cases of the disease in the region.

- The Indian PM suggested that nodal experts of all SAARC states meet in a week's time to take forward the ideas exchanged at the discussion.

- He urged the seven nations to fight the scourge jointly.

- The Indian government has announced various internal measures to combat the outbreak.

- This includes closing 18 of 37 border checkposts to international traffic and suspension of all existing visas - except a few types such as UN and diplomatic - till April 15.

- The government has also advised against non-essential travel abroad; people have been warned of a 14-day quarantine on their return.

- The COVID-19 outbreak began in a market in China's Wuhan district in December last year.
- The World Health Organization has declared the outbreak a pandemic, meaning it has spread worldwide and affected huge number of people.

OPEC+

⊙ **CONTEXT**

- **The collapse of alliance between Saudi Arabia and Russia threatens to plunge the industry into a generation-defining freefall with few precedents in modern history.**

⊙ **ABOUT:**

- OPEC+ refers to the alliance of crude producers, who have been undertaking corrections in supply in the oil markets since 2017.

- Currently, there are 21 sovereign producing nations complying with the alliance's decisions, with Saudi Arabia leading the 11 OPEC members party to the deal and 10 non-OPEC members led by Russia.

Organization of the Petroleum Exporting Countries (OPEC):

- The Organization of the Petroleum Exporting Countries (OPEC) is a group consisting of 14 of the world's major oil-exporting nations.

- OPEC was founded in 1960 to coordinate the petroleum policies of its members and to provide member states with technical and economic aid.

- OPEC is a cartel that aims to manage the supply of oil in an effort to set the price of oil on the world market, in order to avoid fluctuations that might affect the economies of both producing and purchasing countries.

- Countries that belong to OPEC include Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela (the five founders), plus the United Arab Emirates, Libya, Algeria, Nigeria, and five other countries.

Background:

- In 1985, Saudi Arabia, after years of shouldering OPEC production cuts nearly by itself, gave up and launched a price war.

- Prices collapsed almost 70% between November 1985 and May 1986.

- The kingdom crashed the market again in 1997, its patience worn thin by Venezuela's over-pumping. In the next year and a half, prices fell 50%.

- And in 2014, Saudi launched a price war after it failed to convince non-OPEC countries, including Russia, to join in an output cutback. Prices declined 65% over the next six months.

- But none of those previous scenarios took place while demand was going through a brutal contraction, much less one triggered by the worldwide spread of a deadly virus.

The impact:

- The alliance between Saudi Arabia and Russia was the only thing that kept the world oil market from tumbling into the abyss.

- Now its collapse threatens to plunge the industry into a generation-defining freefall with few precedents in modern history.

- The most immediate pain is likely to be felt in the US shale industry, where companies have already been struggling as investors lost enthusiasm for the sector. In part, that's what the Russian energy ministry has been aiming for.

- Still, the hurt is likely to be spread much more widely across the world, from commodity-dependent countries like Angola and Oman, to energy giants like Exxon Mobil Corp and Royal Dutch Shell Plc.

