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### International

#### Puncturing A Culture of Silence (Atul K Thakur - Delhi-Based Policy Professional and Columnist; Abhimanyu Chandra - Ph.D. Student at The University of Chicago)

→ For a long time, a defining question of the Trump presidency was whether, and when, Republicans would speak up against President Donald Trump's disregard for women, the constitution, the armed forces, racial justice, facts, and much else. Formed by a group of stalwart Republicans in December 2019, 'The Lincoln Project' is the most prominent of the cracks in the Republican Party so far. It seeks to "Defeat President Trump and Trumpism at the ballot box." Its founders are opposed not just to Mr. Trump, but to his cult following: of people living in fear that if they speak, he might tweet against them and they might lose their Senate or House seat. The Lincoln Project's founders also seek to challenge the larger culture of disregard for the constitution, of exclusion, of cruelty that has come with Mr. Trump. Through videos such as 'Truth', 'Betrayed', 'Shrinking' and 'Making China Great Again', The Lincoln Project has achieved a prized goal: getting under Mr. Trump's skin. He has tweeted against them, as a result only contributing to their reach and fundraising. They now have 1.5 million followers on Twitter.

#### Who Was John Robert Lewis, The US Congressman and Civil Rights Activist Deeply Influenced by Gandhi?

→ US Congressman John Robert Lewis, a stalwart of the American civil rights movement and a champion of racial equality and justice, passed away Friday after battling pancreatic cancer for more than half a year. He was 80. His death was confirmed by the Speaker of the House of Representatives, Nancy Pelosi, as well as the Congressional Black Caucus. "Today, America mourns the loss of one of the greatest heroes of American history: Congressman John Lewis, the Conscience of the Congress," Pelosi said in a statement. The son of an Alabama sharecropper, Lewis spent his life tirelessly fighting against racial discrimination and the systemic oppression of African-Americans in the United States. In the 1960s, he worked closely with civil rights icon Martin Luther King Jr and led countless sit-ins and marches to protest against racism and segregation. Lewis had also acknowledged the role that Mahatma Gandhi played in shaping his career as an activist during the civil rights movement. He was deeply influenced by Gandhi's use of non-violent methods to oppose the rule of the British Empire in India. Last year, the American Congressman introduced a Bill in the US House of Representatives that aimed to promote the legacy of Mahatma Gandhi and Martin Luther King Junior. Through the bill, he hoped to affirm the friendships of the governments of the US and India and establish a bilateral partnership, "for collaboration to advance development and shared values, and for other purposes". He had earlier proposed a similar bill, called the "Gandhi-King Scholarly Exchange Initiative Act of 2011", which aimed to use peaceful and non-violent methods for global conflict resolution.



## What Was the Gandhi Legacy Bill?

In December last year, Lewis sought a budgetary allocation of \$150 million for the next five years to fulfil the initiatives mentioned in the bill. The House Bill was moved to mark the 150<sup>th</sup> birth anniversary of Gandhi and affirm the friendship between the US and India. US House Speaker Nancy Pelosi has supported the Bill which also proposes the establishment of a Gandhi-King Scholarly Exchange initiative with an allocation of over \$2 million for five years until 2025. The foundation, proposed by the bill, would have a governing council convened by representatives from the Indian and US governments. It would oversee grants to NGOs working in the areas of health, climate change, women empowerment and education, the bill stated. Six other democratic lawmakers, including three Indian-Americans, co-sponsored the bill. Welcoming the bill, the then-Indian Ambassador to the US, Harsh Vardhan Shringla, said it reinforced “the close cultural and ideological bonds” between the two countries. More than 50 years after he had taken to the streets to protest against discrimination and demand voting rights for African-Americans, Lewis welcomed the spate of anti-racism protests that have taken place across the United States following the custodial killing of George Floyd in Minneapolis. “It was very moving, very moving to see hundreds of thousands of people from all over America and around the world take to the streets – to speak up, to speak out, to get into what I call ‘good trouble,’” he said in an interview with CBS in June.

## Why Justice Ruth Bader Ginsburg’s Health Has Democrats Worried

- Ruth Bader Ginsburg, the US Supreme Court’s oldest judge, said on Friday she was undergoing chemotherapy treatment for a recurrence of cancer, but would continue serving at the top court. The announcement has fuelled anxiety among many Democrats, who fear the liberal justice’s retirement or death would enable the ruling Republicans to appoint a conservative replacement, making the court more right-leaning for decades to come.

## The US Supreme Court’s Liberal-Conservative Divide

Unlike in India where judges appoint judges under the Collegium system, US Supreme Court appointees are elected directly by politicians. The White House nominates judges, and the US Senate – the upper house of the US Congress – confirms them. Currently, the Republican party has majority in both Houses. In the US, Supreme Court justices can serve for life, making the nine-member bench’s liberal-conservative divide highly consequential for decades. The court’s oldest member in history, Justice Oliver Wendell Holmes, Jr., retired in 1932 at age 90 after serving 30 years. Justice Ginsburg is 87, and has been on the bench for almost 27 years. Since the election of President Donald Trump, Republicans have been able to send two judges to the Supreme Court, bringing the number of conservatives on the bench to five, with four progressives.

## Why Democrats Are Worried

Many analysts believe that in the event of Ginsburg’s retirement or death, the Republican party would be quick to appoint a replacement, despite only months remaining until November 3, when elections will be held for both the White House and for 35 of the Senate’s 100 seats. In the case of a Democrat being elected to the White House, a Supreme Court vacancy would help the party maintain the liberal-conservative divide to 4-5, affecting the court’s trajectory for years to come. Earlier this year, a major Republican strategy change further increased Democrat troubles. In 2016, the last year of Barack Obama’s presidency, the Republicans, who then controlled the Senate, had blocked the nomination of liberal justice



Merrick Garland, claiming that with elections approaching, the American people should be able to decide who gets appointed. While some Democrats believed that the right-wing party would apply the same standard in 2020, Republican leaders this year publicly said they would proceed in making an appointment. They have defended their new position saying that this time, their party controls both the White House and Senate.

## Why Is Trump Sending A 'Surge' Of Federal Officers into US Cities?

- Even as his administration faces criticism over the use of force by federal troops in Portland, Oregon, US President Donald Trump on Wednesday announced a “surge of federal law enforcement” in cities run by Democrats, including Chicago, as part of an expanded ‘Operation Legend’. With the US economy crippled by the coronavirus and several polls predicting a defeat for Trump in the November elections, the Republican president has been promoting himself as the ‘law and order’ leader “bringing violent perpetrators to justice”, which many see as a blatant attempt to stoke racial fears in White suburban voters.

### What Is Operation Legend, And What Did Trump Say?

Named after LeGenD Taliferro -- a four-year-old Black child who was shot dead in Kansas City, Missouri, on June 29 while sleeping in his apartment – the operation was announced by the United States Department of Justice on July 8, 2020 to help the local police battle the “sudden surge of violent crime” in the city. Over 200 arrests were made in the city, which has reportedly seen a 40 per cent spike in murders in the last year, after over 100 federal troops were ushered in. Recently, while denouncing the “bloodshed” across America, and calling the unrest in Portland “worse than Afghanistan”, President Trump said he might deploy agents to New York, Chicago, Philadelphia, Detroit, Baltimore and Oakland, California, “cities controlled by liberal Democrats. All run, really, by the radical left.”

### What's Happening in Portland?

Since the killing of George Floyd at the hands of the police in Minneapolis on May 25, anti-racism protesters have been protesting on the streets of the city to seek police reforms. In early July, federal troops were moved into the city “to protect federal property”, but have often violently clashed with protesters and detained many in unmarked vehicles. Ted Wheeler, the Democrat mayor of the city, along with protesters, was also caught in a tear gas attack by federal agents as he stood outside a courthouse. Defending the Portland deployment, Acting Secretary of Homeland Security Chad Wolf has said the agents are “only targeting and arresting those who have been identified as committing crime.”

### What's the Link to The US Election?

Since his election campaign in 2016, when he claimed to save America from its descent into “chaos” and “barbarism”, Trump has often fallen back on the law and order rhetoric to tap into White racial resentment. Ahead of the November elections, as his administration fights criticism over mishandling of the coronavirus pandemic, job losses, and the economic crisis in the country, and as his numbers fall behind his Democratic challenger Joe Biden in opinion polls, Trump has made ‘law and order’ a key poll plank again. He hopes to revive his old voter base as he declares a fight against “anarchists” behind the recent protests “who the Democrats are afraid to take on”.



## Has There Been Any Pushback from Cities on Trump's Decision to Send Federal Troops?

Chicago Mayor Lori Lightfoot has said that while the troops could “address violence”, they will not be engaging with protesters in the city. “That’s what we call tyranny, and dictatorship, and we are not having it in Chicago,” she said. Opposing the move, New York City Mayor Bill de Blasio said he would take Trump to court if he followed through on his plan. “We’ve seen the chaos secret police are creating in Portland. We won’t let it happen here,” de Blasio wrote in a tweet. In a statement, Tim Keller, mayor of Albuquerque, where 35 federal agents have been deployed already, said that “we won’t sell out our city for a bait and switch excuse. Operation Legend is not real crime fighting; it’s politics standing in the way of police work and makes us less safe.”

## What Does the US Law Say?

As per most experts, Trump’s decision to send federal troops into cities will not stand in court because under the US Constitution, state governors generally have authority to maintain order within their states’ borders. The President only has broad powers over federal spaces such as courts etc. The country’s Posse Comitatus Act also limits the powers of the federal government in the use of federal military personnel to enforce domestic policies within the United States. While the US Insurrection Act lets presidents deploy forces to suppress domestic insurrection, it can be invoked only when it is impracticable to otherwise enforce US laws in court, or local authorities are depriving some people of equal protection, Ohio State law professor Peter Shane told Reuters. “Neither situation exists now... It suggests his rationale is pretextual,” Shane said. However, Customs and Border Patrol, an agency under the Department of Homeland Security whose members have been reportedly deployed in Portland, have special powers to “search and arrest to protect the homeland”, which can be cited in case of Portland. The Trump administration has been insisting that the troops are only protecting federal property. On Tuesday, however, White House Press Secretary Kayleigh McEnany said that their enforcement power may extend beyond federal properties. “Where you have someone shooting off a commercial-grade firework and then running across the street, we don’t believe that that extends past our jurisdiction,” she said.

## Why Historians Have Called for A Review of UK's Citizenship Test

- According to a Guardian report, **historians have called on the UK's Home Office to revise the UK citizenship test because the history section of this test contains “misleading and false” representation of history during Britain's colonisation.** Called the **'Life in the UK Test'**, it is a requirement for applicants who wish to acquire UK citizenship. In an open letter published on July 21 in the Official Journal of the Historical Association, 181 signatories have called for a review of this test on the grounds that the **“official handbook published by the Home Office is fundamentally misleading and in places demonstrably false”**. The test appears to glorify Britain’s colonial past, say the historians. The signatories include William Dalrymple, Joya Chatterji of Trinity College, Cambridge, Simukai Chigudu, Associate Professor of African Politics, Oxford, and Yasmin Khan, Associate Professor of History, Oxford.

## What Are Some Objections to The Home Office's Citizenship Test?

This retelling of Britain’s history in an official handbook that is being used to prepare for the test, is an attempt to sanitise the nation’s violent and brutal past that may be particularly difficult for citizenship applicants from countries which were former British colonies, say the





historians. There are several examples that the historians have highlighted in their letter. “For example, (the handbook) states that ‘While slavery was illegal within Britain itself, by the 18th century it was a fully established overseas industry’. In fact, whether slavery was legal or illegal within Britain was a matter of debate in the eighteenth century, and many people were held as slaves,” write the historians. The letter states that the handbook makes no mention of the over three million people who were transported as slaves and that people died during these journeys. “It also states that ‘by the second part of the 20th century, there was, for the most part, an orderly transition from Empire to Commonwealth, with countries being granted their independence’ (p.51). In fact, decolonisation was not an ‘orderly’ but an often-violent process, not only in India but also in the many so-called “emergencies” such as the Mau-Mau Uprising in Kenya (1952-1960).” Independence movements and uprisings in the former colonies also find no mention in this handbook. “The handbook promotes the misleading view that the Empire came to an end simply because the British decided it was the right thing to do. Similarly, the abolition of slavery is treated as a British achievement, in which enslaved people themselves played no part.” The historians state that people of colour and people in colonies also have not been adequately represented in this retelling of history and their contributions to the development and growth of Britain has been entirely omitted.

### Why Is the Home Office’s Handbook Problematic?

The letter explains the problem very succinctly. “For applicants from former colonies with knowledge of imperial violence, this account is offensive. For those from outside the former Empire without prior education in history, the official handbook creates a distorted view of the British past.” Applicants from India, for instance, are well aware of the long-term impact of socio-economic policies enacted in the Indian subcontinent for the economic and territorial benefit of Britain. They also have knowledge and awareness of brutal violence, imprisonment and assault inflicted upon civilians and revolutionaries who had been working for the cause of freedom from British oppression. “For those with a basic knowledge of history, whatever their background, it puts them in the invidious position of being obliged to read, remember and repeat a version of the past which is false. For British citizens in general, the official history perpetuates a misleading view of how we came to be who we are,” the letter says.

### What Has Been the Home Office’s Response?

It appears that the Home Office has taken note of the letter. The Guardian reported a Home Office spokesperson saying: “Given the breadth of British history, the Life in the UK handbook provides a starting point to explore our past and help those seeking to live permanently in the UK gain a basic understanding of our society, culture and historical references which occur in everyday conversations.... We have published several editions of the handbook since it was launched and will continue to keep its contents under review and consider any feedback we receive.” It was not immediately clear if the concerns highlighted in this specific letter were going to be considered by the Home Office or whether any reviews and amendments were in process. This comes at a time when the Black Lives Matter movement has led to widespread protests across the UK and Europe. Statues of colonisers and symbols of colonisation have been defaced and toppled in protests against racism and historic injustices perpetrated against people of colour and immigrants.



## Secularism in Context of Hagia Sophia

→ As the muezzin summons the faithful to prayer at the Hagia Sophia in Istanbul on July 24, a sense of jubilation will suffuse Muslim hearts in Turkey and in the ummah. Equally, it will cause anger among the world's orthodox Christians and disappointment among Catholics and Protestants. This is borne out by the welcome in Turkey and dismay in the Christian world, especially in Europe, of President Recep Tayyip Erdogan's announcement to turn what has been since 1935 the Hagia Sophia museum once again into the Ayasofya mosque. Secular nationalism was an important ideological marker of the 20th century. States wedded to Marxist ideologies wished to root out religion from public spaces and also as a factor in the lives of their citizens. Other polities, whether liberal and democratic or authoritarian, were committed to reducing the salience of religion as an ingredient in nationalism and in public life even if they were reconciled to its continuing significance in the private sphere. These were elements of a progressive outlook which influenced political elites not only in the developed world but also in de-colonised countries. Ataturk and his attempts at propelling Turkey into the modern era won him admirers including Jawaharlal Nehru. Now the secular impulse is under challenge everywhere. While the progressive view favoured secular nationalism in the Islamic world, its political elites were fractured on accepting it as the dominant idea in nation-building. This was witnessed in important countries such as Egypt under the charismatic Abdel Gamal Nasser whose promotion of the idea of Arab nationalism was stoutly opposed by the Islamic Brotherhood as a conspiracy against the Islamic faith. Having secured a homeland for the Muslims of the Indian subcontinent, the Pakistani elite was initially ambivalent about the extent of the role of faith in constructing the new country's national ethos. But it fought a losing battle against the clergy and against those who wondered what the rationale of Partition was if Pakistan was not to become an Islamic state. The case of Pakistan is important in the Turkish context because of the close relations that came to be established between the armies of the two countries. The Turkish army was at the vanguard of defending Ataturk's secularism till it was outmanoeuvred by Erdogan. The Pakistani army under Zia-ul-Haq became the votary of the Nizam-e-Mustafa. Public affairs were increasingly infused with religiosity. Pervez Musharraf, an ardent admirer of Turkey, and a professed votary of 'moderate' Islam, could not reverse the course set by Zia-ul-Haq. In Iran, Shah Reza Pahlavi too championed a polity which did not emphasise the country's Islamic credentials. He was overthrown in 1979. The Islamic Revolution that followed was in direct opposition to the principles of secular nationalism. It established a faith-based Shia polity dominated by clerics. That exacerbated the ancient contradictions between Shia and Sunni states but it did compel the Sunni states to gradually move towards granting greater space to the Sharia in governance. But in Turkey, the generals who staged a coup in 1980 reasserted the tradition of secular nationalism. Now Mr. Erdogan has contained the army's influence and the generals are instruments of his will. The public cultures of almost all countries are going to increasingly be based on the faith of majorities even if some symbolically seek to incorporate a few elements of minority religions. The Ayasofya mosque will clearly point in that direction.

## Why Netflix Cancelled a Turkish Drama After Row Over an LGBTQ Character

→ Netflix has cancelled its latest Turkish drama original 'If Only' amid pressure from Turkish government authorities who wanted the removal of a gay character. Rather than acquiesce to the government's demands to censor content, news reports said the streaming service has decided to drop plans for the production entirely. Scriptwriter Ece Yorenc said that on the



day the drama was scheduled to start filming, the Turkish government refused to grant the production company the required license. The Financial Times reported that in an interview with Turkish film news website Altyazi Fasikul, Yorenc said: "Due to a gay character, permission to film the series was not granted and this is very frightening for the future." Netflix later confirmed that the show had been cancelled due to government censorship. 'If Only' featured some of Turkey's biggest actors including Birkan Sokullu and Özge Özpirinçci. This comes at a time when LGBTQ rights in Turkey have faced criticism from President Recep Tayyip Erdogan's ruling party AKP and pride marches and events have faced crackdowns. Under Erdogan, observers believe that Turkey has become increasingly conservative.

## What the Latest ICJ Ruling Means for Qatar And Its Airspace

→ More than three years after they imposed a sweeping blockade on Qatar, Saudi Arabia and its allies have received a setback from the **International Court of Justice (ICJ)**. The top United Nations (UN) court refused an appeal by **Bahrain, Saudi Arabia, Egypt and the United Arab Emirates (UAE)**, which had challenged the authority of the **International Civil Aviation Authority (ICAO)** to adjudicate on the legality of the air blockade that the four nations have imposed against Qatar. **The ICAO is the international aviation agency of the UN. While the blockade still remains in force, a ruling by the ICAO in Qatar's favour next year would mean a major win for the country and its national carrier, Qatar Airways.**

### The Qatar Blockade

In June 2017, Qatar's powerful neighbouring Arab nations of Saudi Arabia, United Arab Emirates, Bahrain and Egypt moved to sever diplomatic and economic ties with Qatar by shutting off shipping routes and air space, over Doha's alleged support for terrorism across the region and its ties with Iran. Qatar, however, denies supporting Islamic extremism and has widely condemned the isolation as a clear attack on its sovereignty. The neighbours then issued a 13-point list of demands for Doha to comply with in order to restore erstwhile relations. Some demands include Qatar closing down news outlets such as Al-Jazeera, sever ties with radical Islamist groups like Muslim Brotherhood, scale down ties with Shia-majority Iran and remove Turkish troops stationed in the country. Since 2017, the blockade of Qatar has included the closing of its only land border (with Saudi Arabia), stopping Qatari ships from entering ports anywhere in the Saudi coalition, and blocking Qatari planes from flying in their airspace. Qatari citizens were also expelled as part of the measures.

### The Dispute at the ICJ

Alleging that its rights of free passage under the 1944 Convention on Civil Aviation were violated, Qatar approached the International Civil Aviation Authority (ICAO), the UN aviation body created by that Convention. At the ICAO, Saudi Arabia and its allies argued that only the ICJ should have the authority to settle the dispute, since it went beyond aviation matters. In 2018, the ICAO ruled against the Saudi coalition, holding that it did have jurisdiction to hear the case. The four countries then took the case to the ICJ, which on Tuesday backed the ICAO finding 15-1. The ICAO is now expected to deliver its verdict on the air blockade next year, UN News said.

## Pyrrhic Victory

→ Can Singapore's People's Action Party (PAP) of Prime Minister Lee Hsien Loong reinvent itself? That is the looming question in the city state, despite it winning a super majority in the

[Shatabdi Tower, Sakchi, Jamshedpur](#)



general election on July 10, as the leadership has set in motion a succession plan. The PAP, which has been the face of Singapore's managed democracy since 1965, secured but a pyrrhic victory in the snap ballot. The party polled 61% of the vote, which translates into 83 seats out of 93 contested. That is way below the 69.9% it obtained in 2015, during the commemoration of 50 years of Singapore's independence and in the aftermath of the death of the country's founder and first Prime Minister Lee Kuan Yew, Prime Minister Lee's father. The party's record lowest performance was 60% in 2011. The PAP's poor showing is all the more telling because the elections were called months ahead of schedule and the COVID-19 restrictions denied the Opposition even the normal, if highly limited, channels of outreach during the nine-day campaign period. Crucially, Mr. Lee has acknowledged the real meaning of the PAP's reduced majority, which he described as a reflection of the desire of younger voters for greater diversity of voices in Parliament. In a concrete response, he has announced that Workers' Party (WP) chief, Pritam Singh, would be formally recognised as the leader of the Opposition, an unprecedented development in Singapore's unicameral legislature. The 10 seats the WP has won, up from six in 2015, is the highest ever by an Opposition party.

### U.K. To Suspend Extradition Treaty with Hong Kong

- Britain announced on Monday it would suspend its extradition treaty with Hong Kong in an escalation of a dispute with China over its introduction of a national security law for the former British colony. Foreign Secretary Dominic Raab told Parliament the treaty would be suspended immediately and an arms embargo would be extended to Hong Kong. The ban is another nail in the coffin of what then Prime Minister David Cameron in 2015 cast as a "golden era" of ties with China, the world's second-largest economy. **London has been dismayed by a crackdown in Hong Kong, which returned to Chinese rule in 1997, and the perception that China did not tell the whole truth over the COVID-19 outbreak. Australia and Canada suspended extradition treaties with Hong Kong earlier this month.**

### Escalating Tensions

- The U.S.'s decision to close China's consulate in Houston is an unprecedented escalation in the steadily deteriorating ties between the world's two largest economies. The Trump administration has accused the consulate and other Chinese diplomatic missions in the country of economic espionage, visa fraud and attempted theft of scientific research – allegations that China has denied. It has announced visa restrictions on students, imposed sanctions on Chinese officials over a Hong Kong security law and is reportedly considering a sweeping travel ban on the millions of members of China's ruling Communist Party. The consulate decision is by far the most drastic measure. This is the first time a Chinese mission is being closed in the U.S. since both countries normalised diplomatic relations in 1979. Since the tariff war that President Trump launched in 2018, China has retaliated against every hostile move by the U.S. China made matters worse by providing refuge in its San Francisco consulate to one of the Chinese researchers against whom the U.S. has issued an arrest warrant because she allegedly lied to the authorities about her ties to the Army. The U.S-China tensions are no longer about trade and technology. What started as a trade war has snowballed into a larger geopolitical contest between the two superpowers, something the world hasn't seen since the hostile competition between the U.S. and the Soviet Union during the Cold War. President Trump, who is under attack at home for his handling of the novel coronavirus pandemic, may be finding comfort in ramping up tensions with China in an election year. But what makes the crisis dangerous in the long term is that





there is a growing consensus in Washington that a hostile China, resorting to large-scale espionage, poses a serious threat to the U.S.-dominated international order. The Washington establishment, which had fought Trump's overtures towards Russia and several other policy measures, is in line with the President in his confrontational policy towards China, which has already done serious damage to bilateral relations that cannot be reversed easily. Incidentally, the U.S.-China crisis is unfolding at a time when Beijing is also acting more assertively in Asia, picking fights with countries in its neighbourhood, from India to Vietnam and Malaysia. The message from China is that it is ready for a long game of escalation, as long as the U.S. keeps playing it. This is a cyclical trap – measures and countermeasures keep taking ties to new lows with no possibility of an exit. If this deterioration is not arrested immediately, the U.S. and China risk a total breakdown in diplomatic relations. That is bad news for the whole world.

### Past Events That Access Exacerbated

#### The Coronavirus and Anti-Chinese Racism

Trump and his subordinates have **blamed China for spreading the coronavirus**, which first emerged in the central Chinese city of Wuhan late last year. They have repeatedly described the virus in racist and stigmatizing terms, calling it the **Wuhan virus, China virus and Kung Flu**. On July 4, Trump said China "must be held fully accountable." **The administration also has defunded and ordered a severing of ties with the World Health Organization, accusing it of having abetted shortcomings in China's initial response to the outbreak.** On Tuesday, the Justice Department **accused Chinese hackers of attempting to steal information about American research on a virus vaccine.** For its part, China has rejected the administration's attacks over the virus and has criticized the poor US government response to the outbreak. **Chinese propagandists** also have promoted the countertheory, with no evidence, that **US soldiers may have been the original source of the virus during a visit to Wuhan last October.**

#### A Severe Test on Trade Ties

Trump won office in 2016 partly on his accusations that China was **exploiting the country's trade relationship** with the United States by selling the country far more than it purchased. In office, he decreed **a series of punitive tariffs on Chinese goods, and China retaliated**, in a trade war that has now lasted more than two years. While **a truce was effectively declared in January** with the signing of what the administration called a 'Phase 1' trade deal, **most tariffs were not eased.**

#### Showdown in The South China Sea

The Trump administration has increasingly challenged China's assertions of sovereignty and control over much of the South China Sea, including vital maritime shipping lanes. Just last week, Secretary of State Mike Pompeo, who has described China as a major security threat, decreed that most of China's claims in the South China Sea are "completely unlawful," setting up potential military confrontations between Chinese and US naval forces in the Pacific.

#### A Widening Battle Over Technology

China has long been **accused by successive US administrations of stealing American technology.** The Trump White House has escalated the accusations by seeking an international **blacklisting of Huawei**, China's largest technology company, calling it a front for **China's efforts to infiltrate the telecommunications infrastructure of other nations for**



strategic advantage. The company's chief technology officer, Meng Wanzhou, has been detained in Canada since December 2018 on an extradition warrant to the United States on fraud charges. Last week Britain declared it was siding with the United States in barring Huawei products from its high-speed wireless network.

### Expulsions of Journalists and Other Media Workers

Accusing China's state-run media outlets of fomenting propaganda, the Trump administration sharply limited the number of Chinese citizens who could work for Chinese news organizations in the United States. China retaliated by ordering the expulsions of journalists from The New York Times, The Washington Post and The Wall Street Journal, and took other steps that suggested further impediments to American press access in China were looming. The Times, concerned about the possibility of further limitations on journalists working in China, announced last week that it was relocating much of its major news hub in Hong Kong to Seoul, South Korea.

### Expulsions of Students

The Trump administration has taken steps to cancel the visas of thousands of Chinese graduate students and researchers in the United States who have direct ties to universities affiliated with the People's Liberation Army, according to US officials knowledgeable about the planning. Such expulsions portend possible further educational restrictions, and the Chinese government could retaliate by imposing its own visa bans on Americans.

### Suppression of Democratic Freedoms in Hong Kong

Last November, Trump, with bipartisan support, signed legislation that could penalise Chinese and Hong Kong officials who suppress dissent by democracy advocates in Hong Kong. In May, Trump said he was taking steps to end Hong Kong's preferential trading status with the United States. Chinese authorities have denounced the measures and vowed to retaliate.

### Repression of Uighur Muslims In Xinjiang

This month the Trump administration-imposed sanctions on a number of Chinese officials, including a senior member of the Communist Party, over human rights abuses by China in the Xinjiang region against the country's largely Muslim Uighur minority. Beijing promised retaliation against American institutions and individuals it deemed guilty of "egregious" conduct in issues concerning Xinjiang, a vast Western expanse in China where the authorities have placed 1 million people in labour camps and imposed intrusive surveillance on others.

### Other Long-Standing Grievances: Taiwan And Tibet

For the Chinese government, US actions taken in the name of defending people living anywhere in China constitutes blatant interference in its internal politics – a grievance with deep-seated roots going back to its struggles with imperialist powers in the 19th century. In May the Trump administration approved a \$180 million arms sale to Taiwan, part of a far bigger arms deal that has angered Chinese authorities, who regard the self-governing island as part of China. Another long-standing source of Chinese anger is the U.S. deference to the Dalai Lama, the spiritual leader-in-exile of Tibet, the former Himalayan kingdom in China's far west. In 2018 Trump signed a bill that penalizes Chinese officials who restrict U.S. officials, journalists and other citizens from going freely to Tibetan areas. Last November the State



Department's ambassador-at-large for international religious freedom, Samuel Brownback, warned that only Tibetans could choose the successor to the Dalai Lama, who turned 85 this month, setting up a new clash with Beijing, which contends it will choose his successor.

## The New Technology Cold War

- ➔ What began as a report by the US House Intelligence Committee flagging issues posed by Chinese telecom companies Huawei Technologies and ZTE nearly a decade ago, has evolved into a full-scale duel between the two global technology powerhouses, which now threatens to draw in the entire world. While China has traditionally resisted allowing American big-data companies such as Facebook and Google to operate within its jurisdiction, there have still been significant dealings between the two countries on the technology side until now. Last year, Apple recorded \$100 million of daily sales in China, while Huawei Technologies reported record revenues primarily from its exposure in western markets, including the US.

### How Could Action Against Hardware Makers Develop into A Tech Cold War?

In February 2011, Huawei published an open letter to the US government denying the security concerns raised about the company or its equipment, and requesting a full investigation into its corporate operations. In response, the House Permanent Select Committee on Intelligence began an investigation in November 2011 into "the counterintelligence and security threat posed by Chinese telecommunications companies doing business in the US". In its report submitted in 2012, the House panel noted that "Huawei and ZTE cannot be trusted to be free of foreign state influence and thus pose a security threat to the United States". Last month, the US Federal Communications Commission designated the two companies as national security threats. Most observers see this as a 'technological cold war' that could extend beyond just the US and China, and compel other countries, including India, to effectively choose between one camp and the other. It is being described as a geopolitical struggle over technology that threatens to divide the world into two distinct technological blocs, with both countries striving to limit the other's access to its advanced know-how. While the US has blockaded Huawei on the ground that its equipment is designed to aid snooping and would make American telecoms players dependent on subsidised Chinese technology, the question is whether other countries think the risks are high enough to dump a cheaper, viable option. The Huawei action could indeed signal the rising of a formidable new wall.

For China, the action has come at a time when 5G is set to be rolled out globally, with Huawei generally ahead in the race. For a lot of countries, a viable 5G rollout will need Chinese firms. But the 5G network in China relies on key components from the US – and the new American restrictions on the use of chipmaking tools mean Huawei could face shortages in the supply of specialist chips.

### Where Does India Stand in This Battle?

Back in December 2009, the Department of Telecommunications (DoT) had asked Indian mobile companies to suspend deals with Chinese equipment makers after fears that Chinese equipment were being used for hacking and spying. But India has been a fence-sitter since then – and has never fully banned Chinese companies from its telecom equipment industry. Indeed, much of India's telecom growth story has been supported by Chinese companies in both hardware and software. After the standoff in Ladakh, however, India has asked state-owned telecom service providers to exclude Chinese companies from the scope of their network upgrade contracts; this was part of the wider decision to signal curbs on Chinese investments and tech companies in the country. In official statements, India justified the ban



on 59 mobile apps with Chinese links on grounds of a threat to national security. That could cost Huawei billions of dollars in revenue, with India a major overseas market for Huawei's telecom equipment, which currently powers India's 3G and 4G networks. In 2018-19, the company reported revenues of ₹12,884 crore from India, up from ₹8,282 crore in the previous financial year.

India's hesitation in acting against Chinese equipment makers in the telecom industry has derived from the view that the Chinese have brought in a semblance of competitiveness to a market earlier dominated by pricier European firms such as **Nokia and Ericsson** – however, the border clashes and the US action could now force New Delhi into the anti-China camp.

### The Apprehensions Regarding Huawei

- The rise of the company has paralleled China's economic resurgence. Huawei was founded in 1987 with a start-up capital of 21,000 RMB (then around ₹73,000) in Shenzhen. Fast forward three decades, and China is the world's largest trading nation and second-largest economy, while Huawei is the world's biggest supplier of telecom equipment and, according to the company, the second-biggest manufacturer of smartphones.

### Ownership Question

Huawei's founder, Ren Zhengfei joined the People's Liberation Army's (PLA) Engineering Corps in 1974. While much has been made of Mr. Ren's PLA background, the Engineering Corps, at the time, was not an uncommon choice for aspiring engineers. He was promoted to a rank that is the equivalent of a Deputy Regimental Chief, but without a military rank. He left the Army in 1983 when China disbanded much of the PLA Engineering Corps, and started Huawei four years later. Huawei describes itself as "an independent, privately-held company" and says it is "not owned or controlled by, nor affiliated with the government". The company says it is owned by its employees, who are given shares. That claim has been questioned. While Mr. Ren owns 1% of Huawei Investment and Holding, the company that owns Huawei Technologies, the remaining 99% is owned by Huawei Investment & Holding Trade Union. In a 2019 paper, Donald C. Clarke of George Washington University Law School and Christopher Balding of Fulbright University Vietnam argued that what Huawei called "employee shares" were "at most contractual interests in a profit-sharing scheme". The ownership of the Trade Union, they said, remained unclear. "If Huawei Holding is 99%-owned by a genuine Chinese-style trade union operating the way trade unions in China are supposed to operate, it is in a non-trivial sense state-owned," they wrote. "Regardless of who, in a practical sense, owns and controls Huawei, it is clear that the employees do not". **Beyond the question of ownership, even "private" companies in China have close ties with the state – all the more so when they are involved in sensitive sectors of the economy. Moreover, the Chinese government has, on occasion, acted on the behalf of Huawei, treating it as it would a prized asset.**

### What Are Earthlings, The Documentary at The Centre Of A Hostage Crisis in Ukraine?

- On July 21, a nearly 10-hour long siege ended in the Ukrainian city of Lutsk after the country's president, Volodymyr Zelensky, endorsed the 2005 American documentary film Earthlings. What is the film about, and why did the president post a video on his official Facebook page urging people to watch it?





### Who Made the Film and What Is It About?

Nation First, the production company behind Earthlings, says the film is about “humankind’s total dependence on animals for economic purposes. Internet Movie Database (IMDB)’s synopsis says the film “chronicles the day-to-day practices of the largest industries in the world, all of which rely entirely on animals for profit.” Narrated by Academy Award winner Joaquin Phoenix, who is also a passionate animal rights activist, the documentary shows human reliance on animals through five chapters – pets, food, clothing, entertainment and scientific research. The film has been written, produced and directed by Shaun Monson, who is also a founding partner of Nation Earth. It features music by Moby, a celebrity vegan and animal welfare activist like Phoenix.

### How Was the Film Made?

Shaun Monson began work on the documentary in 1999, shooting in shelters around Los Angeles. The film has hidden camera footage of animal suffering in agricultural and scientific industries and it took Monson almost six years to obtain all the material and complete the film. In 2015, Monson released a sequel to the film titled Unity which examines why “despite the advent of science, literature, technology, philosophy, religion, and so on – none of these has assuaged humankind from killing one another, the animals, and nature.”

### How Was the Film Received?

In 2005, Earthlings won the best documentary award at Artist Film Festival – an event “dedicated to recognising activist efforts of filmmakers”. The film has also won awards at the Boston International Film Festival and the San Diego Film Festival.

### What Happened in Ukraine?

On Tuesday night, 44-year-old Maksym Kryvosh hijacked a bus with 13 people on board and claimed that he had explosives. He posted his manifesto and a series of demands on Twitter, including that the president endorse the film Earthlings and several government officials admit to being “terrorists”, among others. Finally, the Ukrainian president posted a short video message on his official Facebook page saying, “Everybody watch the 2005 film Earthlings.”. The over 10-hour siege ended with the gunman surrendering and the hostages being released safely. Kryvosh has been charged with terrorism, hostage-taking and illegal possession of weapons. According to reports in the Ukrainian press, Kryvosh is an animal rights activist who helps protect stray dogs. He was born in Russia. He has reportedly been convicted twice for robbery, fraud, and illegal arms handling, and has spent nearly 10 years in prison. As per CNN.com, Ukrainian interior minister Arsen Avakov later said at a press briefing, “The film (Earthlings)... is a good one. But you don’t have to be so screwed up and cause such a terror for the entire country, you can just watch it without all that.”

## Foreign Affairs

### Who Is Matiullah Jan, The Pakistani Journalist Who Was Abducted This Week?

- ➔ Senior Pakistani journalist Matiullah Jan, known for his criticism of the country’s powerful institutions, returned home on Tuesday night hours after he was abducted in Islamabad by



unidentified persons. The event has sparked a debate on press freedom in the country, which experts say have received a setback under the government of Prime Minister Imran Khan.

### Who is Matiullah Jan?

A veteran journalist, Jan has worked for several major media organisations in the country, and has been fiercely critical of the Pakistani government, security establishment, and judiciary. He currently runs his own YouTube channel. In 2018, Jan was removed from Waqt Television, where he worked as an anchor, reportedly due to pressure from security agencies. A year before, a brick was hurled at his car while he was driving near Islamabad. Jan, 51, has long been covering the country's legal affairs, and was noticed for his spirited reporting of Supreme Court proceedings against Justice Faiz Isa— a fellow judge of the top court known for pronouncing strong judgments against Pakistan's military establishment. Justice Isa, who is slated to become Chief Justice of Pakistan in 2023, had been accused in a May 2019 reference by Pakistani President Arif Alvi of "concealing his properties in the United Kingdom allegedly held in the name of his wife and children"— charges that were seen by many as an attempt by the military of stopping Isa from reaching the top judicial office. The apex court quashed the case in June this year. Last week, the Supreme Court took Suo motu cognisance of a tweet by Jan that was critical of the judiciary, and initiated contempt proceedings against him.

### Abduction and Release

According to a Dawn report, Jan on Tuesday morning had gone to drop off his wife to her workplace— a school in Islamabad's Sector G-6. There, he was forcibly removed from his car and thrashed by persons in uniform as well as plainclothes, CCTV footage showed. In the video, which has gone viral, Jan is also seen flinging his cell phone away, only to be brought back by a uniformed man. He was then taken to an undisclosed location, the report said. After Jan's abduction, a tweet from his account, apparently made by his son, read, "Matiullahjan, my father, has been abducted from the heart of the capital Islamabad. I demand he be found and the agencies behind it immediately be held responsible. God keep him safe". The news of Jan's abduction caused a furore, and the Islamabad High Court sent notices to top Pakistani officials to appear in court the next day to explain what had happened, with or without Jan. The court's Chief Justice called it "a test case for police and the federal government", and said that the state was "responsible for whatever happened". Pakistan's Information Minister Shibli Faraz expressed concern, as did Human Rights Minister Shireen Mazari, who called the abduction "very disturbing". Mazari said that she had spoken to the police chief of Islamabad. Later that day, Jan was released unharmed outside Islamabad, and could reach his family after being helped by local residents, Dawn reported. Upon his return, Jan tweeted, "I am back home safe and sound. God has been kind to me and my family. I am grateful to friends, the national and international journalist community, political parties, social media and rights activists, lawyers' bodies, the judiciary for their quick response which made it possible." Jan told the Supreme Court that his abduction was directly related to the contempt case against him, Naya Daur TV reported.

### 'Enforced Disappearances' in Pakistan

Critics have denounced "enforced disappearances" in the country, which have been rising around the same time as the Pakistani military has grown more influential, especially since the election of Prime Minister Imran Khan in 2018. Activists have blamed the ruling government of cracking down on press freedoms, despite the Prime Minister's claims on the



contrary. According to Freedom Network, a media watchdog in Pakistan, 33 journalists were killed in the country between 2013 and 2019, with no successful conviction to date. **On the 2020 World Press Freedom Index by Reporters Without Borders (RSF), Pakistan stands at 145 among 180 countries, three places behind India.**

## What Is the Controversy Around Pakistani Film Zindagi Tamasha?

- Pakistan's Senate Committee for Human Rights approved the release of the film Zindagi Tamasha, dismissing all objections raised against it. Senator Mustafa Nawaz Khokhar of the Pakistan People's Party (PPP), who chairs the panel, said in a tweet on July 14 that the committee had "found nothing wrong" with the film, and that the Pakistani censors could now "go ahead to release it post-Covid". Two days later, however, a petition was filed in a Lahore court seeking a lifetime ban on the film. Following a short hearing, the Additional Sessions Judge asked for a reply from the makers of the film, and adjourned the hearing until July 27. Directed by the acclaimed Pakistani filmmaker Sarmad Khoosat, 'Zindagi Tamasha' won the prestigious Kim Ji-Seok Award at the Busan International Film Festival last year. A bilingual film that is mostly in Punjabi, it stars Arif Hassan, Eman Suleman, Ali Qureshi, Samiya Mumtaz, and Imran Khoosat. The film's scheduled release on January 24 this year was stalled, and a series of protests, open letters, and multiple reviews by the censors followed.

### What Is the Film About?

"An exploration of many themes", Zindagi Tamasha tells the story of Rahat Khawaja (played by Arif Hassan), a naat khawan — a poet who recites poetry in praise of the Prophet. In an introduction of the character, the filmmakers said that Rahat Khawaja "enjoys a celebrity status amongst the community in the old city of Lahore, and is a devout Muslim, who, in the eyes of everyone is a superhuman incapable of any sacrilege. Hence, when he does wrong there is no forgiveness for him". From the trailer of the film it appears that Khawaja and his family find themselves ostracised after a certain video featuring him becomes public. The contents of the video are not clear. The trailer appears to hint at the misuse of Pakistan's infamous blasphemy law. Sarmad's sister Kanwal Khoosat, who has co-produced the film, has said that tolerance is the overarching theme, and main takeaway of the film.

### Who Is Sarmad Khoosat, The Film's Director?

Khoosat, 41, is a critically-acclaimed filmmaker, and considered by many to be among Pakistan's best. After directing TV shows and telefilms for some years, Khoosat made his big screen directorial debut with Manto in 2015. The critically and commercially successful film had Khoosat himself playing the role of the novelist and playwright Saadat Hasan Manto. Khoosat has been active in the Pakistani entertainment industry for well over a decade, and has directed the popular TV drama Humsafar, starring Fawad Khan and Mahira Khan, and Shehr-e-Zaat. He was awarded the Pride of Performance, the highest national literary honour by the Pakistani government, in 2017.

### Who Is Opposing the Release of The Film?

After the film was cleared by the censor board, the Islamist political party Tehreek-e-Labbaik Pakistan (TLP), began protests against its release. Even after the board reviewed and cleared the film for the second time after asking for a few cuts, the TLP called for mass rallies across the country. "The characterisation of the naat-reader in the film is such that it can cause discomfort to the public and might lead them to deviate from Islam and Prophet



(Muhammad),” the TLP had said in a statement. “Thus, this movie must not be released as it could otherwise be a grave test of the Muslims of the Islamic Republic of Pakistan.” The party was founded by the Barelvi preacher Khadim Hussain Rizvi after the 2016 hanging of Mumtaz Qadri, a commando who had been assigned to protect the former Governor of Punjab province Salmaan Taseer – but who had, in 2011, killed the Governor as alleged retribution for Taseer’s statements in favour of Asia Bibi, a Pakistani Christian woman who had been convicted of blasphemy. The TLP’s main agenda has been the opposition to attempts at changing or diluting the blasphemy laws. It has held several protest rallies and demonstrations to this end, and has shown its ability to gather massive crowds. The TLP contested the elections in Pakistan in 2018, and won three seats in the Sindh provincial assembly.

### What Position Has the Government Taken?

While the film was cleared by all three censor boards (the CBFC, Punjab, and Sindh boards) in Pakistan, the Sindh Board of Film Censors put a ban on Zindagi Tamasha three days before its scheduled release, as it anticipated that it could cause unrest within a segment of the society. The censor authorities in Punjab followed suit. Firdous Ashiq Awan, who was then adviser to Prime Minister Imran Khan on Information and Broadcasting, tweeted that the producer of the film had been told to delay the release until the censor board had consulted with the Council of Islamic Ideology (CII), a constitutional body that advises the legislature on Islamic issues. This was the first time in the history of Pakistani cinema that the approval of the CII was sought on the content of a film.

### How Did the Filmmaker Respond?

In an open letter written a few days before the scheduled release, and addressed to the country’s President, Prime Minister, Chief of the Army Staff, Chief Justice, Ministry of Information, and the public at large, Sarmad Khoosat said that he wanted to explore themes like “gender constructs, class divisions and human experiences”. “There was never any intention to attack, to point fingers at or humiliate any individual or institution,” he said. Khoosat subsequently tweeted that he had been getting “dozens of threatening phone calls and messages”, and published a second open letter, in which he reiterated that the film was “about a ‘good enough Muslim’ – there was/is no mention of a sect, party or faction of any sort. Neither in the uncensored nor the censored version.” He said that his film was “an empathic and heartfelt tale of a bearded man who is so much more than just that”.

### How Has Pakistani Civil Society Reacted?

Civil society, the film fraternity, and sections of the media have come out in support of Khoosat, and criticised the government for succumbing to pressure from extremist elements. Among those who have backed Khoosat is the acclaimed British-Pakistani writer Mohammed Hanif (who wrote A Case of Exploding Mangoes), who has seen the film, and who wrote a blog for Samaa TV in a bid to clarify some points. The film, Hanif said, was not about child molestation, as had been alleged. “The subject doesn’t figure at all in the plot, nor is it a part of the subplot. It’s neither mentioned nor alluded to,” he wrote. He said that there was one line in which the main protagonist says, “But what about those who molest children?” And the censor board had ordered even that line deleted, he said. Hanif also said that there were no ulema in the film, and that the protagonist was a small property dealer. “He is a compassionate man, who helps out the needy, composes and reads sehras at weddings and makes halva at Eid Milad un Nabi and distributes it. He is not a professional naatkhwan, but





he loves reciting naats.” According to Hanif, the only taboo the film breaks is showing a man with a beard doing household chores. “I can’t remember the last time a bearded man or any man was shown in a film cooking, doing laundry, doing his ailing wife’s hair. Is showing a bearded man doing house chores an insult to our faith?” he wrote.

### Which Films Have Been Banned in Pakistan?

Pakistani censors have repeatedly banned Indian films, including Padman, Raazi, Raees, Uda Punjab, Neerja, Haider, Bhaag Milkha Bhaag, among many others. They also banned The Da Vinci Code in 2006 after protests from the Christian community.

### Why It Is A Challenge Maintaining Troops On LAC

- With three extra Army divisions having moved to the Line of Actual Control in Ladakh to mirror the Chinese build-up (The Indian Express, July 22), the Army has started preparing for extra provisions for the additional troops who will remain deployed through the winter. The Army does not share specifics about what will be required and is being transported. A look at what it takes to maintain a soldier in such harsh conditions:

#### Why Is It So Challenging?

The eastern Ladakh region is a high-altitude desert, where temperatures can drop to -20°C. The thinner air at high altitudes also makes breathing tougher. Major General A P Singh, who served during 2011-13 as the head of logistical operations of XIV Corps that is responsible for the China-facing LAC, explained that on such terrain the soldier is “fighting three elements: the enemy, the weather and his own health”.