While Russia would not mind to back down and return to the status quo, Saudi Arabia appears determined to continue the confrontation. Their next moves will be determined by their readiness to take on further economic losses and their appetite for escalating tensions.
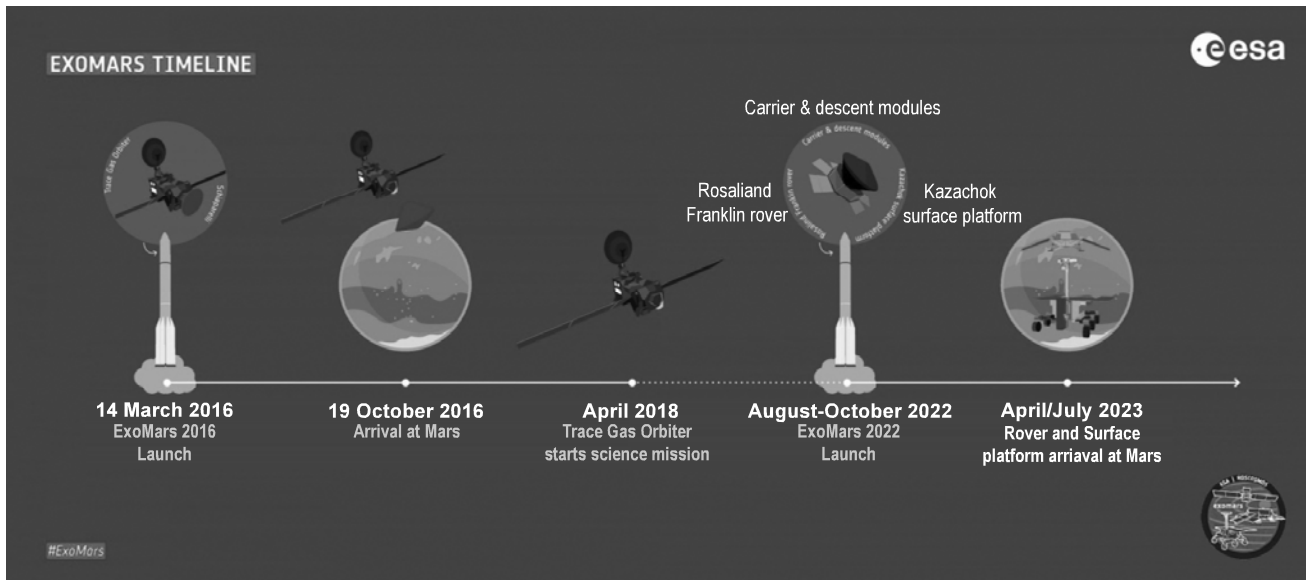
EXOMARS MISSION DELAYED

⊙ **CONTEXT:**

- **The European Space Agency (ESA) announced that its ExoMars Rosalind Franklin rover mission would not fly this year due to technical issues and the logistical impact.**

⊙ **ABOUT:**

- The ExoMars rover is Europe's first Mars rover. Named after Rosalind Franklin, a British pioneer of DNA science, the robotic explorer will search for signs of life on the red planet's surface.

- The ExoMars rover is a follow-on to ESA's ExoMars Orbiter mission, which reached the red planet in 2016.

- That mission consisted of two parts:

  ◎ The Trace Gas Orbiter (TGO)

    ► The orbiter is performing science work and will serve as a communications relay for the second phase of the program — a rover and landing surface platform.

  ◎ The Schiaparelli lander, a technology demonstrator

    ► Unfortunately, the Schiaparelli crash-landed during its descent to the Martian surface.

- The Rosalind Franklin rover is a second ExoMars mission to search for signs of life at depths up to two meters below the martian surface.

- It consists of a Russian-led surface platform and the European-led rover, to be launched on a Russian Proton rocket from Baikonur.

EXOMARS TIMELINE   esa

Carrier & descent modules

Rosaliand
Franklin rover   Kazachok
                            surface platform

14 March 2016   **19 October 2016**   **April 2018**   **August-October 2022**   **April/July 2023**
ExoMars 2016   Arrival at Mars   Trace Gas Orbiter   ExoMars 2022   Rover and Surface
Launch   starts science mission Launch   platform arriaval at Mars

#ExoMars

The delay:

- The launch of the second ExoMars mission, a collaboration with the Russian Space Agency (Roscosmos), was initially planned for July or August of this year.

- However, the launch has been postponed to 2022 due to technical issues and the logistical impact due to the global Conoavirus outbreak.

- The agency needs more time to troubleshoot issues with the spacecraft's parachute system as well as precise electronics, so the delay is necessary.

- Also, the recent coronavirus outbreak that's spreading around the globe isn't helping.

- So instead of rushing, the team is taking the next two years to conduct extensive testing and make sure they get it right.

Why landing on Mars is challenging?

- Landing a spacecraft on Mars is hard. There are a bunch of challenges with Mars, including its lack of a protective magnetosphere and lower surface gravity.