#### What Is the Cost?

“Cost of keeping one soldier there, starting from buying of matches to his condiments, to his food, to his fuel for warming to his shelter to everything, for one turnaround year is easily at least to the tune of Rs 10 lakh,” Singh said. “I am just talking about keeping a soldier there, equipping him, feeding him, keeping him fighting fit, providing him with all the wherewithal.” Then there are a lot of “untold costs that nobody will tell you” because of the sensitive nature of the information. “Mirror deployment through the winter will be a huge trade-off,” Singh said. Other officers who have served in the region agreed with the assessment; one former senior commander said the cost may be even higher.

#### How Are the Supplies Transported?

By road transport or through aerial trips. Land supply routes are open only during the summer, with high-altitude passes covered in snow from around November to March-April. There are two road accesses to Ladakh from Srinagar: Rohtang Pass and Zoji La. But neither is open round the year. With Rohtang tunnel likely to open later in the year, it can potentially solve the problem, but there are two more passes on that route, Baralacha La and Thanglang La, both of which are at a higher altitude than Rohtang, and may be snowed in during the winter. Singh said one round trip between Srinagar and Leh for a truck that can carry 10 tonnes of supplies costs around Rs 1 lakh. A C-17 Globemaster military aircraft, Singh said, can carry up to 50 tonnes and an hour-long flight cost roughly Rs 24 lakh. Aircraft usually carry about 200-250 tonnes a day; heavy material has to go by road.



### What Happens After A Truck Reaches Leh?

Even to reach Leh, the Army has to build transit shelters for the crew of the trucks. But bringing the supplies to Leh is just the first stop. Nearly 70% of all these supplies has to be taken to forward bases such as Siachen or Kargil. As the terrain gets tougher, the Army uses the help of locals and mules to carry some of the materials. They walk around 10 km and back every day through the summer months so that the troops are stocked for the winters.

### What Will Be the Additional Cost This Time?

With the usual deployment, the Army starts the process of Advance Winter Stocking in April-May. Aircraft are usually used for emergency requirements. "In normal course you have about 2 lakh tonnes of supplies, food, equipment etc for XIV Corps for being stocked for the 6-7 months," Singh said. With the new troops retained for winters, "it may not double everything, but close to 3 lakh tonnes of essentials will be needed now". With Rs 1 lakh for transporting ten tonnes through road, and the high price of air transport, the total additional transportation cost can be calculated, he said. The government will have to buy everything "at a higher rate now in the open market, compared to what we would have provisioned earlier".

### What Specialized Equipment Do the Soldiers Require?

For high altitudes, the Army procures specialised equipment to keep troops warm and ready for possible health issues. "Most troops will be there for their first winter. It will be very difficult for them as they will also have to be combat-trained in these excruciating conditions," Singh said. Anything above 14,000 feet is considered super-high altitude. Of the four friction points in the standoff, Galwan Valley, Hot Springs and Gogra Post are higher than 14,000 feet. Depsang Plains – where troops were not involved in a faceoff but where India's access to traditional patrol points has been blocked by China – is higher than 17,000 feet. For such altitudes, the Army provisions for Special Clothing and Mountaineering Equipment (SCME). It includes ropes, special helmets, snow boots, jackets etc. Singh said each soldier posted to Siachen is issued two sets, each costing over Rs 2 lakh. "We requisition for about 30,000 soldiers, including 5,000 in reserve," he said, and added that at least a third of the additional deployment will need SCME as they will be posted in Galwan Valley, Gogra Post and Depsang Plains. In a report for 2015-18 tabled in Parliament in February this year, the Comptroller & Auditor General noted "delays in procurement of high-altitude clothing and equipment items up to four years leading to acute shortage...". The Army later dismissed the report, saying it pertained to an earlier period and the issue has been addressed since.

### What Other Challenges Are Involved?

The forces have to fight against time. The turnaround time from Srinagar to Leh and back is 15-20 days. It takes even longer from Rohtang Pass. With nearly twice the supplies to be taken before the passes close in the winter, "now you are trying to pump in more", Singh said. Additionally, the forces have to stock up for the infrastructure work going on near the forward areas, including on the Durbuk-Shyok-Daulat Beg Oldie road. Another important aspect is building new shelters. "With the strength doubling, you can imagine the amount of stuff that has to be built, including heat-proof shelters or at least liveable for the -20°C temperatures," Singh said. The cement does not set after September, he said, so the Army "only has the month of August left".



## China Has Crossed Its 1960 Claims Along The LAC

→ Chinese troops are currently present on the north bank of Pangong Lake in Ladakh in an area that is beyond what even China described as its official boundary during talks with India in 1960, official records show. China's tent that it set up on the bend of the Galwan river, which sparked the violent face-off culminating in the death of 20 Indian soldiers and an unknown number of Chinese personnel on June 15, was also beyond China's territorial claims, according to the 1960 records. The records contradict China's current claims of where the Line of Actual Control (LAC) runs. They also raise questions on recent statements from top Indian officials that China is not present anywhere on Indian territory. In 1960, India certainly viewed China's presence in areas where the People's Liberation Army (PLA) transgressed in May as being beyond Beijing's own territorial claims. At the north bank of Pangong Tso, the PLA moved up to Finger 4 and prevented India from crossing Finger 4. **The Fingers refer to mountain spurs on the bank, and run from 1 to 8, west to east. China now claims up to Finger 4, while India says the LAC is at Finger 8. China previously built a road to Finger 4 in 1999 and has dominated up to Finger 4, but since May has, for the first time, completely cut off India's access to its LAC at Finger 8, effectively shifting the line 8 km west.** Following the four rounds of Corps Commander-level talks, the PLA has moved back from Finger 4 to 5, while Indian troops also moved back further west to Finger 2, the base post in the area where the troops initiated their patrols, The Hindu reported earlier.

### MEA Report

During boundary negotiations in 1960, China spelled out its territorial claims in the area. The record is available in the "Report of the Officials of the Government of India and the People's Republic of China on the Boundary Question", published by the Ministry of External Affairs. Following border talks in April 1960 in Delhi between Prime Minister Jawaharlal Nehru and Chinese Premier Zhou Enlai that failed to break the impasse, it was decided that officials of the two governments would meet "to examine factual materials in the possession of the two governments to support their stands." Three rounds of talks were held. The first session took place from June 15 to July 25, 1960, in Beijing, with 18 meetings. The second session was held in Delhi from August 19 to October 5, when 19 meetings were held. Following the final session in Rangoon, when 10 meetings were held, the official report was signed on December 12, 1960. In the report, the Indian side asked: "What was the exact point where the alignment cuts the western half of Pangong Lake? And what was the exact point where it left the Pangong Lake?" The Chinese side responded: "The coordinates of the point where it reached the Pangong Lake were Longitude 78 degrees 49 minutes East, Latitude 33 degrees 44 minutes North." This roughly corresponds to an area near Finger 8, around 8 km east of where China now says the LAC is and where it transgressed in May. Regarding the Galwan Valley, when India asked in 1960 for "heights of peaks and locations of passes" in the area, the Chinese side replied that the alignment "crossed the Galwan river at Longitude 78 degrees 13 minutes East, Latitude 34 degrees 46 minutes North." Even accounting for approximations because the coordinates were round numbers noted in "degrees" and "minutes" while the "seconds" were not specified; China has gone beyond its 1960 claims both in Pangong Tso and in the Galwan Valley. In the Galwan Valley, the 1960 line ran east of the bend of the Galwan river, called the Y-nallah, which was the site of the June 15 clash. The clash took place following a dispute during the de-escalation process, triggered when the PLA put up a tent near the bend, and marked the worst violence on the border since 1967.



## Why India Must Revive and Expand the Quad Initiative to Counter China

- Arun Prakash, former chief of the Indian Navy, explains the origins of the so-called Quadrilateral initiative against China and argues in favour of reviving it. The Quad traces its origins to the great Asian tsunami of December 26, 2004. Indian ships, aircraft and helicopters were dispatched within hours to assist Sri Lanka, Maldivian and Indonesian neighbours in distress. This swift response established our navy's credentials as a credible regional force. On the other hand, not a single PLA Navy (PLAN) ship was seen throughout the 2004 tsunami relief operations. Later, when navies of five nations assembled for a joint exercise off Okinawa, China issued a demarche to India, US, Japan and Australia seeking details about their meeting – terming it a “Quadrilateral initiative”. China's hostility arouses trepidation amongst Quad members. “The time for ambivalence is over and while India will have to fight its own territorial battles with determination, this is the moment to seek external balancing. A formal revival and re-invigoration of the Quad is called for. It is also time to seek an enlargement of this grouping into a partnership of the like-minded. Other nations feeling the brunt of Chinese brawn may be willing to join an “Indo-Pacific concord” to maintain peace and tranquillity and to ensure observance of the UN Law of the Seas,” he writes. He states that it is essential for India's strategic-planners and policy-makers to retain clarity about the reason India has become a partner that is sought after by the US and others. “While India's status as a nuclear-weapon state and major land/air power, as well as a growing economy and attractive market, has been known for some time, New Delhi's newfound allure for the US, the Quad and ASEAN is rooted only in its ability to project power and influence in distant ocean reaches”.

## Another Front

- For the third time since early June, China on Tuesday repeated its claim that Bhutan's eastern boundary was a “disputed” area with Bhutan. Its first claim was at a UNDP-led Global Environment Facility conference on June 2-3, when the Chinese representative tried to stop funding for the Sakteng forest reserve in Bhutan's eastern district of Trashigang, which abuts Arunachal Pradesh's Tawang district. The claim was surprising for several reasons: China has not objected earlier to funding provided to the sanctuary at the GEF. Second, the Trashigang area does not share a boundary with China. Finally, whatever the origins of the claim, Chinese officials have not raised the eastern boundary in 24 rounds of talks with Bhutan, that began in 1984. Thus far, talks have been only about the Pasamlung and Jakarlung valleys in Bhutan's north, and Doklam and other pasturelands to the west, that come up to the trijunction point with India.
- China said that it has offered Bhutan a “package solution” to its boundary dispute, reviving a reference to its 1996 proposal for a territory swap to give Bhutan the disputed areas in its north in exchange for the disputed western areas, including Doklam. After the 11<sup>th</sup> round of talks in 1996, Bhutan's 4th King Jigme Singye Wangchuck (the present King's father) had informed the Bhutanese National Assembly that China “wanted to exchange the valleys to the north, with an area of 495 square kilometres, with the pasture land to the west, totalling 269 square kilometres”. The deal would have benefited Bhutan by giving it the larger chunk of land, and resolving its tensions with China, but was a big worry for India, as the Doklam swap would give the People's Liberation Army (PLA) access to the strategically sensitive “chicken neck” of the Siliguri corridor. Bhutan rejected the offer given India's concerns. While the Chinese MFA did not specify details of the “package solution” it has offered, it is likely to be referring to the same deal.





→ **Bhutan's response at the start was to reject China's claim at the GEF, and it was able to secure the funding.** Subsequently the Bhutanese Embassy in Delhi served a démarche to the Chinese Embassy (Bhutan does not have diplomatic relations with China), but the Chinese MFA repeated the claim in early July, and then again, this week. Bhutan has now appeared to take a sober view of China's claims by saying that all disputes would be taken up in the next round of China-Bhutan talks. Talks – the last round was in 2016 – have been put off due to the Doklam stand-off in 2017, elections in 2018, and the pandemic this year. Despite Beijing's repeated statements on the boundary issue, both Thimphu and New Delhi have chosen not to react in a rash manner. For Bhutan, the Chinese claim may be seen as a pressure tactic: an attempt to hurry the scheduling of the next meeting, or to gain leverage in the boundary talks. For India, that is already dealing with Chinese aggression across the Line of Actual Control, the Sakteng claim could be a diversionary tactic, or one aimed at driving a wedge between India and Bhutan. More significantly, **by claiming Bhutan's eastern boundary, China is attempting to double down on its claims over Arunachal Pradesh, neither of which it has lien on or control of. The repetition of its "package" offer is worrying as it implies that Beijing is not giving up its push for the Doklam plateau, where it has consolidated its military infrastructure and would like to inch towards India's Chumbi valley, a strategically sensitive location.** No matter what Beijing's designs are behind its new claims in Bhutan, New Delhi and Thimphu must stay the course, with the close cooperation and complete understanding they have shared for decades, in order to respond to them purposively.

## Nation

### Statues as Deeply Contested Heritage

#### → The Mahatma and Mohandas

Take the example of Gandhi's statues on account of their obvious global significance, complexity and, since they are surrounded by controversy, their current relevance. Some strongly feel that the Mahatma must be off the pedestal because of his alleged collusion with the Empire, more so for his racism. Assume the worst. Shall we then allow the violent removal of his statues? Now, Gandhi was neither born a Mahatma nor became one overnight. He began life as a very ordinary man, a child of his social milieu with straightforward middle-class aspirations. It is easy to imagine him inheriting caste prejudices in his childhood and, after arrival in London to study law, imbibing the prejudices of his colonial masters, to see himself as close to educated British elites than to Indian peasants or the 'untouchables', and when in Johannesburg, to the oppressed black community. The real question worth addressing is whether he continued living this way, consolidating his racist and casteist views or struggled to jettison these prejudices. Not just superficially, but by confronting his deepest self, the kind of bad person he had been and then transforming it into something altogether different. By all accounts, Gandhi struggled with his demons all his life and eventually became the Mahatma that he was – a global figure of immense ethical significance, admired by his adversaries, inspiring great men like Martin Luther King, even Nelson Mandela. The statues erected globally honour and celebrate the struggle embodied by this self-reflective Mahatma and not Mohandas Karamchand Gandhi, the parochial, upper caste Gujarati or the barrister loyal to the British Empire. Those who want to demolish his statues are simply going by an early fragment of his life that he himself disowned with great



effort. There can be nothing more absurd or tragic. Imagine a statue of Valmiki torn down because of his perceived criminal past! Imagine further the fate of statues of all great men of the past on the sole ground that they fail the 'patriarchy test'. Who in the past would pass it? Not Marx, the revolutionary, not Ambedkar, our greatest Dalit leader, not Mandela or Martin Luther King, icons of Black struggles, nor I am afraid, all the male gods worshipped by many. The general lesson to be drawn is this: a decision to preserve or remove statues cannot be based on current stereotypes of historical figures or narrow standards of political correctness that highlight a general flaw characteristic of an entire era but must instead rely on complex, collective judgment of a person's overall contribution to social, political and intellectual life. Gandhi, in my view, passes this test. Colston or Cecil Rhodes do not. We must carefully avoid anachronism in our judgments of the past.

### The Legacy of C S Seshadri, Mathematician, Researcher and Educator

- In life, the mathematician **C S Seshadri** was recognised around the world with awards ranging from the Padma Bhushan and the **Shanti Swarup Bhatnagar Award** in India to fellowships with Royal Society fellowship and American Mathematical Society abroad. In death, he has received tributes from the Prime Minister, the President and leaders in science and mathematics. From the huge body of his contributions to mathematical research and teaching, two stand out. **He founded the Chennai Mathematical Institute, which attracts talent from around the world with its courses on mathematics, computer science and theoretical physics.** The other standout is **his breakthrough research in algebraic geometry; there is a theorem and a type of constant named after him.** Seshadri died on Friday, aged 88.

### Reading the New National Education Policy 2020

- The Union Cabinet cleared a new National Education Policy (NEP) proposing sweeping changes in school and higher education. The new NEP, approved by the Cabinet, has not been presented in Parliament. A look at the takeaways, and their implications for students and institutions of learning:

#### What Purpose Does A NEP Serve?

A NEP is a comprehensive framework to guide the development of education in the country. **The need for a policy was first felt in 1964 when Congress MP Siddheshwar Prasad criticised the then government for lacking a vision and philosophy for education.** The same year, a 17-member Education Commission, headed by then UGC Chairperson D S Kothari, was constituted to draft a national and coordinated policy on education. Based on the suggestions of this Commission, Parliament passed the first education policy in 1968. A new NEP usually comes along every few decades. India has had three to date. **The first came in 1968 and the second in 1986, under Indira Gandhi and Rajiv Gandhi respectively; the NEP of 1986 was revised in 1992 when P V Narasimha Rao was Prime Minister.** The **third is the NEP released Wednesday** under the Prime Ministership of Narendra Modi.

NEP 2020 has been formulated after consultation that involved nearly over 2 lakh suggestions from 2.5 lakhs Gram Panchayats, 6600 Blocks, 6000 ULBs, 676 Districts. The MHRD initiated consultation process from January 2015.



In May 2016, 'Committee for Evolution of the New Education Policy' under the Chairmanship of **Late Shri T.S.R. Subramanian**, Former Cabinet Secretary, submitted its report. Based on this, the Ministry prepared 'Some Inputs for the Draft National Education Policy, 2016'.

In June 2017 a 'Committee for the Draft National Education Policy' was constituted under the Chairmanship of eminent scientist **Dr. K. Kasturirangan**, which submitted the Draft National Education Policy, 2019 to the Hon'ble Human Resource Development Minister on 31st May, 2019.

NEP 2020 is sweeping in its vision and seeks to address the entire gamut of education from preschool to doctoral studies, and from professional degrees to vocational training. It acknowledges the 21<sup>st</sup> century need for mobility, flexibility, alternate pathways to learning, and self-actualisation.

### School Education

- ❖ New Policy aims for universalization of education from pre-school to secondary level with 100 % Gross Enrolment Ratio (GER) in school education by 2030.
- ❖ The current 10+2 system to be replaced by a new 5+3+3+4 curricular structure corresponding to age groups 3-8 years (foundational stage), 8-11 (preparatory), 11-14 (middle), and 14-18 (secondary) respectively. This will bring the hitherto uncovered age group of 3-6 years under school curriculum, which has been recognized globally as the crucial stage for development of mental faculties of a child. The new system will have 12 years of schooling with three years of Anganwadi/ pre schooling.

This is a significant shift from the 1986 policy, which pushed for a 10+2 structure of school education. This brings early childhood education (also known as pre-school education for children of ages 3 to 5) under the ambit of formal schooling. The mid-day meal programme will be extended to pre-school children. The NEP says Teaching up to at least Grade 5 to be in mother tongue/ regional language. No language will be imposed on any student.

Language issues caused the most outrage at that time, as the original draft called for mandatory teaching of Hindi to all school students. That clause was dropped and the final policy document makes it clear that "there will be a greater flexibility in the three-language formula, and no language will be imposed on any State. The three languages learned by children will be the choices of States, regions, and of course the students themselves, so long as at least two of the three languages are native to India. Sanskrit will be offered as an option at all levels of school and higher education," said the policy, adding that other classical languages will also be available, possibly as online modules, while foreign languages will be offered at the secondary level.

Education Minister, who would not even confirm that the policy will be implemented by centrally-run schools.

- ❖ Emphasis on Foundational Literacy and Numeracy.  
A National Mission on Foundational Literacy and Numeracy will ensure basic skills at the Class 3 level by 2025.
- ❖ No rigid separation between academic streams; extracurricular, vocational streams in school;
- ❖ Vocational Education to start from Class 6 with Internships.  
Students will begin classes on coding as well as vocational activities from Class 6 onwards. Indian knowledge systems, including tribal and indigenous knowledge, will be incorporated into the curriculum in an accurate and scientific manner.



- ❖ Assessment reforms with 360-degree Holistic Progress Card, tracking Student Progress for achieving Learning Outcomes.  
In school education, the policy focuses on overhauling the curriculum, “easier” Board exams, a reduction in the syllabus to retain “core essentials” and thrust on “experiential learning and critical thinking”.
- ❖ A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree.

### Higher Education

- ❖ Gross Enrolment Ratio in higher education to be raised to 50 % by 2035; 3.5 crore seats to be added in higher education.  
promises to provide higher education free to about 50% of the students (with scholarships and fee waivers); and aims to increase the gross enrolment ratio in higher education to 50% by 2035. Some of these proposals were suggested by earlier committees such as the Yashpal Committee and C.N.R. Rao Committee, and several experts.
- ❖ The policy envisages broad based, multi-disciplinary, holistic Under Graduate education with flexible curricula, creative combinations of subjects, integration of vocational education and multiple entry and exit points with appropriate certification. UG education can be of 3 or 4 years with multiple exit options and appropriate certification within this period.  
Under the four-year programme proposed in the new NEP, students can exit after one year with a certificate, after two years with a diploma, and after three years with a bachelor's degree. “Four-year bachelor's programmes generally include a certain amount of research work and the student will get deeper knowledge in the subject he or she decides to major in. After four years, a BA student should be able to enter a research degree programme directly depending on how well he or she has performed... However, master's degree programmes will continue to function as they do, following which student may choose to carry on for a PhD programme,” said scientist and former UGC chairman V S Chauhan.

### Will the Focus on Multiple Disciplines Not Dilute the Character of Single-Stream Institutions, Such as IITs?

- The IITs are already moving in that direction. IIT-Delhi has a humanities department and set up a public policy department recently. IIT-Kharagpur has a School of Medical Science and Technology. Asked about multiple disciplines, IIT-Delhi director V Ramgopal Rao said, “Some of the best universities in the US such as MIT have very strong humanities departments. Take the case of a civil engineer. Knowing how to build a dam is not going to solve a problem. He needs to know the environmental and social impact of building the dam. Many engineers are also becoming entrepreneurs. Should they not know something about economics? A lot more factors go into anything related to engineering today.”
- ❖ Academic Bank of Credits to be established to facilitate Transfer of Credits.
  - ❖ Multidisciplinary Education and Research Universities (MERUs), at par with IITs, IIMs, to be set up as models of best multidisciplinary education of global standards in the country.  
The policy also proposes phasing out of all institutions offering single streams and that all universities and colleges must aim to become multidisciplinary by 2040.





- ❖ The National Research Foundation will be created as an apex body for fostering a strong research culture and building research capacity across higher education.
- ❖ Higher Education Commission of India (HECI) will be set up as a single overarching umbrella body for the entire higher education, excluding medical and legal education. HECI to have four independent verticals - National Higher Education Regulatory Council (NHERC) for regulation, General Education Council (GEC) for standard setting, Higher Education Grants Council (HEGC) for funding, and National Accreditation Council (NAC) for accreditation. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards.
- ❖ Affiliation of colleges is to be phased out in 15 years and a stage-wise mechanism is to be established for granting graded autonomy to colleges. Over a period of time, it is envisaged that every college would develop into either an Autonomous degree-granting College, or a constituent college of a university.

The NEP proposes sweeping changes including opening up of Indian higher education to foreign universities. The document states universities from among the top 100 in the world will be able to set up campuses in India. While it doesn't elaborate the parameters to define the top 100, the incumbent government may use the 'QS World University Rankings' as it has relied on these in the past while selecting universities for the 'Institute of Eminence' status. However, none of this can start unless the HRD Ministry brings in a new law that includes details of how foreign universities will operate in India. It is not clear if a new law would entice the best universities abroad to set up campuses in India. In 2013, at the time the UPA-II was trying to push a similar Bill, the top 20 global universities, including Yale, Cambridge, MIT and Stanford, University of Edinburgh and Bristol, had shown no interest in entering the Indian market. Participation of foreign universities in India is currently limited to them entering into collaborative twinning programmes, sharing faculty with partnering institutions and offering distance education. Over 650 foreign education providers have such arrangements in India.

dismantling of the UGC and the All India Council for Technical Education (AICTE), introduction of a four-year multidisciplinary undergraduate programme with multiple exit options, and discontinuation of the M Phil programme.

The Ministry feels that an increase in government funding of education to 6% of GDP will be sufficient to cover the financial implications of the NEP. However, such an increase in funding has been proposed but not achieved for the last half-century, point out experts.

This is certainly a tall order, given the current tax-to-GDP ratio and competing claims on the national exchequer of healthcare, national security and other key sectors.

### How Will These Reforms Be Implemented?

The NEP only provides a broad direction and is not mandatory to follow. Since education is a concurrent subject (both the Centre and the state governments can make laws on it), the reforms proposed can only be implemented collaboratively by the Centre and the states. This will not happen immediately. The incumbent government has set a target of 2040 to implement the entire policy. Sufficient funding is also crucial; the 1968 NEP was hamstrung by a shortage of funds. The government plans to set up subject-wise committees with members from relevant ministries at both the central and state levels to develop implementation plans for each aspect of the NEP. The plans will list out actions to be taken by multiple bodies, including the HRD Ministry, state Education Departments, school Boards, NCERT, Central Advisory Board of Education and National Testing Agency, among others. Planning will be followed by a yearly joint review of progress against targets set.



## What Is the Timeline for Implementation?

The policy is meant to transform the education system by 2040. Some proposals will be implemented immediately, starting with the change in the name of the Ministry of Human Resource Development into the Ministry of Education. "There are over 100 action points from the Policy. Implementation will be done in phases, based on time, region and types of institutions with Institutes of Eminence (IoEs) and Central Universities taking the lead," said Higher Education Secretary Amit Khare. For instance, four-year undergraduate degrees with multiple entry-exit options will be introduced in the 20 IoEs from the 2020-21 academic year, while others continue with the existing three-year degree courses. Existing M.Phil. students can continue until they complete their degree, although new admissions for the programme will not be accepted. The National Testing Agency will introduce a pilot version of the common entrance test by December 2020, which will be used for admission to all IoEs and central universities in 2021. Some Indian Institutes of Technology are working on developing the technical structure of the Academic Credit Bank, which will also be established by December, and become applicable to all new students joining central universities next year. The National Foundational Literacy and Numeracy Mission which is to be implemented by 2025 will be launched by the end of this year, said Mr. Khare. The National Council of Educational Research and Training (NCERT) will introduce the curricular framework for the new school structure, including early childhood care, by the next academic year.

## Where Do the Difficulties Lie?

Some of the proposals require legal changes. The draft Higher Education Commission of India Bill has been languishing in the Ministry for over a year, but is likely to be published for feedback by September. The proposal for a Board of Governors for universities may also require amendments of the Central and State Universities Acts. A Cabinet note has already been moved to set up the National Research Foundation as a trust under the government, but in order to make it a fully autonomous body, an Act may be required. Others require funding. Free breakfasts can only be considered in the next academic year if a budget allocation is made to cover it. The process of converting affiliated colleges into degree granting autonomous institutions and then further into fully fledged universities is estimated to take at least 15 years, as the Centre will have to provide financial assistance for this purpose.

## Missing in The Final Policy

What are the proposals or statements that were emphatically made in the draft but are missing in the policy? One important statement that was repeatedly made in the draft policy, that all commercially oriented private institutions will be closed, is missing in the final policy – though the 2020 policy promises closure of substandard teacher education institutions only. Now the policy simply states, "The matter of commercialization of education has been dealt with by the Policy through multiple relevant fronts, including: the 'light but tight' regulatory approach that mandates full public self-disclosure of finances", though almost every policymaker and administrator in education recognises that there is a serious problem with the private education sector in India. Second, the draft policy promised doubling public expenditure on education to 20% of the total government expenditure, from 10%. The 2020 policy simply reaffirms the commitment to allocation of 6% of GDP. A few other recommendations of the Committee did not find a place in the final policy. They include setting up of a National Education Commission at the national



level and a similar one at the State level. There is no mention of State School Education Regulatory Authorities in the 2020 policy. At the State level, the Department of School Education is regarded as the apex body. There is also no promise of 'full' recruitment of teachers at all levels, though the policy promises robust recruitment mechanisms to be put in place. Among the few new proposals, the establishment of a model Multi-Disciplinary Education and Research University in every district is one. In school education, a National Assessment Centre has been promised to make assessment and evaluation more holistic. The policy, unlike the draft, rightly recognises the need to strengthen the Central Advisory Board of Education. Apart from a few controversial proposals, a few untenable basic beliefs and assumptions of the Committee prevail. The Committee seems to have great faith in "light but tight" regulation, confidence in the private sector in making honest self-disclosures of all aspects of their operations, and faith in the adequacy of common norms for public and private institutions. It also seems to have faith in the government's ability to implement many reforms – for example, in doing away with the affiliating system and making all colleges autonomous degree-awarding colleges of high quality, ensuring institutional and faculty autonomy, and in the autonomous functioning of institutions of governance with no external interference. Policymakers and administrators have been struggling unsuccessfully with some of these issues for years. A major challenge policymaker will continue to face is how to differentiate the benevolent philanthropic private sector from undesirable but powerful market forces in the education sector and regulate the entry and growth of the latter.

## Rajasthan Political Drama

### Judicial Indiscipline

- ➔ The Rajasthan High Court's order, directing that status quo be maintained in the disqualification proceedings against 19 legislators and holding a legal challenge to the Rajasthan Assembly Speaker's notice under the anti-defection law to be maintainable, borders on judicial indiscipline. The order does not give any reason for admitting the petition and overruling objections to its admissibility, except for saying legal questions have arisen, including one on the validity of a sub-clause in the Tenth Schedule. It is as if the mere fact that some questions have arisen is enough to disregard the doctrine of precedent. There is a specific prohibition in a Constitution Bench verdict of the Supreme Court on courts intervening in disqualification matters at a stage prior to a presiding officer giving a ruling. Of the 13 questions the Division Bench has framed, purporting to arise from the **Speaker C.P. Joshi's notices to 19 Congress members in the Sachin Pilot camp, the last one itself shows it cannot entertain the petition. The question is whether the Supreme Court's judgment in Kihoto Hollohan (1992) is a bar on the High Court examining the issues. It is illogical that the Bench holds that the petition is maintainable even while proposing to examine whether a Constitution Bench judgment binds it or not. In other words, a petition has been declared maintainable on the ground that the court proposes to examine its maintainability. Admitting a matter without explaining how the law laid down by the Supreme Court does not bind a High Court raises grave questions of judicial propriety.** However, even as the political crisis plays out on the lawns of Raj Bhavan, the top court itself appears to be raising the question whether dissent within a party can attract disqualification proceedings. **Whatever the circumstances, the SC should not condone improper and premature judicial intervention.**
- ➔ A simple petition challenging the issuance of notices by the Speaker to the rebel MLAs was turned into a very complex one challenging the constitutionality of Para 2(1)(a) of the Tenth



Schedule to the Constitution (anti-defection law). The lawyers brought in by the rebels brought big issues before the court which were not very relevant to decide this matter.

### Staying the Speaker's Action

The simple plea initially brought before the court by the rebels was that the notice issued by the Speaker was bad in law and should be quashed. To answer this question, one should take a look at the rules framed under the Tenth Schedule. In the context of a challenge to the notice, only those rules which deal with the notice are relevant for this discussion. These rules were first framed by the Lok Sabha Speaker in 1985 and adopted by more or less all the State Legislatures. Rule 6 of the Lok Sabha rules deals with the filing of the petition and the forwarding of the same by the Speaker to the member concerned and related matters. Rule 6 (4) says that before making a petition seeking the disqualification of a member, the petitioner shall satisfy himself that there are reasonable grounds for believing that the member concerned has become subject to disqualification. Thus, the rule requires the petitioner, and not the Speaker, to satisfy himself about the reasonableness of the ground for disqualification. This responsibility is discharged by the petitioner by appending a brief statement to the petition stating clearly that he has so satisfied himself. Rule 7 says that on receipt of the petition, the Speaker shall consider whether the petition complies with the requirements of Rule 6. If he finds that the petition does not meet all the requirements, he shall dismiss it. If it complies with all the requirements, he shall forward the copy of the petition and the annexure to the member concerned and require him to submit his comments within seven days of the receipt of the copy of the petition. This is the so-called show cause notice which has been challenged. The rules do not mention any show cause notice. The Speaker cannot go into the reasonableness of the grounds cited in the petition at this stage because the comments of the respondent, evidence he may submit etc., are not before him. Only through a proper hearing will the Speaker be able to know whether reasonable grounds exist for disqualification. It is thus beyond my imagination how a challenge can be brought against a 'notice' at this stage. It can thus be concluded that the Speaker's act of forwarding the petition cannot be legally challenged as he is acting in accordance with the rules. This point does not seem to have received any attention from the court as otherwise the petition would have been dismissed at the threshold. In *Kihoto Hollohan v. Zachillhu (1992)*, while barring any interlocutory intervention by the court in the Tenth Schedule proceedings, the Supreme Court held that a challenge is not barred if there is an imminent threat of disqualification/ suspension before the Speaker takes a final decision. In the Tenth Schedule proceedings, there is no disqualification/ suspension of a member in the interim period. Therefore, the exception mentioned by the court does not become applicable here. Staying the Speaker's action is unprecedented at the 'notice' stage. It will stymie the operation of the Tenth Schedule because any member can go to court and obtain a stay and put a stop to the proceedings – more so when the court has allowed all the larger issues such as the vires of para 2(1)(a) of the Tenth Schedule to be tagged together, which will take months to be heard and adjudicated upon. It is also puzzling how a High Court can reopen a constitutional issue that was settled long ago by a Constitution Bench of the Supreme Court.

### The Role of Governor Is Questionable

#### → Date of the Assembly Session

The second part of the political drama, about the date of the Assembly session, has just ended, with the Cabinet yielding to the Governor's demand that there should be a 21-day gap between the summoning and commencement of the session. Although the government has

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averted an ugly situation by agreeing to the proposal made by the Governor with regard to the date of the session, it has opened the way to future confrontations between elected State governments and Governors. Summoning the Assembly is a routine constitutional function of the Governor. That this has created a serious confrontation resulting in a constitutional deadlock underscores the need to comprehend the ferocity of adversarial politics and its potential to disrupt normal politico-constitutional operations in the field of governance. As per the normal procedure, once the Cabinet decides to call the session on a particular date, that decision is conveyed to the Governor who signs the summons order and sends it back the same day or the next day. Thereafter, the summons is issued to individual members by the Assembly Secretary. By not agreeing to the date decided by the Cabinet, the Governor has shown that he has the final say. This is fraught with many disturbing possibilities in the relationship between the Governor and the State government. Under Article 174 of the Constitution, the Governor summons the Assembly. But the Governor can act only on the advice of the Council of Ministers. The Cabinet form of government presupposes that the executive power of the state vests in the elected government headed by the Chief Minister. The Governor does not exercise any of the executive powers except where the Constitution assigns him certain functions to be performed in his discretion. Calling the session of the Assembly is a part of the executive functions of the government and the Governor can summon the Assembly only on the advice of the Cabinet. **In Nabam Rebia and Bamang Felix v. Deputy Speaker (2016)**, the Supreme Court reaffirmed this position. The crucial question in Rajasthan is whether the Governor has any discretionary power in the matter of summoning the Assembly. The Governor asked the government to change the date of commencement recommended by the Cabinet and proposed a date after 21 days. Finally, he got the Cabinet to yield to his wishes. The Nabam Rebia case makes it clear that so long as the Chief Minister enjoys majority support in the Assembly, the Governor has no discretionary powers and is bound to accept the decisions of the Cabinet in regard to the date of commencement of the session. The decision to convene the Assembly session is taken by the Cabinet; the Governor has to merely sign the summons order.

The Nabam Rebia judgment was a consequence of then Arunachal Pradesh Governor J.P. Rajkhowa's decision to advance the Assembly session, a move which led to unrest in the State and culminated in President's Rule. The Constitution Bench held Mr. Rajkhowa's decision to be a violation of the Constitution. The judgment led to the restoration of the Congress-led Nabam Tuki government. The judgment said even the Constituent Assembly was wary of extending the Governor's discretion. Though the draft Constitution had vested the Governor with the discretion to summon and dissolve, it was latter omitted by the framers of the Constitution. "It is an accepted principle that in a parliamentary democracy with a responsible form of government, the powers of the Governor as Constitutional or formal head of the State should not be enlarged at the cost of the real executive, viz. the Council of Ministers," it said. The Supreme Court highlighted how Article 163 of the Constitution does not give the Governor a "general discretionary power to act against or without the advice of his Council of Ministers". The court said the Governor's discretionary powers are limited to specified areas like giving assent or withholding/referring a Bill to the President or appointment of a Chief Minister or dismissal of a government which has lost of confidence but refuses to quit, etc. "The area for the exercise of his discretion is limited. Even in this limited area, his [Governor's] choice of action should not be arbitrary or fanciful. It must be a choice dictated by reason, actuated by good faith and tempered by caution," the court said.



Further, the Governor has no role in the conduct of the business of the House, which is done under the control and supervision of the Speaker. Therefore, it is not open to the Governor to ask the government to clarify whether it wants to bring a confidence motion in the House. And what if the Governor does not sign the summons? This question cannot arise where the Constitution and the rule of law are in force. In *Shamsher Singh v. State of Punjab (1974)*, the Supreme Court said: "The Governor has no right to refuse to act on the advice of the Council of Ministries. Such a position is antithetical to the concept of 'responsible government'." The Governor and the Chief Minister should be able to resolve such crisis without damaging the integrity of institutions.

### The 21-Day Period

The last point is about the significance of the 21-day period suggested by the Governor. The Constitution does not provide for this. In 1969, the Rules Committee of the Lok Sabha recommended that the gap between the date of summons and of the commencement of the House should be 21 days. This was thought of as necessary as the collection, collation and scrutiny of information relating to Questions, at different levels of bureaucracy, before it was placed in the House, was a time-consuming job. Although Parliament changed it to 15 days later, many State Legislatures continue with the 21-day period. It is not an inflexible rule, and says "unless the Speaker otherwise decides". This rule is generally followed but it has never constrained governments from convening the House at shorter notice. In fact, the Rajasthan House rule itself provides for a session at shorter notice. If the government feels the urgency, it is well within its power to convene the House at shorter notice. These are well-established constitutional principles and practices. If a Governor overrules the decision of the Cabinet with regard to even the date of convening the Assembly, and a politically helpless government yields, it becomes a precedent, but not an inspiring one. Society needs to debate this seriously. We must know that politics has a way of getting ahead of principles and practices, and establishing its own norms. If our lofty constitutional principles and practices do no longer excite the citizens, but new political norms do, then democracy is in trouble.

→ It is instructive to compare Mr. Mishra's conduct with that of Lalji Tandon, the former Governor of Madhya Pradesh, when similar sabotage brought down the Congress government led by Kamal Nath in March. Mr. Nath had said Congress MLAs were held captive, and the voting could be vitiated, but the Governor declared that the failure to take an immediate floor test would be presumed as a lack of majority. Mr. Mishra wants to ensure that all MLAs are free to move around before a session could take place, though there is no public knowledge of anyone complaining to him being restrained. He requires the government to take into consideration the spread of the novel coronavirus, but in Madhya Pradesh, the reasoning was the opposite – the Governor did not want any delay on account of the pandemic. These arguments of two Governors four months apart in two States certainly appear contradictory, but also partisan in favour of the Bharatiya Janata Party. The BJP's imprint is unmistakable in the crisis in Rajasthan, its denial apart. The Raj Bhavan should not be a tool of the BJP to dislodge and install governments as and when it wants. Mr. Mishra too has a test to pass, of constitutional morality.

### Discretionary Power

Article 163(1) essentially limits any discretionary power of the Governor only to cases where the Constitution expressly specifies that the Governor must act on his own and apply an independent mind. Article 163(1) of the Constitution says that "there shall be a council of



Ministers with the Chief Minister at the head to aid and advise the Governor in the exercise of his functions, except in so far as he is by or under this constitution required to exercise his functions or any of them in his discretion." When the chief minister has lost the support of the House and his strength is debatable, then the Governor need not wait for the advice of the council of ministers to hold a floor test.

**Nabam Rebia judgement the court ruled that** "In ordinary circumstances during the period when the CM and his council of ministers enjoy the confidence of the majority of the House, the power vested with the Governor under Article 174 to summon, prorogue and dissolve the house(s) must be exercised in consonance with the aid and advice of the chief minister and his council of ministers. In the above situation, he is precluded [from taking] an individual call on the issue at his own will, or in his own discretion. Only in a situation where the government in power – on holding of such floor test – is seen to have lost the confidence of the majority, would it be open to the Governor to exercise the powers vested with him under Article 174 at his own, and without any aid and advice," the unanimous judgment in **Nabam Rebia judgement** by the Bench led by then Chief Justice J.S. Khehar held.

### Governor's Role, In Review

→ Rajasthan Governor Kalraj Mishra's refusal to accept the Ashok Gehlot government's recommendation for convening a session of the Assembly, ostensibly to go for a trial of strength to checkmate the rebels led by Sachin Pilot, has once again brought into focus controversial decisions by Governors in formation and dismissal of state governments over the years. Both the Congress and the BJP, when in power at the Centre, have been accused of misusing the office of the Governor for political purposes. And when in Opposition, both have alleged murder of democracy and the Constitution. The role of Governors in imposing President's Rule in states dates as far back as 1959, when the E M S Namboodiripad government in Kerala was dismissed. The role of Governors in toppling one government and installing another is not new either: in 1967, West Bengal Governor Dharma Vira dismissed the Ajoy Mukherjee government and installed a Congress-supported government with P C Ghosh as Chief Minister. Governors have also courted controversy by not inviting the single largest party to form the government.

### 1980s-90s: Congress Years

In August-September 1984, Governor Ram Lal installed minister Nadendla Bhaskara Rao as Chief Minister of Andhra Pradesh when Chief Minister N T Rama Rao was abroad for a heart surgery. The same year, Sikkim Governor Homi Taleyarkhan dismissed the Nar Bahadur Bhandari ministry. Both instances were during the Indira Gandhi regime at the Centre. In 1989, P Venkatasubbaiah's action to dismiss the S R Bommai government triggered a legal battle, which ended up in the landmark Bommai judgement of the Supreme Court of 1994. Bommai faced a rebellion when an MLA K R Molakery defected and claimed the support of 18 MLAs. The Chief Minister told the Governor that his government enjoyed the majority but Bommai was not given the opportunity to prove it in the Assembly. Instead, Venkatasubbaiah recommended imposition of President's Rule, which was accepted by the Rajiv Gandhi government. Bommai was in the Janata Party. In 1988 his party had merged with the Lok Dal, forming the Janata Dal, and new members were inducted into Bommai's Ministry.

### 1990s: United Front

In 1996, Gujarat Governor K P Singh recommended President's rule in the BJP-ruled state. At the Centre was the United Front government headed by H D Deve Gowda. The crisis for the

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Suresh Mehta government began after Shankarsinh Vaghela and 40-odd MLAs rebelled. Mehta proved his majority but the session witnessed a bloody clash between MLAs. Citing breakdown of the constitutional machinery, the Governor recommended Central rule which was accepted. Then came the Romesh Bhandari episode in Uttar Pradesh. In the middle of the 1998 Lok Sabha polls, the Kalyan Singh government wobbled after the 22-member Loktantrik Congress headed by Jagadambika Pal withdrew support. Governor Bhandari dismissed the government a little after 8 pm, invited Pal to form the government and swore him in as Chief Minister at around 10 pm along with 17 ministers. Kalyan Singh approached the court, which reinstated him and ordered a floor test which he won. Pal became known as the one-day Chief Minister.

### 2003–13: UPA Rule

The Bihar Assembly elections in February 2005 threw up a fractured mandate. With no party in a position to form the government, President's rule was imposed in the first week of March. Two months later, the NDA claimed it had the support of 115 MLAs. The JD(U) and the BJP had managed the support of some LJP leaders and independents. Governor Buta Singh alerted the President that this could lead to horse-trading and recommended dissolution of the Assembly on May 21. The Union Cabinet of the UPA met at midnight and faxed the Governor's report to President Abdul Kalam who was in Moscow. Kalam approved the recommendation in two hours and the Assembly was dissolved. The Supreme Court later came down heavily on Buta Singh. In its interim order, it held the dissolution unconstitutional. In its final judgement, it held that the Governor had misled the Centre and pointed out that the Union Council of Ministers should have cross-checked before accepting his recommendation. Singh resigned. The same year saw Jharkhand Governor Syed Sibtey Razi installing JMM's Shibu Soren as Chief Minister overruling the NDA's claims that it had the support of 41 MLAs in the 81-member House after the elections threw a hung Assembly. The BJP was willing to parade the MLAs. Soren resigned without facing a trust vote after nine days in office and BJP's Arjun Munda was sworn in as the next Chief Minister.

### Since 2014: NDA

On March 18, 2016, Congress's Harish Rawat government in Uttarakhand plunged into crisis after nine MLAs joined hands with the BJP, which staked claim to form the government. The next day, met Governor K K Paul asked the Chief Minister to prove his majority by March 28. A day before the trust vote, the Speaker disqualified the nine rebels. The NDA government at the Centre, on the recommendation of the Governor, imposed President's rule the same day without giving Rawat an opportunity to prove his majority. The matter went to court and in April the Uttarakhand High Court quashed imposition of President's Rule and asked Rawat to prove his majority, which he did. In 2017, after Assembly elections in Goa, the Congress emerged the single largest party with 17 seats (out of 40) while the BJP had 13. But Governor Mridula Sinha invited the BJP which had cobbled up a post-poll alliance with some regional parties and independents and formed the Government. In Manipur too, the Congress emerged the single largest party with 28 seats in the 60-member House, but Governor Najma Heptullah invited the BJP first after it submitted a list of legislators supporting it. In the 2018 elections in Karnataka, the BJP emerged the single largest party but fell eight seats short of the halfway mark out of 224. The Congress dramatically announced a post-poll alliance with JD(S) to keep the BJP out. Governor Vajubhai Vala invited BJP's B S Yeddyurappa and gave him 15 days to prove the majority. Yeddyurappa was sworn in on March 17. The Congress rushed to the Supreme Court which curtailed the time given and asked Yeddyurappa to prove





his majority on May 19. Unable to get the numbers, he resigned without taking the floor test. In Maharashtra, the Assembly elections in October last year threw up a hung verdict. With possibilities of formation of a stable government not emerging even 15 days after the results, Governor Bhagat Singh Koshiyari recommended President's rule which was imposed. The Congress, Shiv Sena and the NCP began discussions and came to an understanding on November 22 to stake claim for formation of a government with Shiv Sena chief Uddhav Thackeray as Chief Minister. But it was BJP leader Devendra Fadnavis who Koshiyari swore in as Chief Minister on November 23 at 8 am, with NCP leader Ajit Pawar as his deputy. This came after the President's rule was revoked at 5.47 am that day. The Governor had submitted a report recommending revocation at 12.30 am.

## Staying Away from Political Thickets (Sanjay Hegde - Senior Advocate, Supreme Court of India)

- Former Rajasthan Deputy Chief Minister Sachin Pilot's rebellion against Rajasthan Chief Minister Ashok Gehlot, has crashlanded in the Rajasthan High Court and the Supreme Court of India. Upon Mr. Pilot's invitation in Rajasthan and Rajasthan Assembly Speaker C.P. Joshi's appeal to the Supreme Court, today's judges seem to have rushed in, where their predecessors have feared to tread. There is Constitutional history behind judicial reticence, which is normally expected, in matters involving the working of Parliament and legislatures. This history bears some retelling.