- But one of the biggest is its thin atmosphere of carbon dioxide.

- The planet's atmosphere is thinner than what we see on Earth, and as such its takes a combination of sophisticated tools, including heat shields, retrorockets, and even giant, inflatable airbags, to safely touch down on the surface.

- Historically, missions to Mars are launched from Earth during the flight windows that open up every two year or so when Earth and Mars are close together.

- ExoMars flew in 2016, InSight in 2018 and the Mars 2020 rover will fly in 2020.

- The missions follow interplanetary transfer trajectory designed to either get there the fastest, or with the least amount of fuel.

The ExoMars rover mission was initially scheduled to launch in 2018, but was delayed to 2020 due to delays in European and Russian industrial activities.When the Rosalind Franklin rover arrives at Mars it will join the ExoMars Trace Gas Orbiter, which has been in orbit around the Red Planet since October 2016. TGO will act as a relay station for the mission while continuing its own science mission.

ISRO'S ASSISTANCE IN FINDING RICH FISHING AREAS

⊙ **CONTEXT:**

- **The Indian National Centre for Ocean Information Services (INCOIS), reported that Oceansat Satellite data from Indian Space Research Organization (ISRO) can be used to prepare the Potential Fishing Zone (PFZ) advisories on the potential rich fishing areas and provide to the sea faring fishermen in all states.**

⊙ **ABOUT:**

- The Potential Fishing Zone (PFZ) as a proxy to potential shoals of fish aggregation will benefit the fishing community to reduce the time and effort spent in searching the shoals of fish, thus improving the profitability and hence, the socio-economic status.

- About 7 million people living along the Indian coastline, spanning over 8100 km, are depending on fishing for their livelihood. Locating and catching fish is always a challenging task.

- Often, the search for fish ends up in spending considerable time and resources, thus increasing the cost leading to low profitability.

- A reliable and timely advisory on the potential zones of fish aggregation will benefit the fishing community to reduce the time and effort spent in searching the shoals of fish, thus improving the profitability and hence, the socio-economic status.

What is OCEANSAT

- IRS-P4 (OCEANSAT) is the first satellite primarily built for Ocean applications, weighing 1050 kg placed in a Polar Sun Synchronous orbit of 720 km, launched by PSLV-C2 in 1999.

- Oceansat-2 satellite mainframe systems derive their heritage from previous IRS missions and launched by PSLV-C14 from Satish Dhawan Space Centre in 2009.

- Oceansat-2 is envisaged to provide continuity of operational services of Oceansat-1(IRS-P4) with enhanced application potential.

The methodology:

- ISRO has developed the methodology for the generation of fishery advisories and transfer to INCOIS since 2002 as an operational service for providing PFZ advisories.

- This service utilizes data on **chlorophyll concentration (Chl)** obtained from ISRO's Oceansat-2 satellite and the sea surface temperature from **National Oceanic Atmospheric Administration (NOAA / USA satellites).**

How PFZ advisories can help

- INCOIS has reported that a study conducted by National Council for Applied Economic Research revealed that the emission of carbon in the environment is reduced due to the savings in diesel consumption and reported a carbon credit equivalent to an annuity of Rs. 36,200 crore.

- Another study, conducted the Central Marine Fisheries Research Institute (CMFRI) in Maharashtra during 2013-14, under National Agricultural Innovation Project (NAIP), reported that a fishing village of 32 fishing boats in Maharashtra could save 70,000 litres of diesel in a month as the PFZ advisories helped them in avoiding the unwanted search for fish shoals.

SCIENTIST UNLOCK ENZYME THAT REORGANISES PATERNAL GENOME

⊙ **CONTEXT**
- Scientists have unlocked enzyme 'SPRK1' that reorganises paternal genome during fertilisation. The enzyme makes way for the first step, folding and packaging the sperm so that it fits in the egg.

⊙ **ABOUT:**
- A person's genome is inherited from the parents — during fertilisation, half of the father's genome is mixed with half of the mother's.
- A sperm carries half as much genetic material as a regular cell and needs to be folded and packaged in a way that it fits in the egg.
- It is the enzyme SPRK1 that makes way for this first step, by reorganising paternal genome during the first moments of fertilisation.
- The enzyme does it in a matter of few hours.
- The study, published in journal Cell, was carried out by researchers at University of California San Diego School of Medicine discovered.
- Until now, enzyme SPRK1 was studied for its ability to splice ribonucleic acid (RNA) — an important step that enables translation of genes to proteins.
- But SRPK1 leads a double life, swapping protamines for histones once the sperm meets egg.
- SPRK1 most likely started out playing this role in early embryogenesis, and later evolved the ability to splice RNA. That was how SPRK1 got to do the latter even when it was no longer needed for embryogenesis.

Understanding the science behind it:
- Our standard knowledge of human reproduction is clear: sperm, fertilize the egg, the embryo develops, and finally new baby is born.
- However, scientists did not know exactly the process of how half the genome of sperm from the father and half of the egg from the mother came together.
- Sperm can be up to 20 times smaller than a normal cell in the body. And while sperm carry only half as much genetic material as a regular cell, it needs to be folded and packaged in a special way in order to fit.
- One way nature does this is by replacing histones - proteins around which DNA is wound, like beads on a necklace, with a different type of protein called protamines.

Significance of the discovery:
- The scientists have uncovered a step that might malfunction for some people, and contribute to a couple's difficulty in conceiving. The discovery could help study infertility in certain cases.
- To date, researchers did not really know much about these relatively brief, yet crucial, incipient moments in fertilisation. The discovery simply answers a fundamental question about the beginning of life.

SUPERHYDROPHOBIC COATING TO SAVE STEEL FROM RUSTING

⊙ **CONTEXT**
- **Fascinated by the beauty of water rolling off a lotus leaf, a team of chemical engineers has now created a similar superhydrophobic coating that can be used to save steel from rusting.**

⊙ **ABOUT:**

- A nanoscopic coating whose main function is to protect the surface from the water and repel it is called **superhydrophobic coatings**.

- In recent times, many super hydrophobic surfaces have captured the attention of scientists and they have extended their researches on those surfaces in order to obtain the same material which can be used to repel any type of liquid.

Important features:

- Superhydrophobic coatings have a lot of practical applications where it protects the coated equipment or material from corrosion, contamination prevention and protection from other hazardous chemicals.

- The water repellency of the surface is the important factor to be considered here because a super hydrophobic surface is that surface whose water contact angle is more than 150 degrees.

- There are plenty of super hydrophobic surfaces in nature, including lotus leaves, butterfly wings, duck feathers, etc.

- Inspired by nature, super hydrophobic surfaces can be derived by employing two approaches.

  ◦ In the first approach, the solid surface is chemically enhanced with a low-surface material.

  ◦ In the second approach, nano and micro-scale structures are created on the layer to stop water from completely being in contact with the surface.

The study:

- The team from the Indian Institute of Technology (Indian School of Mines), Dhanbad, and Ohio State University used polyurethane and silicon dioxide nanoparticles to create the coating which can be easily spin-coated on steel.

- The work is published in the journal Philosophical Transactions of the Royal Society A.

How they did it?

- Before applying the coating, the team created a roughness on the steel using a chemical etching process to improve the adhesion strength. Without this, the coating tends to easily peal off due to smoothness of steel.

- The team also tried different methods for the application of the coat on steel and found that spin coating was advantageous and cost-effective compared to immersion coating and spray coating.

- Spin coating dried quickly and the thickness of the coat could be controlled easily.

- The surface of the coating was found to have **superhydrophobic** property.

- The coating was also chemically stable in both acidic (pH 5) and alkaline (pH 8) conditions for more than six weeks. It also exhibited thermal stability up to 230 degree C.

- The mechanical stability of the coating was tested with water jet, floating, bending, sand abrasion tests and was found to be highly stable.

- Not just steel, the coating can be done on other metallic surfaces, such as aluminum, copper, brass.