### A Retelling of The Past

Charles Bradlaugh was elected to England's Parliament in 1880. He was an atheist and refused to take oath as a Member of Parliament in the name of god. The format of the parliamentary oath, only provided for swearing in in god's name. The Serjeant of Parliament, one Mr. Gossett, refused to seat Bradlaugh in Parliament without the oath in that form. Bradlaugh appealed to the courts. The courts said they could do nothing. In Bradlaugh vs Gossett (1884), a court held the 'decision of the House of Commons in resolving not to allow an elected Member, Bradlaugh, to take the oath, and the actions of the Serjeant at Arms in preventing Bradlaugh from entering the House, were subject to the sole jurisdiction of the House'. In India, one Keshav Singh was sentenced to a week's imprisonment in 1964 for breach of privilege of the Uttar Pradesh Legislative Assembly. Subsequently, a petition filed by him was listed before the Lucknow Bench of the Allahabad High Court. When the case was called out, the government advocate was not present. The petition was admitted, and as the sentence was only one week, Singh was directed to be released on bail during the pendency of the case. The Assembly took umbrage to this. The order of stay passed by the Bench of two judges was regarded as a breach of their privilege. Soon thereafter, the assembly made an order directing the Marshal of the Assembly to arrest the two judges and produce them before the Bar of the House. These judges approached the full Bench of the Allahabad High Court, which protected them from arrest. According to Shanti Bhushan's recollections, Justice Nasirullah Beg, who had been ordered to be arrested and confined by the marshals of the U.P. Legislative Assembly, was waiting with a loaded gun, ready to shoot down the marshals and protect the honour of the Allahabad High Court.

### Hands-Off Approach

At this stage, the President of India made a presidential reference to the Supreme Court on the relative powers of legislative assemblies and constitutional courts. The Supreme Court,



answering the reference, held that there is a broad separation of essential powers of each organ of the State. However, the Court went on to hold that a judge who entertains a petition challenging any order of the legislature imposing any penalty on the petitioner for its contempt "...does not commit contempt of the said legislature and the legislature is not competent to initiate proceedings against that judge". Ever since, it has generally been a "hands-off" position as far as the courts interfering in the workings of legislative assemblies or Parliament is concerned. The sole exception is under the anti-defection law – after a final order of disqualification has been passed. This is because, a Constitution bench of the Supreme Court in Kihoto Hollohan's case in 1992 held that the Speaker acting in a disqualification matter acts as a tribunal and is subject to judicial review. However, the same judgment makes it clear that the Court will not intervene at an interim stage. The majority very clearly held: "Having regard to the constitutional scheme in the Tenth Schedule, judicial review should not cover any stage prior to the making of a decision by the Speakers/Chairmen; and no quia timet actions are permissible." The same judgment further holds: "The Speakers/Chairmen hold a pivotal position in the scheme of Parliamentary democracy and are guardians of the rights and privileges of the House. They are expected to and do take far reaching decisions in a Parliamentary democracy." When the Sachin Pilot episode is considered against this constitutional backdrop, it is clear that a mere issuance of a possible disqualification notice by the Speaker, has been contested in constitutional courts, which have not rejected the challenge at the threshold. Even in routine petitions against notices of proposed administrative actions, courts are reluctant to review at an interim stage. Almost invariably, the petitioner is told to answer the show cause notice and to challenge the final action only. The Rajasthan High Court however entertained a petition on behalf of 19 MLAs who having ensconced themselves in a resort in a neighbouring State, proceeded to challenge the Speaker's authority to decide, if they had committed an act of defection. Arguments at length were addressed, almost as though the limitations of the Constitution Bench judgment in Kihoto Hollohan, had ceased to apply to this case. The Speaker chose to appear before the High Court and argued the merits of the matter, though he could have at a preliminary stage, challenged the court's jurisdiction to intervene at an interim stage. The Rajasthan High Court reserved its judgment, requested the Speaker to defer further proceedings and proceeded to direct him to await judgment.

### A Co-Equal

The High Court's direction to the Speaker, led to him moving the Supreme Court, questioning the court's power to direct a Constitutional authority. The principle of law being urged is that Constitutional authorities cannot issue directions to each other. They can, at best, make a polite request. In 1982, a Bench of the Supreme Court, directed a single judge of the Calcutta High Court to urgently hear a matter and proceed to judgment (A.K.M. Hassamanuzaman & Ors. v. Union Of India & Ors). The single judge in Calcutta, Justice Sabyasachi Mukherjee (later, Chief Justice of India) proceeded to hear and decide the matter. He however recorded in his judgment that the Supreme Court was only co-equal with the High Court, as a Constitutional Court. Appellate powers of the Supreme Court did not make it a superior authority to which the High Court was subordinate. Ever since, the Supreme Court has been careful to couch its orders as requests to any High Court, or Constitutional authority. Constitutional courts have followed the same principle, in addressing other Constitutional authorities. The Speaker of a House of legislature or Parliament, represents that august body and is the guardian of its privileges. The House cannot be ordered around in its internal working, by any court, no matter how high or supremely infallible it perceives itself to be. Unnecessary conflict between organs of state may well invite some Speaker, backed by a



solid majority at State and Centre, to defy the courts, when it comes to the internal working of the House of Parliament or legislature.

### The Last Word

Courts are apolitical but keep getting pulled into political thickets, especially in matters of mass defections resulting in regime change. They must therefore be very chary of being turned into a third house of Parliament or legislature. The walls of separation between constitutional organs, once breached, cannot be then repaired against future intrusions. Even under a sovereign Constitution, parliamentary and legislative supremacy in their spheres of functioning should be respected. The Supreme Court permitted the Rajasthan High Court to proceed to judgment on July 24, but directed that its orders would not be implemented, as the Supreme Court itself proposed to rule on the larger question of the jurisdiction of courts to entertain such pleas. The Rajasthan High Court has thereafter decided to await the Supreme Court judgment and in the meanwhile injuncted the Speaker from proceeding further. The legal back and forth has in effect granted the insurgent faction, precious time to consolidate their plans of regime change. Mr Gehlot has now, correctly called for an immediate summoning of the Rajasthan Assembly, to prove his majority on the floor of the house. Political questions must be answered in political forums and not be confined to quibbling in courts. The Court must be mindful of Portia's warning in The Merchant of Venice: "Twill be recorded for a precedent. And many an error by the same example/Will rush into the state. It cannot be.

### How BSP Is Banking on SC Rulings to Hold Back Former MLAs

- The BSP is gearing up for a legal battle of its own in the Rajasthan political drama around Congress Chief Minister Ashok Gehlot's claim to power. The BSP is trying to win back its six MLAs who later joined the Congress, or at least to keep them from supporting Gehlot. Does the anti-defection law apply here?

### What Explains the BSP Stand?

The BSP won six seats in Rajasthan but all its MLAs – Rajendrasingh Gudha, Lakhn Singh, Deep Chand, Joginder Singh Awana, Sandeep Kumar and Wajib Ali – joined the Congress in September last year. Politically, the BSP has taken a stand not to support the Gehlot government. If the six MLAs were to be disqualified, the effective strength of the House reduces and so does Gehlot's majority. However, the Speaker has rejected the disqualification plea.

### What Does The "Merger" Of BSP With Congress Mean?

The Tenth Schedule of the Constitution prohibits defection to protect the stability of governments but does not prohibit mergers. Paragraph 4(2) of the Tenth Schedule, dealing with mergers, says that only when two-thirds of the members agree to "merge" the party would they be exempt from disqualification. The "merger" referred to in Paragraph 4(2) is seen as legal fiction, where members are deemed to have merged for the purposes of being exempt from disqualification, rather than a merger in the true sense.

### How Does the Central BSP Leadership View the Merger in Rajasthan?

The BSP is arguing that a state unit of a national party cannot be merged without the party being merged at the national level. However, the Tenth Schedule identifies this dichotomy



between state units and national units. As per Paragraph 4(2), “merger” of a party means merger of a legislative party of that House. In this case, it would be the Rajasthan Legislative unit of the BSP and not the BSP at the national level. Paragraph 1 of the Tenth Schedule which defines terms specified in the context of the anti-defection law states this clearly. “Legislature Party” for the purposes of Paragraph 4 (which deals with mergers) “means the group consisting of all the members of that House for the time being belonging to that political party in accordance with the said provisions.” Additionally, the whip issued by BSP national general secretary Satish Mishra to the six MLAs would have no impact because such a direction has to necessarily be issued for voting on the floor of the House. Every legislative party identifies the party’s whip at the beginning of the Assembly’s term and conveys this to the Speaker. A national leader’s direction cannot be considered a whip in the context of the anti-defection law.

### On What Grounds Is BSP’s Case Based?

The BSP’s contention is that the merger is illegal and unconstitutional because for a national party, such merger has to take place at the national level. Supporting this argument, Satish Mishra has cited two decisions of the Supreme Court: a three-judge 2006 bench ruling in Jagjit Singh v State of Haryana, and a five-judge bench 2007 ruling in Rajendra Singh Rana and Others vs Swami Prasad Maurya. The first decision relates to four legislators from single-member parties in the Haryana Assembly, who said their parties had split and later joined the Congress. The court upheld the Speaker’s decisions disqualifying them. The second decision, involving the BSP itself and the Samajwadi Party, also deals with “split”. In the 2002 Uttar Pradesh elections, 37 MLAs – one-third of the BSP strength – “split” from the party after its government fell, to support SP. The SC ruled that the split cannot be recognised primarily because not all these MLAs split at once. The key aspect is that these cases deal with splits where when one-third of the members of a legislative party splits; they could not attract disqualification as per Paragraph 3 of the Tenth Schedule. In 2003, through the 91st Constitutional Amendment, Paragraph 3 was deleted from the Tenth Schedule. The amendment was made as the one-third split rule was grossly misused by parties to engineer divisions and indulge in horse-trading. One-third was regarded as an easy target to achieve and the law now exempts defection only when it is at two-thirds (in a merger).

### Are There Any Such Precedents?

In July 2019, 10 of the 15 Congress MLAs in Goa joined the BJP taking the ruling party’s tally to 27 in the 40 member House. Since they formed two-thirds of the strength of the legislative party unit, they are exempt from disqualification. However, the Speaker’s decision not to disqualify them is under challenge before the Supreme Court. In June last year, Vice President Venkaiah Naidu issued orders to “merge” the TDP with the ruling BJP in Rajya Sabha after four of its five MPs defected. Although TDP still has a presence in the Upper House through its lone MP, the party was deemed to have merged only for the purpose of not attracting penalty under the Tenth Schedule for the four MPs who defected. The TDP, too, raised arguments similar to what BSP is now claiming that a “merger” can only take place at an organisational level of the party and not in the House. In 2016, two years after the TDP won 15 seats in the Telangana elections, 12 of its MLAs joined the ruling TRS. The Speaker recognised the defection as a merger since more than two-thirds had moved.





## What Is Plea Bargaining and How Does It Work?

➔ Many members of the Tablighi Jamaat belonging to different countries have obtained release from court cases in recent days by means of plea bargaining. Accused of violating visa conditions by attending a religious congregation in Delhi, these foreign nationals have walked free after pleading guilty to minor offences and paying the fines imposed by the court. These cases have brought the focus on plea bargaining as a practice by which time consuming trials can be avoided. Even though plea bargaining is available to those accused of criminal offences in India for over a decade, it is not yet common.

### When Was It Introduced in India?

Plea bargaining refers to a person charged with a criminal offence negotiating with the prosecution for a lesser punishment than what is provided in law by pleading guilty to a less serious offence. It is common in the United States, and has been a successful method of avoiding protracted and complicated trials. As a result, conviction rates are significantly high there. It primarily involves pre-trial negotiations between the accused and the prosecutor. It may involve bargaining on the charge or in the quantum of sentence. In India, the concept was not part of law until 2006. There has always been a provision in the Code of Criminal Procedure for an accused to plead 'guilty' instead of claiming the right to a full trial, but it is not the same as plea bargaining. The Law Commission of India, in its 142nd Report, mooted the idea of "concessional treatment" of those who plead guilty on their own volition, but was careful to underscore that it would not involve any plea bargaining or "haggling" with the prosecution. Plea bargaining was introduced in 2006 as part of a set of amendments to the CrPC as Chapter XXI-A, containing Sections 265A to 265L.

### In What Circumstances Is It Allowed? How Does It Work?

Unlike in the U.S. and other countries, where the prosecutor plays a key role in bargaining with the suspected offender, the Indian code makes plea bargaining a process that can be initiated only by the accused; further, the accused will have to apply to the court for invoking the benefit of bargaining. Cases for which the practice is allowed are limited. Only someone who has been charge sheeted for an offence that does not attract the death sentence, life sentence or a prison term above seven years can make use of the scheme under Chapter XXI-A. It is also applicable to private complaints of which a criminal court has taken cognisance. Other categories of cases that cannot be disposed through plea bargaining are those that involve offences affecting the "socio-economic conditions" of the country, or committed against a woman or a child below the age of 14. The applicant should approach the court with a petition and affidavit stating that it is a voluntary preference and that he has understood the nature and extent of punishment provided in law for the offence. The court would then issue notice to the prosecutor and the complainant or victim, if any, for a hearing. The voluntary nature of the application must be ascertained by the judge in an in-camera hearing at which the other side should not be present. Thereafter, the court may permit the prosecutor, the investigating officer and the victim to hold a meeting for a "satisfactory disposition of the case". The outcome may involve payment of compensation and other expenses to the victim by the accused. Once mutual satisfaction is reached, the court shall formalise the arrangement by way of a report signed by all the parties and the presiding officer. The accused may be sentenced to a prison term that is half the minimum period fixed for the offence. If there is no minimum term prescribed, the sentence should run up to one-fourth of the maximum sentence stipulated in law.



### What Is the Rationale for The Scheme? What Are Its Benefits?

The Justice **Malimath Committee** on reforms of the criminal justice system endorsed the various recommendations of the Law Commission with regard to plea bargaining. Some of the advantages it culled out from earlier reports are that **the practice would ensure speedy trial, end uncertainty over the outcome of criminal cases, save litigation costs and relieve the parties of anxiety.** It would also have a dramatic impact on conviction rates. Prolonged incarceration of undertrials without any progress in the case for years and overcrowding of prisons were also other factors that may be cited in support of reducing pendency of cases and decongesting prisons through plea bargaining. Moreover, it may help offenders make a fresh start in life.

### Do Courts Have Reservations?

Case law after the introduction of plea bargaining has not developed much as the provision is possibly not used adequately. However, earlier judgments of various courts in cases in which the accused enter a 'guilty' plea with a view to getting lesser sentences indicate that the judiciary may have reservations. Some verdicts disapprove of bargaining with offenders, and point out that lenient sentences could be considered as part of the circumstances of the case after a regular trial. **Courts are also very particular about the voluntary nature of the exercise, as poverty, ignorance and prosecution pressure should not lead to someone pleading guilty of offences that may not have been committed.**

### No Postal Ballot for Those Above 65 Due to Logistics

- ➔ With more than 70 lakh electors above 65 years of age, the Election Commission has decided against extending postal ballots to them in the upcoming Bihar Assembly election due to the logistical challenges posed, an EC source said. The EC had recommended extending the postal ballot facility to electors over 65 years as the age group had been termed most vulnerable to COVID-19. The Law Ministry notified the change to the Conduct of Election Rules, 1961 on June 19, extending the facility to electors above 65 years, as opposed to the existing provision for above 80 years. However, on July 16, the EC announced that it would not be extending the facility to electors of age 65 and above due to logistical, staff and safety protocol-related constraints. The source said that while reviewing the preparations for the poll, the EC decided that it would not be possible to arrange the facility for about 72 lakh electors, about **10% of the total 7.19 crore voters** in the State. The source said the facility for this category of electors is not the conventional postal service. The system works as a polling station on the move, with the polling staff visiting the homes of senior citizens.

### Big Reform on The Wrong Track (T. Stanley Babu, I.P.S. Anand And V. Carmelus Are Former Senior Indian Railway Officers)

- ➔ The Indian Railways is the lifeline of India. With its vast network across the length and breadth of India, it is not just a mere transporter of passengers and goods but also a social welfare organisation. While the addition of more trains with high technology coaches to meet passenger expectations is a welcome feature, it is the way of privatising these trains that is the problem. The Railway Board says the "objective of the initiative was to introduce modern technology rolling stock with reduced maintenance, reduced transit time, boost job creation, provide enhanced safety, provide world class travel experience to passengers, and also reduce demand supply deficit in the passenger transportation sector". But this is a step which

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will lead to dual control and split responsibility, resulting in higher fares, depriving the common man of travel by these trains, and repercussions in terms of maintenance and operations. The United Kingdom and Japan have privatised their rail systems completely and not partially, but most countries have retained their rail networks for public convenience. In India, the selection of private parties using the tendering process is now under way and proposes two-stage competitive bidding. While short listing will be based on financial capacity (with sharing of gross revenue), the selected parties can fix fares by themselves. These parties have to pay fixed haulage charges, energy charges based on actual consumption, and a share in gross revenue through the bidding process. The main criterion is procurement of coaches by the concessionaire and form them into rakes of 16 coaches each, with maintenance at 10 major stations from where the trains will operate to their destinations. For maintenance, existing depots and yard facilities at different stations will be made use of. But this will result in conflict as it is a daily exercise. Only where adequate facilities are not available, the concessionaire has to invest in creating the required facilities. The project entails a total investment of ₹30,000 crore by private enterprises. The cost of investment at each of those stations varies from ₹2,300 crore to ₹3,500 crore.

### Fixing Responsibility

According to the project information memorandum issued by the Railway Board, railway crew will work the trains (151 trains in 109 routes) which will be maintained by the private investor. All the other infrastructure (track and associated structures, stations, signalling, security and their daily maintenance) owned by the Railways will be fully utilised in running trains. Thus, the responsibility of the private investor ends with investment in the procurement and maintenance of coaches. Train operation, safety and dealing with everyday problems rests with the Railways. **In case of an unfortunate event, how do we fix responsibility when the coaches are owned by the investor but operated by the Railways and its staff?** Provision of an independent regulator to resolve disagreement, discords and disputes will not solve day-to-day problems of dichotomy unless the basic issue is resolved. Coaches in India are not of international standard (ICF Design – 1955 Swiss design or LHB Design (German 2000 design). **At the time of introduction, these technologies were 20 years old. There have been sea changes in coach designs and the Indian Railways should go in for state-of-the-art coach designs using 'transfer of technology (ToT) with world leaders. Our coach building units are capable of building such train sets with ToT.**

### Speed and Changes

While raising the maximum running speed to 160 kmph is welcome measure, accomplishing this in the timeframe given will be difficult. Nearly all trunk routes in the existing network are speed limited to 110 kmph (maximum speed); very few permit speeds of up to 120-130 kmph. To raise it to 160 kmph, as proposed, there has to be track strengthening, elimination of curves and level crossing gates and strengthening of bridges. It also calls for track fencing especially in densely populated areas. Also, from the timings for different trains given by the Railway Board there is no appreciable reduction in transit time for most trains when compared with the timings of the fastest train now operating on that route. This requires a critical review. It is surprising to note in the proposal that the Railways or government have no role in fixing passenger fares. This is an unacceptable situation. On the contrary, full liberty is being given to the concessionaire to unilaterally fix fares for these proposed trains that are on a par with air and airconditioned bus fares. It will be beyond the common man's reach. Fare concessions extended to several categories of people will not be made available by the



private investor. The very objective of commissioning the Railways as a public welfare transport organisation is defeated. In the private sector, operations are run with an eye on staff costs which can endanger safety. **Also, the private investor is not bound to follow reservation regulations in employment, in turn depriving employment opportunities for those who are on the margins of society.** In this context, the message of the then Prime Minister, after Independence, and at the time of the inauguration of the Central and Western Railways is apt: "The Railways are and will continue to be our greatest national undertaking. They deal intimately with scores of millions of people in the country and have to look after their comfort and convenience. They deal also with a very large number of employees whose welfare should always should be their concern." There should be no need for the government to take a dual role of a facilitator as well as a participant. In the case of the metro railway services (Hyderabad, for example), an ideal PPP project, the concessionaire is solely responsible for daily maintenance, operation, passenger amenities and staff issues. The State government steps in when it comes to land, power, permissions, law and order, etc. Fare determination is in consultation with the government.

### Think IRCTC

Instead of a private entrepreneur, who would be new to the job, why not entrust this to the Indian Railway Catering and Tourism Corporation, a government undertaking which has gained experience in running the Tejas Express trains? There will be 'unity of command' in maintenance, operation and passenger services under the single administration of the Railways and its undertaking. As per the Eligibility Conditions specified in "Request for Qualification (RFQ)" Para[graph] 2.2.1(b), Public Undertakings such as the IRCTC are eligible to participate in tendering for this project. Para[graph] 2.2.3 stipulates operation & maintenance experience in maintaining rolling stock. The IRCTC is well-suited for this role. When the government of India is prepared to invest over a lakh-crore rupee to introduce the Bullet train on a single sector and which would cater to the elite, why not invest in the IRCTC, a government undertaking, in the new project, which will serve crores of people across the country? This project of privatisation of trains should not result in the common man being deprived of travel facilities. We wish to reiterate that the Indian Railways is a strategic resource for the nation and provides a vital public good. Hence, it should not be judged solely on its profit-generating capability or market-based return on investment.

### Set Up a High Court for Puducherry (Nirmalkumar Mohandoss - Advocate Practising at the Madras High Court)

- ➔ In 1962, when Puducherry was merged with India, the jurisdiction of the Madras High Court was extended to it. After several decades, in 2017, the Puducherry legislature unanimously resolved to have its own High Court, and the Madras High Court was informed on July 7, 2017. Prior to this, in April 2017, the Pondicherry Bar Association also passed a resolution seeking establishment of the High Court. In August 2019, while addressing a State-level conference on legal services and Motor Accident Mediation Cells, Puducherry Chief Minister V. Narayanasamy said that "a Bench of the Madras High Court at Puducherry on the lines of the one set up in Madurai" was a felt need and sought the support of judges of the Supreme Court.





## Sound Reasons

So, why should there be the need for a High Court at Puducherry? The Puducherry government spends exorbitant sums of money towards expenses of the large High Court. With not much of a population, this amount can be reduced to less than a quarter of the amount spent with a much smaller High Court for Puducherry. In fact, according to the Constitution, when a common High Court is established for more than one State, administrative expenses have to be paid only from the consolidated fund of the 'State' in which the principal seat of the High Court is situated. However, this provision is breached with respect to Puducherry which shares the disproportionately exorbitant expenses with Tamil Nadu. On the other hand, administrative expenses of a High Court at the Union Territory shall be drawn from the 'Consolidated fund of India' under the Constitution. A Puducherry High Court, with four to five judges, can ensure quick action on pendency of matters of the High Court matters, at least at Puducherry. In the All India Judges Association And Others vs Union Of India (Uoi) And Ors., the Supreme Court observed that the "time has now come for protecting one of the pillars of the Constitution, namely, the judicial system, by directing increase, in the first instance, in the Judge strength from the existing ratio of 10.5 or 13 per 10 lakhs people to 50 Judges for 10 lakh people". This was also discussed in the Law Commission of India Report titled 'Arrears and Backlog: Creating Additional Judicial (wo)manpower', in 2014. However as of 2016, the ratio is only 12 judges for one million population. This ratio at Puducherry can be increased if a separate High Court with four to five judges is established.