- The team have also successfully developed superhydrophobic coatings for glass, cloth, paper and wood.

- **Self-cleaning:** Another useful property exhibited by the coating was of **self-cleaning**. When water droplets were made to fall on an uncoated surface they stuck to it and made a messy surface.

  ◦ However, in the case of a coated sample, water droplets roll away while collecting dust from the surface.

MEDICAL TERMINATION OF PREGNANCY

⊙ **CONTEXT**

- **The Lok Sabha has passed the Medical Termination of Pregnancy Bill, to ensure safety and well-being of women.**

⊙ **ABOUT:**

- The Bill amends the **Medical Termination of Pregnancy Act, 1971** which provides for the termination of certain pregnancies by registered medical practitioners.

- **Definition:** The Bill adds the **definition of termination** of pregnancy to mean a procedure undertaken to terminate a pregnancy by using medical or surgical methods.

- Termination of Pregnancy: Under the Act, a pregnancy may be terminated within 12 weeks, if a registered medical practitioner is of the opinion that:

  ◉ continuation of the pregnancy may risk the life of the mother, or cause grave injury to her health

  ◉ there is a substantial risk that the child, if born, would suffer physical or mental abnormalities.

- For termination of a pregnancy between 12 to 20 weeks, two medical practitioners are required to give their opinion.

Abortion and Indian Law:

- The Indian Penal code, drafted in the 19th century, which is still in force, considers abortion a crime.

- This law states that the woman and the person helping, can be imprisoned up to seven years.

- The MTP Act carved out an exception to the provisions.

- The Bill amends this provision to state that a pregnancy may be terminated within 20 weeks, with the opinion of a registered medical practitioner.

- Approval of two registered medical practitioners will be required for termination of pregnancies between 20 to 24 weeks.

- The termination of pregnancies up to 24 weeks will only apply to specific categories of women, as may be prescribed by the central government.

- Further, the central government will notify the norms for the medical practitioner whose opinion is required for termination of the pregnancy.

Constitution of a Medical Board:

- The Bill states that the upper limit of termination of pregnancy will not apply in cases where such termination is necessary due to the diagnosis of substantial foetal abnormalities.

- These abnormalities will be diagnosed by a Medical Board. Under the Bill, every state government is required to constitute a Medical Board.

- These Medical Boards will consist of the following members: (i) a gynaecologist, (ii) a paediatrician, (iii) a radiologist or sonologist, and (iv) any other number of members, as may be notified by the state government.

Significance of the Bill:

- The move is in the interest of women's rights as it will help in expanding access of women to safe and legal abortion services on therapeutic, eugenic, humanitarian or social grounds.

- The bill is a great recognition of women's reproductive rights as these are essential for women's equality as they ensure women's rights of bodily autonomy.

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MISCELLANEOUS

CURRENT AFFAIRS

AFFORDABLE TEST KITS FOR DIABETES

- As informed by **Indian Council of Medical Research (ICMR), "SuChek"** has been developed with **financial assistance from ICMR**, which is **100% indigenous glucometer** suitable for diverse climatic conditions, affordable and validated as per International standards.

- **Another indigenous device** developed as a part of **ICMR study for HbA1c testing** is under validation.

- **Public health and hospitals is a State subject**. The Central Government, however, supplements the efforts of State Governments.

- The **Government is implementing National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke** (NPCDCS), the objectives of which include awareness generation for **prevention of Non-Communicable Diseases (NCDs),** screening, early detection, management and referral to an appropriate level health facility.

- Under the initiative, **frontline health workers such as Accredited Social Health Activists and Auxiliary Nurse Midwives are being leveraged** to carry out screening and to generate awareness about the risk factors of NCDs including diabetes among the masses.

- To leverage mobile technology, **an application called mDiabetes** has been launched for generating awareness, promoting adherence to treatment and inculcating healthy habits among the masses.

- Special media campaigns are **organized every year on 14th November on the occasion of World Diabetes Day**.