## A Data Comparison

The presence of the Constitutional Court in the capital city acts as a check on the executive and legislature. Even the exercise of safeguarding fundamental rights involves travel, time and expenses. Several people often cite that litigants from western districts travel the long distance to Chennai. It defies logic why litigants from Puducherry need not be benefitted merely because other litigants are not benefitted, especially when the Constitution permits Puducherry to have its own High Court under Article 241.

## Aiding Statehood Demand

A High Court for Puducherry will also strengthen voices seeking Statehood. The Constitution enabled establishment of a legislature and Council of Ministers for certain Union Territories with the intent of providing them Statehood gradually. Out of the seven Union Territories originally placed under Article 239A, all except Puducherry were granted Statehood by 1989. Most Union Territories under 239A at least had Benches of High Courts when they attained Statehood. Tripura, Manipur, Meghalaya had Benches of the Gauhati High Court before they got their own High Courts. Interestingly, the Delhi High Court was established in 1966 before Delhi got its legislature in 1993. Even a Bench of the Madras High Court as against a separate High Court at Puducherry is unfavourable because: Puducherry will still have to share the expenses of such a large High Court; judges might not prefer shuttling between Benches at Chennai, Puducherry and Madurai frequently; the protests against the setting up of the Madurai Bench a decade ago should be borne in mind. In fact, the presidential order establishing the Bench was challenged before the Madras High Court in 2004, just before commissioning the work; demand for a Bench of the High Court has always been met with stiff resistance from the Bar practising in the Court having jurisdiction.



## On the Loose

→ West Bengal Governor Jagdeep Dhankhar remains in the spotlight, and there is every reason to believe that he wants it that way. On Monday, he met Home Minister Amit Shah with a litany of complaints against the Mamata Banerjee government, apprising him of the “alarming cliff-edge governance situation in the State”. Before the meeting, he had said it was “part of his duty to preserve, protect and defend the Constitution,” under Article 159. Indeed, the Governor has a constitutional role to perform, but Mr. Dhankhar appears enthusiastic to stretch his mandate all the time. During the meeting, he briefed the Home Minister on the State’s “rampant corruption and nepotism”, “alarming COVID-19 situation” and “worrisome and dangerously deteriorating law and order situation”. This is an overreach of authority, done without finesse. Besides his incessant war of nerves with Ms. Banerjee, Mr. Dhankhar has ended up in confrontations with vice chancellors, students and Trinamool Congress leaders, during his one-year tenure. He has also shown a proclivity to be unrestrained in media interactions, including his frequent Twitter posts. He must remember that he is not an Opposition politician in West Bengal. His opinions on the State government, and interactions with it, must be circumscribed by well-established precedents, and should draw strength from the Constitution he repeatedly calls to his defence.

No doubt, there are concerns regarding governance in the State. Ms. Banerjee is a combative politician but her administrative talents have not matched up to the crisis of the pandemic. West Bengal has been slow in its responses. Political violence, gruesome crimes, and allegations of police partisanship require the Chief Minister’s personal attention. But all this cannot be an excuse for the Governor to randomly offer his opinions publicly. His behaviour cannot be seen delinked from the BJP’s obsession of winning West Bengal, which goes to the polls in less than a year. The battle of 2021 will be fiercely fought, and if the past is anything to go by, potentially ugly too. The CBI and even the Election Commission, which is an autonomous constitutional body, have to remain above the political fray. Governors have come to assist the BJP in other States too – in upending the constitutional status of J&K and in swearing in a government of the party in Maharashtra, completely disregarding norms last year, for instance. It is possible that Mr. Dhankhar is trying to be more loyal than the king, but the pattern of interference by the Centre in the affairs of States raises other legitimate concerns. He must therefore roll back his rhetoric; and the Prime Minister and the Home Minister must nudge him to stay within his constitutionally circumscribed functions.

## Rule of Mob

→ The lynching of three people, alleged cattle thieves suspected to be Bangladeshi nationals, in southern Assam’s Karimganj district on July 18 was the second such disturbing incident in recent weeks in the area. On June 1, a 43-year-old Bangladeshi national was lynched in Putni Tea Estate situated about 3 km from the India-Bangladesh border. According to reports, the district police are trying to hand over the bodies to the Bangladeshi authorities. Irrespective of whether they are thieves or smugglers, such killings point to a lack of faith in the rule of law, leading to a general lawlessness. According to the National Crime Records Bureau’s 2017 data which was released in October 2019 a year behind schedule, Assam has one of the highest crime rates in the country. The State had 143 registered crimes per lakh of population, but such numbers can often be misleading due to the arbitrariness in the registration of crimes. The varying standards of prosecution of crimes across the country add further challenges to the rule of law. Anecdotal trends suggest a spike in mob lynchings



in recent years, often incited by malicious dissemination of false accusations of cow slaughter, kidnapping of children and theft, through social media.

The NCRB did collect data on lynchings in 2017 but did not publish those for reasons best known to it. In 2019 there was also a controversy over the usage of the word 'lynching', after RSS chief Mohan Bhagwat termed it as an attempt to defame India. Wild conspiracy theories spread fast on social media, but one cannot overlook the context of polarising diatribes, often initiated by political leaders, related to cow protection, movement of people across the border and religious issues. The victims are invariably from vulnerable groups. Whatever name one calls it by, lynchings are an abomination that must have no place in a democratic society, which India prides itself to be. Lynchings are a uniquely unsettling derailment of governance – while an act of mob violence is itself a sign of failure of law enforcement, it is committed in an apparent consideration that there can be no legal recourse. In a pathological subversion of principles, the police inaction in cases of mob violence is reciprocated by an apparent public sanction of extrajudicial punishments by the police. All this bodes ill for the country. Mob violence indeed defames the country and there must be stringent intervention by the police to bring an end to this. The political leadership also has a role to play in questioning the social consent that allows mob violence.

### The Fusion of The Divine and The Dynastic

→ In 1817 the British agent in Travancore reported to his bosses an anxiety the royal house entertained about some of its subjects. The incumbent Rani wished to visit some northern districts but was informed that people in these parts held "feelings of resentment and hostility against the reigning family". As Colonel Munro explained, this hatred for the dynasty ruling from Thiruvananthapuram apparently stemmed from the fact that these lands were conquered only a few decades before, after which they were long held "by the most cruel and rigorous exercise of despotic power". As it happened, then, he escorted the Rani on her tour to the area, finding in the process, however, that her fears were overstated: people flocked to see the royals, revealing, he wrote, an "attachment, zeal, and devotion, bordering upon idolatry". While Munro tried to spin this as a consequence of the state's alliance with the British, in reality the Rani owed her near-divine status to a shrewd ancestor. Martanda Varma, heir to a political backwater in what is now Tamil Nadu's Kanniyakumari district, had in the 18th century birthed Travancore in fire and blood: dozens of noble houses were destroyed, princely lines were toppled, and conquest upon conquest made. Aiding him were mercenaries, bribery, a Dutch commander, and English arms. But while he was a sharp strategist, Varma was denied legitimacy in subjugated territories. Many were surprised when he conquered even a state under Brahmin rule – given Hindu soldiers' refusal to fight here, Varma carted in Muslims and Christians. Elsewhere, as his men seized temple property, local priests beat them with brooms. So, having forged Travancore and become ruler of south Kerala, the Rajah decided to secure legitimacy. And for this, the Padmanabhaswamy temple was critical. As a site of worship, it is over 1,000 years old, with origin myths featuring a Dalit woman, a sage, and a divine child. While the area's rulers were always wedded to the temple, its present splendour is chiefly Martanda Varma's legacy: the Tamil-style gopuram, the magnificent stone corridor, and even the image of the deity, made of 12,008 salagramas, replacing the old wooden idol, were installed by this Rajah, employing thousands of sculptors and masons. Famously, 20 years into his reign, Martanda Varma also performed the trippadidanam, by which, placing his sword before the shrine, he pledged all his conquests and his person to the deity within. While this "surrendering" of his possessions may have been a spiritual moment, as the official tale goes, it was also wedded to political goals. By



making god his state's owner, the parvenu prince – seen as an invader, a usurper, a breaker of norms, and a man of ruthless ambition – became 'Padmanabha Dasa', god's humble servant. Everything was shielded by the deity's aura now. Festivals were inaugurated, patronage of Brahmins reached unprecedented levels, and his family obtained a caste upgrade, slowly coming to occupy a place next to divinity. As a court historian wrote, Varma "strengthened the position of his heirs" in a "religious" sense; a "sacred regard" was constructed, making the ruler akin to "the Pope in Rome". Why, even to "speak ill" of the ruler became, as the Travancore State Manual put it, equivalent to "blaspheming the deity".

### Standard Pattern

This fusing of the religious with the political, the divine with the dynastic, was in many ways a standard pattern for Hindu kingship – its romanticising in Travancore, however, expunges the historical circumstances that caused the royal family to ceremoniously broadcast its bond with Padmanabhaswamy. In the 19th century, as sovereign power slipped into the hands of the British (unsurprising, given that Varma, on his deathbed, while advising his heirs to preserve the temple also asked them to stay close to the East India Company), ritual sovereignty compensated for that loss. Swathi Tirunal, the composer king, made massive donations to the temple, for example, boxed in as he was by the British who leeches real authority. Subsequent rulers also, several of whom led controversial lives (like many Popes), nevertheless, remained devoted to the temple, which was also a source of prestige. While in Varma's day, his family came to possess unilateral power over the shrine by cutting to size its council and disbanding the ring of nobles in control, the merger of Travancore with the Indian Union meant new arrangements were made. The government of India recognised the ruler's right in the temple, and till his death in 1991, the last king, Balarama Varma, was at the helm. His brother held the reins till his own demise in 2013, during which time, however, legal challenges emerged. Indeed, while the recent Supreme Court judgement has been spun as a "victory" for the ex-royals, it actually shows the triumph of compromise: the original claim that the temple was a "private" one was modified to acknowledge it as a public institution; the right to unilateral control made way for administration by a committee featuring outsiders. In some ways then, while Martanda Varma rendered toothless the council that governed the temple till the 18th century, the court's acceptance of the committee formula by the man's 21st century descendants, is history coming a full circle. The ex-royals will be supreme in ceremonial matters while Padmanabhaswamy's everyday interests will be guided by a group of five: the head priest, a nominee from Delhi, a Kerala government representative, a person nominated by the titular Rajah, and the district judge. For extraordinary expenses, physical alterations, and changes in "fundamental" practices, the Rajah is supreme, but routine power resides with the committee. As the verdict observes, this is "quite balanced", allowing both tradition as instituted by Varma to continue, while ensuring checks and balances will replace what used to be singular control.

### Elephant in The Room

There is, however, an elephant in the room: succession. The court has upheld the matrilineal or marumakkathayam system of succession to temple trusteeship. While this is described generally as succession from maternal uncle to nephew, it is more complex. As is the practice with the Zamorin Rajah's family, the ex-royals of Cochin, and even ordinary matrilineal families, the eldest male born in the female line, taking all branches of a house together, becomes the head. In Travancore, this means lineal heirs of the last Senior Maharani, Sethu Lakshmi Bayi, and Junior Maharani, Sethu Parvathi Bayi. The latter had two sons, the older of





whom was the last ruler, the other the man who died in 2013. Her grandson, born in 1949, is the current head. But next in seniority are males born in the 1950s, from the branch of the Senior Maharani (which holds 30 of the 37 total members of the family). This was a woman whose life proved such a nightmare in Thiruvananthapuram that she exiled herself to Bangalore after Independence and died in obscurity there; despite having herself once ruled the state, the recognition she received was such that in 1949, VP Menon's team, during the integration of the state, found the last ruler behaving as though the Senior Maharani did not even exist. Even the home she built and raised her children in was deemed the property of the Junior Maharani's son. While marumakkathayam grants Sethu Lakshmi Bayi's descendants a claim to future trusteeship, whether this will open up fresh complications, given this troubled history, will need to be seen. One branch, by possession of seniority in age of its males, has controlled the temple for nearly a century now; the approaching turn of the other may spark off new dynamics in Padmanabhaswamy's house.

### Justice, Slow but Sure

→ It is not often that policemen involved in shooting people dead and seeking to cover up the incident as an armed encounter are convicted for murder. **The verdict of the Sessions Court in Mathura sentencing 11 police personnel, including a DSP, to life for murdering Raja Man Singh, the head of the princely state of Bharatpur in Rajasthan, and two of his associates, in 1985, is one such rare instance.** While welcoming this rare blow for accountability and justice, it is inevitable that one must lament the tardiness of the criminal justice system. Even accounting for the usual or expected delay in prosecuting police personnel, **the 35 years that it took for the case to complete** the trial stage is further evidence that justice moves in slow motion in this country. There are several long-delayed trials that spanned generations. **The trial of the men who assassinated Railway Minister L.N. Mishra in January 1975 ended in conviction in 2014, a good 39 years later. The Hashimpura case, in which nearly 40 Muslims were massacred in 1987, ended with an en masse acquittal in 2015, but the Delhi High Court restored some faith in the judicial process by slapping lifelong prison terms on 16 men three years later.** While convictions in heinous crimes ought to be welcomed regardless of the long delay, those administering criminal law will have to explain how far finding old and infirm people guilty after letting them enjoy decades of impunity really serves the cause of justice. Fortunately, the delay did not affect the outcome in this case, but it does not mean there is no truth in the old axiom that delay amounts to denial of justice.

**The election-time murder of Raja Man Singh at Deeg on February 21, 1985, was initially sought to be passed off as an 'encounter'.** The Congress was ruling Rajasthan then. Dushyant Singh, the deceased's grandson, said that Man Singh, who was the third son of Maharaja Krishn of Bharatpur, was first elected as an MLA from Rajasthan in 1952 and was undefeated till his death. He even resisted the waves of 1977 (Indira Gandhi) and 1980 (Janata Party) to win as an Independent. In the 1985 Assembly poll, the Congress fielded Brijendra Singh, a retired IAS officer, against Man Singh from the Deeg seat. During the campaign, an irate Man Singh drove his jeep into the stage and the chopper, reacting to some Congress workers insulting the Bharatpur flag, said Mr. Dushyant Singh. "On February 21, 1985, Raja Man Singh, along with Thakur Hari Singh, Thakur Sumer Singh and others were going to Deeg police station to surrender when the then Deputy SP Kan Singh Bhati and other policemen fired indiscriminately at Raja Man Singh near Anaj Mandi as part of a well-planned conspiracy," he said in a statement. Man Singh and his two associates died on the spot.

→ **Later, top police officials admitted the former ruler was not armed. The then Prime Minister, Rajiv Gandhi, asked Chief Minister Mathur to step down. The investigation was transferred**



to the Central Bureau of Investigation. The trial started in a Jaipur court but in December 1990, the case was shifted to the Mathura sessions court on the direction of the Supreme Court after Man Singh's daughter Krishnendra Kaur 'Deepa' filed a plea. Later, the Supreme Court shifted the trial to Mathura in Uttar Pradesh. It may not be known if Congress leaders conspired with the police, but the incident remains a blot on the party's record in the 1980s.

### Who Are the Other Members of The Bharatpur Royal Family in Politics?

Man Singh's daughter Krishnendra Kaur Deepa was a minister in the Vasundhara Raje-led BJP government in Rajasthan while his nephew Vishvendra Singh was formerly in the BJP and now incumbent Congress MLA from Deeg-Kumher constituency. The son of Man Singh's elder brother Brijendra Singh, Vishvendra is the titular king of Bharatpur and also one of the 18 Congress MLAs who have sided with former Deputy Chief Minister Sachin Pilot. Vishvendra was recently suspended from primary membership of the Congress after the party accused him of conspiring to topple the Gehlot government. Bharatpur and Dholpur were the only two former princely states in Rajasthan which were ruled by Jat rulers. The royal family of Bharatpur is known to command significant clout and influence in the district and its adjacent regions, particularly among the Jat community. The descendents of Maharaja Suraj Mal, the famous 18<sup>th</sup> century Jat ruler who stood up against the Mughals, multiple members of the family are active in contemporary politics.

### Arms and The Women

→ A glass ceiling was shattered on Thursday when the Ministry of Defence issued a formal letter granting permanent commission to women officers in the Indian Army. The uphill battle to break a gender stereotype and provide equal opportunities for women in the Army had to be fought right up to the highest level, in the Supreme Court. Even so, the MoD's Government Sanction Letter specifying the grant of permanent commission to Short Service Commission (SSC) women officers in all the 10 streams in which they presently serve is a cause for celebration. It will go a long way in ending a prejudice associated with the Army. True, the fight was far from easy. It was long and protracted, as the government initially glossed over a Delhi High Court ruling in the litigants' favour 10 years ago. Then in the Supreme Court, just what the litigants were up against became clear from the views of the government. A written note to the Court pointed at "physiological limitations" of women officers, saying that these were great challenges for women officers to meet the exigencies of service. In February, the Supreme Court read the government the riot act, asking it to abide by its own policy on granting permanent commission to women in the SSC and giving them command postings in all services other than combat.

The misogyny was called out in a 54-page judgment. The Supreme Court noted that women officers of the Indian Army had brought laurels to the force. "The time has come for a realisation that women officers in the Army are not adjuncts to a male dominated establishment whose presence must be 'tolerated' within narrow confines," it said. The Army is often seen as the preserve of men, but enough women have fought heroic battles to bust that myth, from Rani of Jhansi in the past to Squadron Leader Minty Agarwal of the Indian Air Force, who last year "was part of the team that guided Wing Commander Abhinandan Varthaman during the Balakot airstrike carried out by the IAF". The irony is that of the 40,825 officers serving in the Army, a mere 1,653 are women, as the top court noted. The overall percentage of women at all levels of the armed forces needs to be increased. To usher in a change in a regressive mindset, which mirrors society, a lot more must be done on gender sensitisation. Elsewhere in the world, in countries such as the United States and Israel,



women are allowed in active combat. Here, the Supreme Court had to forcefully nudge the government to make women's role in the Army more inclusive. A gender barrier may have fallen, but the war against inequity is far from over.

### Helpline for Students' Mental Health Launched

- Keeping in mind the stress faced by students and their families especially during the COVID-19 pandemic, the **Human Resource Development (HRD) Ministry on Tuesday rolled out a mental health initiative named Manodarpan**. The platform includes a national toll-free helpline for students of schools, universities and colleges, which will be manned by a pool of experienced counsellors, psychologists and mental health professionals, according to an official statement. Students can call 8448440632 for help during the COVID crisis and beyond. Manodarpan also has a website which will host an interactive online chat platform, advisories and tips on mental and emotional health, a national database of counsellors, links to webinars and other resources. "COVID-19 is understandably a challenging time for everyone around the world. Children and adolescents may be more vulnerable and may experience heightened level of stress, anxiety and fearfulness, along with a range of other emotional and behavioural issues," HRD Minister Ramesh Pokhriyal Nishank said.

### Community Canteens 2.0 (Abhishek Jain And Shanal Pradhan Are Researchers at The Council on Energy, Environment and Water)

- In his recent address to the nation, Prime Minister Narendra Modi announced a three-month extension to the Pradhan Mantri Garib Kalyan Ann Yojana. The government would provide **5 kg of grains and 1 kg of chickpea monthly to about 800 million beneficiaries across the country**. Alongside, he highlighted the implementation of the **'One Nation, One Ration' (ONOR) scheme to improve access to subsidised grains for migrant workers**. Lack of access to food drove millions of them to their native villages during the lockdown period. While these measures are welcome, they may fall short of reaching all sections of this vulnerable population. **Most migrant workers do not live with families; many do not cook their meals. Instead, a significant number rely on roadside vendors and dhabas. Without access to cooking arrangement or fuel, only subsidised grains are not a sufficient solution to ensure nourishment. Neither would it be sufficient to attract them back to the urban areas as access to affordable food remains a major concern.** Instead, is there a way to ensure safe, nutritious and affordable food for all urban poor, while saving fiscal resources, creating jobs, and furthering sustainability goals?

#### Nutritional Security

The solution lies in tweaking an existing approach – community canteens. **More than 10 States have run community canteens. Some notable examples include the Amma Canteens in Tamil Nadu and Indira Canteens in Karnataka. However, a drawback is that most of these canteens rely on continuous government support for their sustenance as meals are usually priced unsustainably low at ₹5-10 per plate. However, our preliminary analysis suggests that such canteens could be operationally self-sustainable by pricing the nutritious meals at ₹15-20 per plate. This would still be lower than what most dhabas and roadside vendors charge for a meal. While the Central government should extend the initial capital support, the implementation at the State level should be led by urban local bodies or municipal corporations, in collaboration with private entities as service providers. Our analysis**



suggests that with an initial social investment of ₹26,500 crore towards 60,000 canteens and about 8,200 kitchens, we could serve three nourishing meals a day to the 30 million urban poor workers, primarily migrants. **If all urban migrant workers rely on community canteens instead of ONOR, the investment pays back itself in less than six years, as it helps avoid the potential food subsidy outlay due to ONOR, leading to annual savings of about ₹4,500 crore thereafter.**

### Jobs and Growth

Community canteens could also contribute to jobs, growth and sustainability. **The 60,000 canteens, each serving about 500 beneficiaries on average, would generate more than 1.2 million jobs to serve 90 million meals a day. These canteens would also help bridge the nourishment gap among poor urban workers.** Further, the government should leverage community canteens to shift diets and agriculture production towards more sustainable and sustainably harvested food crops. **These canteens must incorporate low-cost yet nutritious and environmentally sustainable food items in the plate – bringing in coarse grains such as millets and sorghum into the dietary patterns. These canteens would create the demand signals for the farmers to diversify their crops and focus on sustainably harvested produce.** Under extreme circumstances, the lack of access to food is a matter of survival. But even in regular times, access to nutritious food is essential. Pandemic or not, access to affordable and safe food should not be an uncertainty for any section of the society. A renewed approach to community canteens would not only achieve nutritional security for migrant workers but would also create new jobs, save fiscal resources, support economic growth and promote sustainable diets and agriculture.

### The Business of Fake Social Media Accounts, Revealed in Mumbai Arrest

- ➔ **The Mumbai Police earlier this week arrested a 20-year-old man for allegedly creating a fake profile of Bollywood playback singer Bhoomi Trivedi.** The interrogation of the accused Abhishek Daude revealed that there are several such companies that sell followers and 'likes' on social media. Mumbai Police have now decided to widen the scope of the investigation, and will probe what they are calling the "social media marketing influencers fraud".

### What Led to The Police to This Alleged Fraud?

Purported chat logs of a fake Instagram account created under the name of Bhoomi Trivedi that purported to show her in apparent negotiations for purchasing fake followers were allegedly used by Daude to lure more people to purchase followers. When Trivedi found out about the alleged racket being run in her name, she approached the Mumbai Police Commissioner, and an offence was registered. The police then arrested Kurla resident Daude.

### What Emerged in The Investigation?

According to police, it has revealed during investigation that Daude is part of a racket to create crores of fake identities on various social media platforms, and thereby produce fake performance statistics such as followers, comments, and views — all fake. The idea was to allegedly to inflate the performance statistics of 'influencers. Daude had created more than 5 lakh fake followers for a total of 176 profiles on Instagram, TikTok, and Facebook, etc., in order to fraudulently project these profiles as those of 'influencers.





## Is the Fake Follower's Industry Big on The Internet?

Research by Swedish e-commerce start-up Good Company and analytics firm HypeAuditor that assessed 1.84 million Instagram accounts across 82 countries last year found that the top three markets with the largest numbers of fake accounts were the United States (49 million), Brazil (27 million), and India (16 million). The researchers spoke to around 400 influencers, 60 per cent of whom confirmed that they had bought followers, likes, or comments at some point. Apart from just social media influencers whose high follower count could make them hot property for brand promotions online, services of these fake accounts or bots (software application that imitates human behaviour) are suspected to be used by political parties, celebrities, and in film promotions. These companies use fake accounts to start trending a particular hashtag, for example a movie's name before a release date. These websites run 'offers' such as 500 Instagram likes for Rs 250, and 1,000 Twitter followers for Rs 1,449.