CENSUS INDIA-2021 TO BE CONDUCTED IN TWO PHASES

- The Census India-2021 will be **conducted in two phases**.

- The **first phase will begin from the 1st of next month** and will continue until the 30th of September of this year.

- The **second phase is Population Enumeration** which will be **conducted from 9th February to 28th February next yea**r throughout the country simultaneously.

- **Indian census is the largest single source of a range of statistical data** on different characteristics of the people of the country.

- With a **history of more than 130 years**, this reliable and time-tested exercise results in the comprehensive **collection of data relating to the people of India every 10 years.**

DEFENCE ACQUISITION COUNCIL APPROVES PROCUREMENT OF 83 TEJAS FIGHTER JETS

- Defence Acquisition Council (DAC) gave approval for procurement of 83 indigenous Tejas fighter aircraft for Indian Air Force.

- The Light Combat Aircraft Tejas indigenously-designed by Aircraft Development Agency (ADA) under the Defence Research and Development Organisation (DRDO) and manufactured by Hindustan Aeronautics Limited (HAL) is going to be the backbone of Indian Air Force in future.

- While orders of 40 Tejas aircraft had been placed with HAL in initial configurations, DAC paved the way for procurement of another 83 of the more advanced version of the aircraft from HAL.

- This procurement will be a major boost to Make in India as the aircraft is indigenously designed.

- The Defence Acquisition Council also approved the acquisition of indigenous defence equipment. The proposals were for procurement of aerial fuses and twin-dome simulators for Hawk Mk32 aircraft for the IAF.

INDIA'S FIRST GLOBAL HYPERLOOP POD COMPETITION

- **Indian Institute of Technology Madras** is organizing India's first Global Hyperloop Pod Competition to increase awareness and enthusiasm about Hyperloop in India. The competition is open globally and the final round will take place in the IIT Madras campus in July 2020.

- Called the 'Indian Hyperloop Pod Competition,' the **objective is to encourage student teams in India and abroad** to develop a Hyperloop Pod and compete to build the fastest, most innovative and efficient design and prototype of the relevant technologies in the field.

- This competition is **open to all the engineering colleges across the world**, to ideate, design and implement their ideas for the Hyperloop Pods.

- **Hyperloop is the 5th mode of transportation**, a high-speed train that travels in a near-vacuum tube.

- The **reduced air resistance** allows the capsule inside the tube to **reach speeds of more than 1000 km/h**, conveying people or objects at high speed while being very efficient, thereby drastically reducing travel times over medium-range distances.

- **Mr. Elon Musk, founder of SpaceX and CEO of Tesla**, proposed the idea of Hyperloop to the world in 2013 through a **whitepaper 'Hyperloop Alpha.'**

INNOVATE FOR ACCESSIBLE INDIA CAMPAIGN

- **Microsoft India and NASSCOM Foundation** announced the launch of the Innovate for Accessible India campaign in partnership **with the Department of Empowerment of Persons with Disabilities (DEPwD)**, Ministry of Social Justice & Empowerment, **Department of Science & Technology (DST)**, Ministry of Science and Technology and **ERNET** (National Research and Education Network under MeitY).

- Innovate for Accessible India is a **nation-wide innovation challenge aimed at empowering people with disabilities** with the technology and tools required for better integration into society and access to equal opportunities.

- The campaign will be an **aggregator of workable technology solutions developed using Microsoft Cloud, Artificial Intelligence and other technologies** that address gaps faced by people with disabilities, especially in acquiring services and support in education, skill building, employment, mobility, rehabilitation and other government services.

- The **winning innovations stand to win a grant of INR 10 lakhs each in the established projects category** (pilot testing with a group of more than 25 beneficiaries) and **a grant of INR 5 lakhs each in the early stage category** (working prototype tested by less than 25 people).

INTELLIGENT DATA CENTER SERVICE SOLUTION

- At the **Industrial Digital Transformation Conference 2020** which was livestreamed globally, Huawei officially released its Intelligent **Data Center Service Solution**.

- This service can help customers design, build and operate the w**orld's high-reliability (Tier-4), green and intelligent data centers**.

- With the aid of Artificial Intelligence, the **Power Usage Effectiveness (PUE) can be reduced** by 8%-15%

- **New technology is leading digital transformation:** AI, IoT, and 5G are being widely deployed, and various industry sectors, such as finance, governments, manufacturing, and media, are on a digital journey.

- A super-large data center must have five features: **resource convergence, high power efficiency, business continuity, technological innovation, and intelligence.**"

- Huawei has established a **comprehensive global service assurance system and accumulated extensive experience** in data center construction.

ISRO TO LAUNCH 36 MISSIONS INCLUDING 10 EARTH OBSERVATION SATELLITES IN 2020-21

- Indian Space Research Organization (ISRO) has planned **36 missions including satellites and launch vehicles** for the fiscal year 2020-21.

- **Details of the missions** are as follow:

  - Earth observation satellite-10

  - Communication satellite-3

  - Navigation satellite-2

  - Space science satellite-3

  - Technology Demonstration-1

  - PSLV-10

  - GSLV MK II-3

  - GSLV MK III-1

  - Small Satellite Launch Vehicle-2

  - Gaganyaan (Unmanned)-1

- During the current fiscal year of 2019-20, **till date 11 out of the total targeted missions have been completed.** Details of which are as follows:

  - Earth observation satellite-4

  - Communication satellite-1

  - Space science satellite-1

  - PSLV-4

  - GSLV MK III-1

Indian Space Programme is **focused on peaceful uses of Outer Space**. Towards this, Space Technology should be **used for benefit of the country and society, provide solutions for developmental activities** and address problems of the society at large.

MICROSOFT BUSINESS UNIT FOR DIGITAL TRANSFORMATION SOLUTIONS

- **Wipro Limited**, a leading global information technology, consulting and business process Services Company, **announced the launch of its Microsoft Business Unit.**

- The unit will focus on the development and evangelization of solutions leveraging Microsoft's enterprise cloud services. This initiative is an **outcome of Wipro's expanded global alliance with Microsoft** to accelerate cloud adoption and digital transformation for its customers across sectors.

- Wipro's Microsoft Business Unit consists of **a team of trained and certified Azure consultants and specialists**.

- The new unit will offer domain-based solutions and solution accelerators, including the following:

  - **Wipro's Cloud Studio** which delivers migration for different workloads on Microsoft Azure, Data, Microsoft Dynamics 365.

  - **Wipro's LiVE Workspace solution** which leverages Microsoft's Modern Workplace, Microsoft 365 as well as LUIS and the

Power platform to help customers unbox an intelligent, future-ready workplace where apps and data can be accessed from anywhere, anytime and on any device.

⦿ **Wipro's Data Discovery Platform (DDP)** empowers customers with actionable insights by exploring varied data sources through sophisticated techniques such as pattern discovery, Auto ML, visual sciences and storytelling to simplify interpretation and decision-making. The core of this platform brings together the **Wipro HOLMESTM Artificial Intelligence and Microsoft Azure**.

NATIONAL RAIL AND TRANSPORTATION INSTITUTE

- Technologies including **Internet of Things (IoT), Big Data and Artificial Intelligence** are being used for **modernisation of Signalling systems**.

- **Remote Condition Based Monitoring** using non-intrusive sensors, Data Logger system, Electronic Interlocking Stations, Mobile Train Radio Communication (MTRC), are being introduced.

- The use of this technology enables **prediction of signalling assets failures and enhances reliability of Signalling System**. Further, MTRC based on Long Term Evolution (LTE-4G) is planned to be extended to cover all major routes over Indian Railways.

- Indian Railways is also working on various way **side fault detection technologies** which are based on internet of Things, big data and artificial intelligence to improve safety, punctuality and line capacity.

- **Research, Design and Standards Organisation** (RDSO) is focusing on research and development work in coordination with academia and industry to improve Railway operation.