## So, What Action Can the Mumbai Police Take?

This is going to be a challenge for the police, since the use of these services is so widespread. An officer said that it would be interesting to see, for example, whether the police are able to register cases against those managing social media accounts for political parties. So far during investigation, police have estimated that **there are more than 100 such Social Media Marketing (SMM) portals that provide fake followers – and identified 54, whom they will call for questioning.** The police have said that they will likely book the companies that provide these services and, "depending on whether the client knew about these illegal methods or not", a decision will be taken.

## Is Providing Fake Followers Illegal, Or Merely Unethical?

This is the first time that police have said they would register offences against those providing these services. Law enforcement agencies have so far not gone down this path. In Trivedi's case, a fake profile of the singer was created – so, it was clearly a criminal offence of impersonation. However, there is no specific law in India to deal with cases involving only the buying and selling of fake accounts. In the absence of a specific law, police can take recourse to Section 468 of the Indian Penal Code, which deals with committing forgery of a document or electronic record for the purposes of cheating, Supreme Court advocate and cyber law expert Karnika Seth said. "Since a fake account is an electronic record that can be used to misrepresent, one could book a person under that," she said. Cyber expert Vicky Shah, however, said that proving such a case in a court of law would be difficult.

## How Do Other Countries Deal with This?

In January 2019, the Attorney General of New York state, Letitia James, announced a precedent-setting settlement over the sale of fake followers, 'likes', and views on social media platforms, including Twitter and YouTube, using fake activity from false accounts. In October 2019, the Singapore government notified the Protection from Online Falsehoods and Manipulation Act, 2019, which includes measures to detect, control, and safeguard against coordinated inauthentic behaviour and other misuses of online accounts and bots.

## Does India Need to Have Such A Law?

Cyber lawyer Pawan Duggal said there is a policy vacuum, and a clear need for legal provisions to deal with this issue. However, **several politicians and political parties are**



suspected to be utilising these services to boost their social media profiles, making it likely that there will be political resistance to any move to rein in such behaviour, a senior officer said.

### How Do Social Media Platforms React to This?

Social media platforms like Instagram have in the past deleted accounts that they suspected were using third-party apps to increase their follower count.

### The Significance of Kakrapar-3

- ➔ The third unit of the Kakrapar Atomic Power Project (KAPP-3) in Gujarat achieved its 'first criticality' – a term that signifies the initiation of a controlled but sustained nuclear fission reaction – at 9.36 am on Wednesday. PM Narendra Modi congratulated India's nuclear scientists on this achievement, describing the development of the indigenous reactor as "a shining example of Make in India" and a "trailblazer for many such future achievements".

### Why Is This Achievement Significant?

This is a landmark event in India's domestic civilian nuclear programme given that KAPP-3 is the country's first 700 MWe (megawatt electric) unit, and the biggest indigenously developed variant of the Pressurised Heavy Water Reactor (PHWR). The PHWRs, which use natural uranium as fuel and heavy water as moderator, are the mainstay of India's nuclear reactor fleet. Until now, the biggest reactor size of indigenous design was the 540 MWe PHWR, two of which have been deployed in Tarapur, Maharashtra. The operationalisation of India's first 700MWe reactor marks a significant scale-up in technology, both in terms of optimisation of its PHWR design – the new 700MWe unit addresses the issue of excess thermal margins – and an improvement in the economies of scale, without significant changes to the design of the 540 MWe reactor. (Thermal margin refers to the extent to which the operating temperature of the reactor is below its maximum operating temperature.) Four units of the 700MWe reactor are currently being built at Kakrapar (KAPP-3 and 4) and Rawatbhata (RAPS-7 and 8). The 700MWe reactors will be the backbone of a new fleet of 12 reactors to which the government accorded administrative approval and financial sanction in 2017, and which are to be set up in fleet mode. As India works to ramp up its existing nuclear power capacity of 6,780 MWe to 22,480 MWe by 2031, the 700MWe capacity would constitute the biggest component of the expansion plan. Currently, nuclear power capacity constitutes less than 2% of the total installed capacity of 3,68,690 MW (end-January 2020). As the civilian nuclear sector gears up for the next frontier – building a 900 MWe Pressurised Water Reactor (PWR) of indigenous design – the experience of executing the larger 700MWe reactor design will come in handy, especially with regard to the improved capability of making large pressure vessels. This is alongside isotope enrichment plants being developed to supply part of the required enriched uranium fuel to power these new generation reactors over the next decade or so, Department of Atomic Energy officials have said.

### When Did Work Start on This 700 MWe Project?

The first "pour of concrete" happened in November 2010, and this unit was originally expected to be commissioned in 2015. State-owned Nuclear Power Corporation of India Ltd (NPCIL) had awarded the reactor-building contract for both KAPP-3 and 4 to Larsen & Toubro at an original contract value of Rs 844 crore. The original cost of two 700 MWe units was pegged at Rs 11,500 crore, and the tariff per unit was originally calculated to be Rs 2.80 per



unit (kWh) at 2010 prices (a cost of roughly Rs 8 crore per MWe). This costing is expected to have seen some escalation. The capital investment for these projects is being funded with a debt-to-equity ratio of 70:30, with the equity part being funded from internal resources and through budgetary support.

### What Does Achieving Criticality Mean?

Reactors are the heart of an atomic power plant, where a controlled nuclear fission reaction takes place that produces heat, which is used to generate steam that then spins a turbine to create electricity. Fission is a process in which the nucleus of an atom splits into two or more smaller nuclei, and usually some by-product particles. When the nucleus splits, the kinetic energy of the fission fragments is transferred to other atoms in the fuel as heat energy, which is eventually used to produce steam to drive the turbines. For every fission event, if at least one of the emitted neutrons on average causes another fission, a self-sustaining chain reaction will take place. A nuclear reactor achieves criticality when each fission event releases a sufficient number of neutrons to sustain an ongoing series of reactions.

### What Are the Milestones in The Evolution of India's PHWR Technology?

PHWR technology started in India in the late 1960s with the construction of the first 220 MWe reactor, Rajasthan Atomic Power Station, RAPS-1 with a design similar to that of the Douglas Point reactor in Canada, under the joint Indo-Canadian nuclear co-operation. Canada supplied all the main equipment for this first unit, while India retained responsibility for construction, installation, and commissioning. For the second unit (RAPS-2), import content was reduced considerably, and indigenisation was undertaken for major equipment. Following the withdrawal of Canadian support in 1974 after Pokhran-1, Indian nuclear engineers completed the construction, and the plant was made operational with a majority of components being made in India. From the third PHWR unit (Madras Atomic Power Station, MAPS-1) onward, the evolution and indigenisation of the design began. The first two units of PHWR using indigenously developed standardised 220 MWe design were set up at the Narora Atomic Power Station. This standardised and optimised design had several new safety systems that had been incorporated in five more twin-unit atomic power stations with a capacity of twin 220 MWe units located at Kakrapar, Kaiga, and Rawatbhata. To realise economies of scale, the design of 540 MWe PHWR was subsequently developed, and two such units were built at Tarapur. Further optimisations were carried out when the upgrade to 700 MWe capacity was undertaken, with KAPP-3 the first unit of this kind.

### Does the 700MWe Unit Mark an Upgrade in Terms of Safety Features?

PHWR technology has several inherent safety features. The biggest advantage of the PHWR design is the use of thin walled pressure tubes instead of the large pressure vessels that are used in pressure vessel type reactors. This results in the distribution of pressure boundaries to a large number of small-diameter pressure tubes, thus lowering the severity of the consequence of an accidental rupture of the pressure boundary. Additionally, the 700 MWe PHWR design has enhanced safety through a dedicated 'Passive Decay Heat Removal System', which can remove decay heat (released as a result of radioactive decay) from the reactor core without requiring any operator actions. This is on the lines of similar technology adopted for Generation III+ plants to negate the possibility of a Fukushima-type accident that happened in Japan in 2011. The 700 MWe PHWR unit, like the one deployed in KAPP, is equipped with a steel-lined containment to reduce any leakages, and a containment spray system to reduce the containment pressure in case of a loss of coolant accident.



## Heatwaves, Floods, Droughts: Projections for India In Coming Decades

- The first 'Assessment of Climate Change over Indian Region', released by the Ministry of Earth Sciences recently, warns of tropical cyclones, thunderstorms, heat waves, floods and droughts in India unless mitigation measures are adopted soon. The projections are for the decades leading to the end of the 21st century.

### Temperature

- ❖ Surface air temperature over India has risen by 0.6°C per year during 1901-2018.
- ❖ Regions of North India have undergone warming more than the South, where warming has been mainly during winters.
- ❖ Every decade between 1951-2015 had 7.4 warmer days and 3.1 warmer nights than the annual averages for daily maximum and nightly minimum respectively.
- ❖ The frequency of warm days is projected to increase by 55% and that of warm nights by 70%, both relative to 1976-2005.
- ❖ In coming decades, the average duration of heatwaves during April-June is projected to double, and their frequency to rise by 3 to 4 times compared to 1976-2005.
- ❖ By the end of the 21st century, average temperature over India is projected to rise by 4.4°C, relative to the average temperature during 1976-2005.
- ❖ Sea surface temperatures on the tropical Indian Ocean have been rising by an average 1°C annually over 1951-2015.

### Monsoon

- ❖ During 1951-2015, annual rainfall over India showed a declining trend. The reduction ranged between 1-5 mm over central India, Kerala and the far Northeast regions.
- ❖ Contrarily, precipitation increased over J&K and Northwest India.
- ❖ The coming decades are projected to witness a considerable rise in the mean, extreme and inter-annual variability of rainfall associated with monsoon.

### Droughts and Floods

- ❖ Since the 1950s, the frequency and intensity of both heavy rainfall events and dry days have gone up. These trends are prominent over Central India and South Peninsular regions during the southwest monsoon (June-September) and northeast monsoon (October-December) respectively.
- ❖ Since 1901, India has experienced 22 droughts during monsoon. In addition to an increase in the area under drought, frequency and severity too have increased during 1951-2016.
- ❖ Flood risks are higher over the east coast, West Bengal, eastern Uttar Pradesh, Gujarat, Konkan and cities like Mumbai, Chennai and Kolkata.
- ❖ The Himalayan flood basins are projected to greater floods, due to the faster glacial and snow melting. Major flooding events are projected over the Brahmaputra, Ganga and Indus.
- ❖ Central India, Kerala, and some areas in South Peninsular and Eastern India experienced at least two droughts during 1901-2016.
- ❖ Projections suggest an increase by one or two events per decade over Central and Northern India. Eastern India could face two more droughts per decade compared to





what was experienced during 1976-2005, while the Southern Peninsula is projected to experience one or two droughts fewer.

### Sea Level

- ❖ During 1993-2015, the sea level over the North Indian Ocean (Arabian Sea and Bay of Bengal) rose by 3.3 mm per year, which is in tune with the Global Mean Sea Level (GMSL) rise.
- ❖ In an extreme climate scenario projected by the report, a risk of inundation looms over Andhra Pradesh and Ganga-Brahmaputra-Meghna delta basins. By 2030, some 340 million coastal residents of the North Indian Ocean and its islands would be exposed to coastal hazards.

### Tropical Cyclones

- ❖ Before the 1950s, 94 severe cyclonic storms formed in the Bay of Bengal, a number that jumped to 140 post the 1950s. For those formed in the Arabian Sea, the number has risen from 29 to 44 in the same period.
- ❖ Storms in the Arabian Sea are gaining more strength and the trend is projected to continue. The number of extremely severe cyclonic storms formed in the Arabian Sea has increased in the last 20 years.

### Himalaya Snow Cover

- ❖ During the last seven decades, the Hindukush Himalayas have warmed at an average 0.2°C per decade, leading to a decline in snow cover and glaciers in the last four to five decades. The Karakoram Himalayas have reported an increase in snowfall during winter.
- ❖ By the end of the century, the Hindukush Himalayas are projected to be warmer by 2.6-4.6°C.

### Cause & Effect

- ❖ The main contributor to climate change is anthropogenic activities pushing up concentrations of greenhouse gases. This has led to rise in temperature and atmospheric moisture content.
- ❖ A higher concentration of water vapour, in turn, leads to intense rainfall during monsoon.
- ❖ Heating leads to vaporisation, which is directly linked to decreasing soil moisture, resulting in droughts. This can lead to reduction in food production and in availability of potable water, the report says.
- ❖ Rising sea levels would make India's big cities vulnerable to erosion and damage to coastal projects, the report says.

### Salt-Loving Bacteria Turned Lonar Lake Pink

- ➔ The colour of water in Lonar lake in Maharashtra's Buldhana district turned pink due to a large presence of the salt-loving Haloarchaea microbes. "Haloarchaea or halophilic archaea is a bacteria culture, which produces pink pigment, and found in water saturated with salt," Dr. Prashant Dhakephalkar, director of Agharkar Research Institute, said. Last month, the State forest department informed the Bombay High Court it had collected water samples and sent them for testing to Agharkar Research Institute and the National Environmental



Engineering Research Institute in Nagpur. Dr. Dhakephalkar said, "Initially, we thought it was because of the red-pigmented *Dunaliella* algae. But while studying the samples, we found a large *Haloarchaea* population in the lake. Since it [*Haloarchaea*] produces a pink pigment, it formed a pink colour mat on the water surface." Dr. Dhakephalkar and other researchers have prepared a detailed report of their findings and sent it to the forest department, which will submit it before the Nagpur Bench of the Bombay High Court. Dr. Dhakephalkar said the absence of rain, less human interference and high temperature could have resulted in the evaporation of water, increasing salinity and pH levels in the lake. The report also concluded that the change in colour was not permanent. "We allowed the sample water to stand still for some time and found the biomass settle at the bottom. The water then became clear and transparent. So, it was the biomass of these microbes that turned the surface of the water red or pink," Dr. Dhakephalkar said.

### Mobile App KURMA Helps Save Turtles in India

- On May 23, 2020, World Turtle Day, a number of conservation agencies launched a citizen science initiative, a mobile-based application called KURMA, aimed at turtle conservation. The application, developed by the Indian Turtle Conservation Action Network (ITCAN) in collaboration with the Turtle Survival Alliance-India and Wildlife Conservation Society-India, not only provides users a database to identify a species but also provides the location of the nearest rescue centre for turtles across the country. "The KURMA App is free to download. It serves as a digital database, with a built-in digital field guide covering 29 species of freshwater turtles and tortoises of India, and information on turtle identification, distribution, vernacular names, and threats," Shailendra Singh, director of Turtle Survival Alliance-India, said.

### 200 Smuggled A Week

Tortoise and freshwater turtles are among the most trafficked in the country. A report released in 2019 by TRAFFIC, an international wildlife trade monitoring organisation, showed that at least 200 tortoises and freshwater turtles fall prey to illicit poaching and smuggling every week, or 11,000 each year, adding up to over 1,11,130 turtles poached or smuggled between September 2009 and September 2019. One of the major challenges for freshwater turtle conservation in the country is that wildlife crime prevention agencies are not sufficiently equipped to know how to distinguish one species from the other, or their protection status in accordance with CITES (Convention on International Trade in Endangered Species) and the Wildlife Protection Act. "Suppose turtles are recovered at Kolkata Airport, then KURMA will help you reach five places in Kolkata that one can approach for help. Different rescue centres are also registered on the app, and also a number of experts who can provide more information on the species," Mr. Singh said. Within only a few weeks, 90 assistance facilities have been registered on the app. If anyone reports a turtle from any part of the country using KURMA, he or she receives advice about the species and its conservation. The organisations that have developed the app said it was generating a good response.

### Here Are the Key Takeaways from Delhi's Serological Survey

- The Ministry of Health and Family Welfare on Tuesday declared the results of a serological survey carried out in Delhi between June 27 and July 10, which showed that 22.86% of the people surveyed had developed IgG antibodies, indicating they had been exposed to the novel



coronavirus that causes Covid-19. A total 21,387 samples were collected to look for the presence of antibodies. The study has found that a large number of infected persons remain asymptomatic.

### What Is A Serological Survey?

A serological survey seeks to assess the prevalence of disease in a population by detecting the presence of specific antibodies against the virus. A serological test is performed to diagnose infections and autoimmune illnesses. It can also be conducted to check if a person has developed immunity to certain diseases. The survey included the IgG Enzyme-Linked Immunosorbent Assay (ELISA) test with ICMR-approved COVID KAVACH ELISA kit which estimates the proportion of the population exposed to SARS-CoV-2 infection. The IgG test is not useful for detecting acute infections, but it indicates episodes of infections that may have occurred in the past. The test has been approved by ICMR for its high sensitivity and specificity.

### What Does the Survey Carried Out in Delhi Show?

The seroprevalence study found the presence of antibodies in 22.86 per cent of the people surveyed. This rate of seropositivity cannot, however, be extrapolated over Delhi's entire population. Since it is not possible to test everyone in the population, serological studies are used as a tool to make an estimate of the extent of disease spread in the community. At a press conference on Tuesday, the Health Ministry said that the fact that only 22.86% were found to be infected in a survey carried out in a city with several pockets of dense population, shows that the proactive efforts by the government to prevent the spread of Covid-19, including prompt lockdown, effective containment and surveillance measures, contact tracing and tracking, as well as citizens' compliance had yielded benefits.

### Has Such A Survey Been Carried Out in Other States as Well?

In April, the Indian Council of Medical Research (ICMR) had conducted a pilot serosurveys in 83 districts in 21 states. The initial results, which are being peer-reviewed, indicate that the percentage of the general population that could have been infected in the past was 0.73 per cent, with urban areas showing a higher prevalence of 1.09 per cent.

### So, What Happens Now?

The government has said that results show that a significant proportion of the population is still vulnerable to contracting the novel coronavirus infection. "Containment measures need to continue with the same rigour. Non-pharmacological interventions such as physical distancing, use of face mask/cover, hand hygiene, cough etiquette and avoidance of crowded places etc. must be followed strictly," it has said.

In his opinion piece, Milind Sohoni from the Centre for Technology Alternatives for Rural Areas, IIT Bombay says the results of the sero-prevalence survey in Delhi are remarkable and should provide a turning point in the management of the epidemic. Of the 198-lakh people of Delhi, 23 per cent, that is, close to 45 lakhs have been infected. Of these 45 lakhs, the number of officially confirmed cases is a mere 1.23 lakh, of which roughly 3,700 people have died. "This gives us an infection fatality ratio (IFR) of about 0.9 per 1,000. This is, of course, much less than that in the US, Germany and other countries and more in line with other tropical countries such as Thailand," says Sohoni.



## Business & Economics

### How the Government Can Arrest India's GDP Slide by Funding Its Deficit

→ A report by the State Bank of India has recommended direct monetisation as a possible way of funding the Centre's deficit at lower rates, without increasing inflation and affecting debt sustainability. This is seen as crucial at a time when the country's debt levels are rising, amid a likely contraction in GDP and falling government revenues. The SBI's economics research team's report notes that bringing growth back is the only mantra to a sustainable debt trajectory, and in this light, it has suggested the government raise funds directly from the Reserve Bank of India through issuance of "Covid perpetual bonds" or such instruments.

#### What Is Direct Monetisation?

Monetisation simply means that the RBI directly funds the central government's deficit. Until 1997, the government used to sell securities – ad hoc Treasury-Bills – directly to the RBI, and not to financial market participants. This allowed the government to technically print equivalent amounts of currency to meet its budget deficit. This practice was stopped over its inflationary impact and in favour of fiscal prudence. The SBI report argues that the Fiscal Responsibility and Budget Management (FRBM) Act allows direct monetisation of deficit in certain exceptional circumstances, the Covid pandemic being one such. It expects this not to be inflationary, given the stagnant demand. The finance ministry has so far not stated any view on monetisation of the deficit, though it has said it is open to all options.

#### What Is Pushing India's Debt Levels?

SBI noted that the GDP collapse is pushing up the debt-to-GDP ratio by at least 4%, implying that "growth rather than continued fiscal conservatism is the only mantra" to get us back on track. Most agencies expect India's GDP to contract by more than 5 per cent this year, with April-June being the hardest hit. Shrinking revenues as a result of slump in economic activity means government will run far short of its revenue targets, forcing it to raise debt from the markets. India's debt-to-GDP ratio is projected to rise to around Rs 170 lakh crore or 87.6% of GDP in FY21, from Rs 146.9 lakh crore (72.2% of GDP) in FY20. Monetisation of deficit would mean the Centre will be able to raise funds at a lower cost without putting pressure on the bond markets. Low interest rates and high GDP are crucial for debt sustainability, as higher growth means government's revenue expansion will outstrip any spike in debt repayment.

### How Lower Mop-Up Has Translated into Delayed GST Compensation

→ The COVID-19 pandemic has further deepened the country's economic slowdown, impacting the government's revenues, with the Goods and Services Tax (GST) collections recording a 41 per cent decline in the April-June quarter. Lower GST revenues have translated into delayed and pending compensation payments to states, an issue which will be central to the discussions of the GST Council meeting slated to be held later this month.

#### GST Compensation Issue

The concern over compensation payments started surfacing in October last year, when the payments to states got delayed as GST revenues came in lower than expected. As the required amount to pay states started rising with a compounded 14 per cent rate even as

[Shatabdi Tower, Sakchi, Jamshedpur](#)





compensation collections remained around the same level for two consecutive years, the high rate of 14 per cent has been viewed as delinked from economic realities. For instance, in the ongoing financial year, the SGST revenue for June has been Rs 23,970 crore, while monthly protected revenue is Rs 63,706 crore, leaving a gap of Rs 39,736 crore (not taking into account IGST settlement). Only Rs 14,675 crore has been collected as compensation cess in April-June, out of which Rs 7,665 crore was collected in June. The Centre in June cleared payment of Rs 36,400 crore for November-February for 2019-20 and the compensation amount for subsequent months are pending.

### Discussions So Far, View of States

Market borrowing has been discussed as one of the possible solutions for meeting the compensation gap in the GST Council though the legality of the Council to borrow will need to be explored. There is also an emerging view among states to hike the GST rates or go for the long overdue restructuring of GST slabs as most states concede that the current tax rates are lower than revenue neutral rates. States, however, admit that any tinkering of rates of rate structure under GST needs to be done only after few months till the effects of pandemic-induced slowdown wear off, with the same line of reasoning being used earlier to defer correction of inverted duty structure even though most states were on board for correcting it. There are differing views among states on the Council itself resorting to market borrowing. While Kerala backs such a move and Bihar opposes it, all states are unanimous on sticking to the 14 per cent assured rate for compensation. Some states are also of the view that the compensation period should be extended beyond the stated period of five years.