- A **Centre of Excellence on Next General Transportation Systems** to develop activity in research, education & training, knowledge transfer etc. has been launched in **collaboration with the University of Birmingham, UK**.

- Development of several new Technologies like **TCAS (Train Collision Avoidance System), Fog Pass, Fog Vision, Online Monitoring of Rolling Stock etc.** has been taken up.

PHONON LEVELS UP INTELLIGENT IVR SERVICES WITH THE LAUNCH OF 'AGNES'

- Contact Centre Solutions provider **Phonon Communications** recently launched a new **MRCP plugin** that enables **real-time streaming for voice based applications to Google Cloud**.

- **'Agnes' leverages Google's Speech-to-Text platform** to transcribe in real-time customer voice at enterprise call centers. It uses a **high-performance RPC framework developed by Google** (gRPC protocol) to stream user speech to Google's Speech Recognition (GSR) in real-time. This **drastically reduces the latency between the plugin and GSR**.

- **Agnes supports 120 languages in the GSR platform**, and it can be easily integrated with an existing system. And because it is dynamically coded, it can be tailor-fit to client's specific requirements.

- **Phonon uses Google Cloud services** like Google Text-to-Speech, Google Speech-to-Text and Google Dialogflow for speech processing with various clients.

- **Phonon's clients use intelligent voice response (IVR) services** to deliver contextual service, anticipate customer concern based on machine learning models and handle large volumes of calls. Phonon also utilizes voice bot that uses everyday language to answer queries and respond intelligently.

- **Dialogflow is a Google Cloud service**. **Phonon is a Google Cloud Technology Partner** which helps enterprises leverage the power of Artificial Intelligence (AI) and Machine Learning. It is a **two-time Deloitte Technology Fast 50 India winner** and a finalist in **HDFC Bank's Digital Innovation Summit.**

THE DISTRICT-LEVEL LAUNCH OF POSHAN PAKHWADA

- The district-level launch of **Poshan Pakhwada organized by Social Justice and Welfare Department** (W&CDD) south was held at the premises of DAC Namchi, Sikkim.

- Poshan Pakhwada is being celebrated **as part of Jan Andolan under POSHAN Abhiyaan** from 08th to 22nd March 2020.

- It might be mentioned here that **POSHAN Abhiyaan is a flagship programme of the Ministry of Women and Child Development** to reduce **stunting, undernutrition, anaemia and low birth weight**.

- The focus area of the two-week-long Poshan Pakhwada 2020 will be – **Men for Nutrition** – **increasing male engagement in Poshan Abhiyaan** – to improve Nutritional Indicators.

THE WORLD'S FIRST AEROGELS MADE FROM SCRAP RUBBER TYRES

- A team of **NUS researchers** has achieved a major technological breakthrough **by converting waste rubber tyres into super-light aerogels** that have a wide range of applications. This is the **first time that aerogels are made from waste rubber tyres**.

- The new rubber aerogels demonstrate remarkable properties — they are **extremely light, highly absorbent, very durable,** and they are also very **efficient at trapping heat and sound**.

- By upcycling waste rubber into products of a higher commercial value, this new technology **promotes a wider use of scrap tyres, and offers an eco-friendly way to recycle used rubber**.

- This novel technology was published in the print version of scientific journal **Colloids and Surfaces A: Physicochemical and Engineering Aspects in September 2019**, and a patent has been filed.

- To create the rubber aerogels, **recycled car tyre fibres are first blended into finer fibres**. These fine rubber fibres are then **soaked in water and very small amount of chemical cross-linkers**.

- The novel rubber aerogels created by the NUS team possess remarkable properties for many applications:

  ◎ **Extremely light and stiffer** than commercial foam

  ◎ **Highly porous**

  ◎ **Excellent sound absorption**

  ◎ **Excellent heat insulation**

  ◎ **Highly durable**

  ◎ When coated with a chemical called methoxytrimethylsilane, the **rubber aerogels become extremely water-repellent** and they can be used to **prevent moisture from corroding or damaging insulation equipment**.

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