### Compensation Fund

In the Budget for 2020-21, while announcing the transfer of balances due from the collections for 2016-17 and 2017-18 in two instalments to the GST Compensation Fund, Finance Minister Nirmala Sitharaman had said that hereinafter, transfers to the fund would be "limited only to collection by way of GST compensation cess". Vijay Kelkar, former Finance Secretary and 13<sup>th</sup> Finance Commission Chairman, in a paper co-authored with Pune International Centre's Senior Fellow V Bhaskar has questioned this proposition. "While the Centre's position appears legally tenable, it does not appear ethically defensible...its decision to restrict transfer to the Fund only to compensation cess collections seems more a fiscal aspiration than a legal compulsion. Section 10(1) of the Act allows for "other amounts" also to be credited to the Compensation fund with the approval of the GST Council," it said. At present, the cess levied on sin and luxury goods such as tobacco and automobiles flow into the compensation fund. Alternative sources of revenue for the compensation fund in case of a shortfall were raised by states in the GST Council meetings held in early 2017, with borrowing being considered as one of the options. Minutes of the 8<sup>th</sup> GST Council meeting state, "The Hon'ble Chairperson (then Finance Minister Arun Jaitley) that compensation to States shall be paid for 5 years in full within the stipulated period of 5 years and, in case the amount in the GST Compensation Fund fell short of the compensation payable in any bimonthly period, the GST Council shall decide the mode of raising additional resources including borrowing from the market which could be repaid by collection of cess in the sixth year or further subsequent years."

### Options for Meeting Compensation Gap

Hiking the cess rate or lowering of the guaranteed compensation rate have featured in the discussions of the GST Council meetings, but states are not in favour of either of the options.



As per estimates shared by Bihar's Deputy Chief Minister Sushil Kumar Modi, even if revenue collections in 2020-21 are projected to be even 65 per cent of the revenues collected in 2019-20, there would be a revenue gap of Rs 2,67,000 crore for states. Even if a 5 per cent cess is levied on high-end luxury goods, which form about 10 per cent of the overall GST base, it would only yield about Rs 22,000-25,000 crore per annum, he had earlier said. **In their paper, Kelkar and Rao have said that the Centre should promptly respond to the demand from states to pay them overdue compensation cess by borrowing from the market. "Though it does not appear to be legally liable, it has a moral imperative to do so, even if the guaranteed rate of revenue of 14% is inordinately high in the present COVID led economic downturn," the paper said, adding that a restructuring of the GST model should be considered if the losses for states continue. The paper has listed out five options – lowering the guaranteed rate of compensation, increasing the compensation cess, increasing the state's share (SGST), borrowing from the market by the GST Council and borrowing by the Centre from the market and crediting it to the compensation fund – to meet the compensation requirements, though the authors state that the first four options may be unacceptable and untenable, leaving only the option for Centre to borrow to compensate states.** It has also said that the inclusion of petroleum products under GST, simplification of GST rates and minimising exemptions, review of complex structure of Integrated GST, and **an independent GST secretariat which is at present dominated by the Centre's Revenue Department officials needs to be considered.** The paper cites the example of the decision to cut GST rates for 178 goods from 28 per cent to 12 per cent in the 23<sup>rd</sup> GST Council meeting having been taken based on a rough figure rather than any estimate of the tax base, the tax elasticity of the commercially important goods, the loss anticipated by such reduction and the anticipated increase in buoyancy through such measures. "Such an exercise was not professional to say the least. The GST Council needs professional and independent advice on tax matters. This can only occur through the creation of an independent GST Council Secretariat which would provide neutral, unbiased, and pertinent advice on all the matters," it said.

### What Is the Government's New Policy on The Strategic Sector?

- ➔ The government will soon come out with a policy on strategic sectors and simultaneously kick into motion a process of complete privatisation for companies in the **non-strategic sectors**. Department of Economic Affairs Secretary Tarun Bajaj said on Tuesday (July 21) that guidelines on the privatisation of the public sector companies would be out soon. **This is the first time since 1956 that the government has said it will not have state-owned companies in the non-strategic sector – and that the number in the strategic sectors too, would be reduced.** Banking, insurance, defence, and energy are likely to be part of the strategic sector list.

#### Details and Context

Announcing the Atmanirbhar Bharat economic support package in May, Finance Minister Nirmala Sitharaman had said that the proposed policy would notify the list of strategic sectors requiring the presence of at least one state-owned company along with the private sector. In all other sectors, the government plans to privatise public sector enterprises, depending upon feasibility. **The number of enterprises in strategic sectors will be only one to four, and others would be privatised/merged/brought under a holding company structure.** Finance Ministry officials have indicated that the policy will put out a "general framework" – and that specific decisions on which company is to be privatised, merged, or put under a holding company structure, would be taken later on. This is expected to be a long-term



process rather than a one-time move on the privatisation of companies. After inter-ministerial consultations to finalise strategic sectors, the policy will be put up before approval of the Union Cabinet.

### Will It Help Privatisation?

The government has already set in motion privatisation plans for large PSU companies BPCL, Air India, Container Corporation of India, and Shipping Corporation of India. Budget 2020-21 had announced plans to sell part of the Centre's stake in Life Insurance Corporation (LIC) through an initial public offer (IPO), and the sale of equity in IDBI Bank to private, retail and institutional investors. The emphasis on privatisation could see companies in chemicals and infrastructure space being privatised, while the government has stated its intent to reduce the number of state-owned banks. This could see some smaller banks being privatised in due course. A holding company structure could also be used to house equity of smaller banks in one entity. The government has shifted its focus to having a few very large banks under its fold, and a decision regarding the smaller banks is expected after the policy is unveiled.

### India Aims to Pare PSU Bank Count to Just Five

- ➔ India is looking to privatise more than half of its state-owned banks to reduce the number of government-owned lenders to just five as part of an overhaul of the banking industry, government and banking sources said. The first part of the plan would be to sell majority stakes in Bank of India, Central Bank of India, Indian Overseas Bank, UCO Bank, Bank of Maharashtra and Punjab & Sind Bank, leading to an effective privatisation of these state-owned lenders, a government official said. "The idea is to have 4-5 government owned banks," said one senior government official. At present, India has 12 state-owned banks.

### New Privatisation Plan

The official said that such a plan would be laid out in a new privatisation proposal the government is currently formulating, and this would be put before the Cabinet for approval. India's Finance ministry declined to comment. The Centre is working on a privatisation plan to help raise money by selling assets in non-core companies and sectors when the country is strapped for funds due to lack of economic growth caused by the COVID-19 pandemic. Several government panels and the RBI have recommended a maximum of five state-owned banks. "The government has already said that there will be no more mergers (between PSBs) so the only option for them is to divest stakes," a senior official at a state-owned bank said. Last year, the government had merged 10 state-owned banks into four. The divestment may not happen in this financial year due to unfavourable market conditions, the sources said. India expects bad loans at its banks could double after the crisis brought the economy to a standstill. As a result, the Centre may need to pump in nearly \$20 billion into the PSBs.

### Banks' Gross NPAs May Climb to as Much as 14.7% by March

- ➔ The Reserve Bank of India (RBI) said stress tests indicated that gross non-performing assets (GNPA) ratio of scheduled commercial banks (SCBs) could worsen to as high as 14.7% by the end of the current financial year, from 8.5% in March 2020, if the adverse economic impact of the COVID-19 pandemic was 'very severe'. "The macro stress tests for credit risk indicate that the GNPA ratio of all SCBs may increase... to 12.5% by March 2021 under the baseline scenario," the RBI said in its Financial Stability Report, July 2020. "The ratio may escalate to 14.7% under a very severely stressed scenario," which assumes hypothetically



that GDP would suffer a contraction of 8.9% in 2020-21, the central bank added. In the baseline case, the GDP is assumed to contract 4.4%. Observing that the capital to risk-weighted assets ratio (CRAR) of SCBs edged down to 14.8% in March, from 15% in September 2019, the RBI projected that this ratio could slide to “13.3% in March 2021 under the baseline scenario and to 11.8% under the very severe stress scenario”.

### Financial System ‘Stable’

On the assessment of systemic risk, the RBI said in its report that the Indian financial system remained stable, notwithstanding the significant downside risks to economic prospects. The central bank said the near-term economic prospects appear severely impacted by lockdown induced disruptions to both supply and demand side factors, diminished consumer confidence and risk aversion. “Full restoration in economic activity would be contingent upon the support for robust health infrastructure, recovery in demand conditions and fixing of supply dislocations,” the central bank observed.

### Why TRAI Has an Issue with Premium Plans That Offer Priority

- The Telecom Regulatory Authority of India (TRAI) and telecom operators Bharti Airtel and Vodafone Idea have gotten into a slugfest over premium plans being offered by these companies. Friday, the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) stayed the TRAI’s July 11 order to the telecom service providers asking them to stop offering premium and ‘priority on network’ services. The regulatory body can, however, continue its probe against both the operators, the TDSAT said, and pass final orders in accordance with law at the earliest.

### What Do the Plans Being Offered by The Mobile Companies Entail?

Vodafone Idea is offering the RedX plan for Rs 1,099 a month under which, among other benefits, it has claimed that these post-paid subscribers will get 50% faster data speeds. Similarly, Airtel has launched a Platinum category of customers comprising anyone subscribing to a post-paid mobile plan of over Rs 499 a month, under which faster 4G speeds are being offered. Both the companies have claimed that the subscribers of these plans will get preference on their networks.

### What is TRAI’s Contention?

The TRAI has claimed that it was not possible to give preference to certain customers without deteriorating the network quality for the remaining customers, and has asked the telecom companies to explain the same. Further, senior officials at the regulator have said that telecom operators have earlier claimed it was not possible to guarantee internet speeds to any customer and consequently the TRAI has asked the operators how would they ensure that speeds are guaranteed to the customers of RedX and Platinum plans.

### What Have the Operators Said?

The mobile companies claim to have deployed “advanced technologies” to give their premium customers preference on the network. In a statement, Bharti Airtel’s chief marketing officer Shashwat Sharma said: “It has been our endeavour to offer a differentiated service experience to our Platinum mobile customers as part of the Airtel Thanks program. And that’s where we will deliver that ‘extra’ service experience to them, including faster speeds by giving





them preference on our 4G network, while continuing to serve each of our 280 million customers with the same passion.”

### What Is the Basis of TRAI’s Argument That the Speed Guarantees Could Be Misleading?

In mobile networks, the capacity of any base station is shared by hundreds of customers, or even thousands at some point. Unlike fixed-line broadband networks, where a dedicated pipeline is allocated to a customer with a pre-defined bandwidth, cellular networks work on shared infrastructure with fixed capacity. Here, a metric known as ‘contention ratio’ comes into play. For example, if a tower with capacity of 100 megabits per second has 10 users currently connected to it, the contention ratio is 10:1 and each user will approximately get data speeds of 10 megabits per second. However, if 40 more users join the cell site, the ratio increases to 50:1 and the speed that each user gets is degraded to 2 megabits per second. Therefore, the regulator claims, the experience of any given customer depends on a number of factors such as how many people are connected to one particular tower, what is the network capacity of their handheld device, whether there is a downtime on the said tower.

### SC Warns Against AGR Dues’ Reassessment

- The Centre and Telco’s on Monday assured the Supreme Court that they would not conduct any re-assessment or re-calculation of the Adjusted Gross Revenue (AGR) dues. A Bench led by Justice Arun Mishra said it would not tolerate “even for a second” any attempt to re-assess the AGR dues which now stands at ₹1.6 lakh crore. The Bench, however, reserved its verdict on the timeline for the staggered payments. The Bench observed that 15 or 20 years was not a reasonable time period and the Telco’s must come forward with an appropriate time frame. The Centre had earlier urged the court that up to 20 years be given to the firms for the payments. The Telco’s said they were in no position to give fresh bank guarantees for the payments. **The October 2019 judgment originally wanted the Telco’s to make the repayment in three months. But the Centre intervened, saying it would dent the finances of the sector. In the last hearing, the court had sought financial details of the firms to see whether they could provide any bank guarantee for ensuring the repayment of AGR dues without fail over the next 20 years.**

### Why Has the Auditing Regulator Cracked Down on Deloitte India’s Former Head?

- The national regulator for auditors has fined and barred from practice for seven years a professional auditor who led the audit of IL&FS Financial Services (IFIN) in 2017-18. IFIN is a subsidiary of IL&FS which ran into deep financial trouble after running out of cash in 2018.

### What Action Has Been Taken in This Case?

The action by the National Financial Reporting Authority (NFRA) on Wednesday (July 22) to fine Udayan Sen, the former CEO of Deloitte Haskins and Sells, Rs 25 lakh for lapses in the audit, and to bar him from auditing activities for seven years, is the first order of its kind by NFRA. The authority was set up on October 1, 2018 by the Government of India under The Companies Act, 2013, specifically to investigate the role of auditors in frauds in listed and large public interest entities. Previously, only the Institute of Chartered Accountants of India (ICAI) was able to bar chartered accountants from being appointed as auditors for a



company, while the Securities and Exchange Board of India (SEBI) was permitted to bar CAs from auditing listed companies.

### On What Grounds Can Auditors Be Barred?

Auditors can be barred for professional misconduct including not exercising due diligence, or for gross negligence in their duties. The role of an auditor is to report on whether a company's financial statements have been reported in line with accounting standards, and to raise red flags in case the auditor notes any concerns regarding the statement of accounts or in any financial transactions entered into by the company. Auditors are also required to ensure that there is no conflict of interest in their own appointment. The Companies Act prohibits audit firms from providing certain non-audit services to clients that they are auditing. The NFRA noted that Deloitte was providing such non permitted services to companies related to IFIN, including the group holding company IL&FS.

### What Kind of Action Has Been Taken Against Auditors Earlier?

In 2018, SEBI barred the audit firm Price Waterhouse from auditing listed companies for two years, and barred auditors Srinivas Talluri and S Gopalakrishnan from auditing listed companies for three years, for professional misconduct in the Rs 7,800 crore scam at Satyam Computers, which came to light in 2009. The Securities Appellate Tribunal (SAT), however, quashed the order in September 2019. SEBI has appealed against the order by the SAT in the Supreme Court.

### What Is New in The Income Tax Form 26AS?

- In a move that will enhance the flow of information between taxpayers and tax authorities, the Income Tax Department has launched a revised Form 26AS or Annual Information Statement from this assessment year, which will reflect details of all high-value transactions. Since the details of high-value transactions will now be reflected to the taxpayers in the new form as against the tax department earlier receiving information from financial institutions and then acting upon it, there would now be a greater onus on taxpayers to comply in a voluntary manner.

### What is Form 26AS?

Form 26AS is a consolidated annual tax statement that includes information on tax deducted/collected at source, advance tax, self-assessment that is available on the Income Tax website against a taxpayer's Permanent Account Number (PAN). The Budget for 2020-21 had announced the revised Form 26AS giving a more comprehensive profile of the taxpayer going beyond the details of tax collected and deducted at source. In May, the Income Tax Department notified the new annual information statement in Form 26AS, effective June 1. Going beyond the details of tax deducted or collected at source, the revised Form 26AS will reflect all details provided by banks and financial institutions, which were earlier recorded in their Statement of Financial Transactions (SFTs).

### What Are the Details in Form 26AS?

The Central Board of Direct Taxes (CBDT) in a statement said the Income Tax Department used to receive information like cash deposit/withdrawal from saving bank accounts, sale/purchase of immovable property, time deposits, credit card payments, purchase of shares, debentures, foreign currency, mutual funds, buyback of shares, cash payment for



goods and services, etc. under Section 285BA of Income-tax Act, 1961 from “specified persons” like banks, mutual funds, institutions issuing bonds and registrars or sub-registrars etc., with regard to individuals having high-value financial transactions since the financial year 2016. “Now, all such information under different SFTs will be shown in the new Form 26AS,” it said. As per Section 285BA of the Income-tax Act, filers are required to furnish a Statement of Financial Transaction for specified transactions during the financial year to the income-tax authority or such other prescribed authority. Banks and other prescribed reporting financial institutions in their SFTs record details of transactions involving cash deposits aggregating to Rs 10 lakh or more in a financial year, in one or more accounts (other than a current account and time deposit), cash payments made by any person totalling over Rs 1 lakh, payments of bills for one or more credit card of Rs 10 lakh or more by a person in a financial year. Also, investment in bond/debentures, shares, mutual funds, buyback of shares exceeding Rs 10 lakh in a financial year along with purchase or sale of immovable property for Rs 30 lakh and above by a person will be recorded in the SFTs.

### What Is the Road Ahead from Here Onward?

The tax department will now move towards providing more auto-filled details of financial transactions in the income tax returns (ITRs). For example, as of now, Form 26AS will reflect details of sale/purchase of a property but with auto-filled details in ITRs, the taxpayer will be able to see an approximate amount of tax as per the relevant tax rate. “As we go further, all information will be collected and given at one place. As a common taxpayer, any economic activity which results in any profit, if it’s available at one place, then it will stay in my mind during return filing. It’s like a tick box, one can keep ticking this is correct or this is incorrect and needs to be changed. It will facilitate correct filing of return and when the correct filing is done, correct taxes get paid. And once the correct taxes are paid, where is the question of any scrutiny. Scrutiny will only come for the mismatch. And if it comes as well, so then it can be explained in this manner. This will also result in lesser litigation since disputes will be reduced,” CBDT Chairman PC Mody told The Indian Express. This was also mentioned in last year’s Budget presented in July, where Finance Minister Nirmala Sitharaman said that pre-filled ITRs will be made available to taxpayers which will contain details of salary income, capital gains from securities, bank interests, dividends, etc., and tax deductions that will make the filing of accurate tax returns simple. Information regarding incomes and TDS will be collected from banks, stock exchanges, mutual funds, EPFO, state registration departments, etc.

### Why Are Dairy Farmers in Maharashtra Dumping Their Milk?

- ➔ Milk prices are again in the news and this time the low realisations at farmer ends have brought them on the streets. Dairy farmers in Maharashtra have started a series of protests from Monday against the low prices’ dairies are paying them at present. As farmers take to dumping their milk on roads and stopping milk supply to urban areas, dairies blame the COVID-19 pandemic and the frequent lockdowns as the reason behind the recent price corrections. A look into the problem and why a quick solution does not seem to be in the offing.

### How The COVID-19 Pandemic Has Soured the Dairy Business

Since the last week of April dairies in Maharashtra have started slashing procurement prices they pay to farmers for their milk. In May, dairies in Tamil Nadu had affected a similar cut in procurement prices with the Karnataka dairy unions also announcing price correction by Rs

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**2 per litre.** In case of Maharashtra, farmers who were paid at the rate of Rs 30 per litre for their milk with 3.5 per cent fat and 8.5 per cent SNF (solid-not-fat) saw a steady decline in their realisations with dairies now paying between Rs 17-22.50 per litre. This steady decrease in their prices has led to the present protest with multiple farmer organisations taking to the streets. The opposition BJP in Maharashtra has also joined the fray with the party calling for state-wide agitation from August 1 in this regard. Dairies claim the pandemic has severely affected their capacity to pay. **During the initial days of lockdown, dairies saw products like ghee, cheese, butter, ultra-heat-treated milk (sold in cartons) fly off the shelves as people stocked up. However, the closure of institutional buyers like ice cream manufacturers, sweet shops etc saw dairies reporting sharp dip in their milk sales. Excess milk is converted by dairies into skimmed milk powder (SMP) which they either trade on commodities platforms or reconvert into liquid milk when their collection goes down.** Estimates by the dairy industry has pegged that at present the country has around 2 lakh tonnes of SMP which is further hitting their bottom lines. The rapid spread of the pandemic has seen many urban centres and states again go for a lockdown. Further **social distancing norms, have put brakes on marriages and other social gatherings. Festivals normally see dairies doing brisk business as sales of ghee, sweets etc peak, but the pandemic hangs over both the upcoming Raksha Bandhan as well as the Ganesh Chaturthi later in August. Before the lockdown, SMP in domestic market was around Rs 270-300 per kg but since then prices have collapsed to the present Rs 160-170 per kg which has seen dairies having no other option but to incur storage cost on it. Also, the return of the lockdown has seen businesses such as sweetshops, road side chaiwallahs, industrial canteens again closing down which has led to a further decrease in milk demand. A combination of both lower sales and unsold commodities have led to the present crisis with dairies not ruling out further price correction in the days to come.**

### What Are Farmers Demanding and How Feasible Is That?

At present farmers are demanding a direct subsidy ranging from Rs 5-10 per litre which will ensure their realisation is between Rs 25-30 per litre. This will compensate their cost of production which is around Rs 22-23 per litre not taking in consideration labour charges. The government of Karnataka has a scheme which sees the government paying a subsidy of Rs 6 per litre directly into the account of farmers which cushions them for drastic price corrections. Farmers in Maharashtra have asked for introduction of a similar scheme in the state. Dairies have asked for an export subsidy which will enable them to offload their unsold stock of SMP and thus enable them to create more demand and hence pay farmers a better price.

### Is Paddy Planted Using DSR Method More Vulnerable to Rodent Attacks?

- ➔ Amid reports that paddy sown with Direct Seeding of Rice (DSR) technique has been attacked by rodents and farmers are facing big challenges in Punjab, some argue that sowing technique involving transplantation of seedlings in flooded fields insulates the crop from such attacks. Others believe that government must revive an old policy to control rodent attacks. The Indian Express explains the challenge faced by farmers and the methods to control the menace.

### Which Crops Are Mostly Damaged by Rodents?

According to experts, rodents threaten every crop in the state including rice sown with the usual flooding method. In Punjab, mostly paddy is grown by transplanting paddy seedlings in flooded fields. While rats do not survive in flooding, but the crop is vulnerable to attacks close





to harvesting as rodent attack the roots, said experts. Barring paddy all crops in Punjab are sown in moist fields just like DSR sowing, which needs irrigation around the third week of sowing. So DSR as a technique cannot be blamed for making the crop vulnerable to rodent attacks. Experts said, "If the rodent control campaign would have been launched this time before paddy sowing with DSR, then the damage, which was reported from some places to the young plants of paddy could have been stopped."

### What Is the Damage Percentage of The Crops?

Dr. Neena Singla, Principal Zoologist, Rodents, and Head of the Zoology Department, Punjab Agriculture University (PAU), Ludhiana, said that in Punjab on an average 2 to 15 per cent damage is caused to every crop in Kharif and Rabi season by rodents. Even in case of Sugarcane, we have seen damage up to 25 per cent. They are a danger to every crop, including wheat, paddy, pulses, vegetables, melons etc.

### Is the Problem of Rodents Serious in Punjab?

Yes. If it is not controlled periodically then the population would increase manifold. They breed in vacant fields very fast after harvesting of any crop, especially where stubble remains in the fields. Rodents give birth after three weeks and litter 5 to 10 pups but sometimes they litter even more pups and can reproduce up to 10 times or more per year. According to domain experts, they have surprising reproductive capabilities and 4-8 weeks old mice are fully mature for reproduction. They added that if they see that grains are enough to survive, they produce a large number of off-springs and if there is a shortage of grain then they produce in a controlled manner. They have several species including the blind rats.

### How Can It Be Controlled?

There are two methods. To keep the pesticides load down, first is the natural and integrated management technique method. There are natural predators of rats which included snakes, owls, mongoose, cats etc that eat rats as an owl can eat 3-4 rats in one night. And these should not be killed they are friendly birds, mammals, and reptiles. Also, the bundh (raised earthen boundaries) on the sides of the fields house several rats as they make their burrows here. Farmers should dismantle them time to time to restructure the new ones which should be less raised and narrow, explained experts. Weeds and grasses must also be cleared from around the fields as they help in breeding of rodents. The second method is to the usage of rodenticides.'

### Which Rodenticide Should Be Used?

Zink Phosphoide and Bromadiolone are the most effective rodenticides to control the rodents. Both are government-controlled medicines and cannot be sold in open. Also, these are not very costly as the government can supply these to the farmers easily and even farmers can bear its cost which would cost him Rs 30 to 35 per hectare.

### What Was the Old Government Policy to Arrest Rodents Attack?

Till 15 years back, the Agriculture Department of Punjab used to get the funds from the Planning Board for arresting this menace. And a rodent control campaign used to be run twice a year before sowing of Kharif and Rabi crops. But now there is no regular campaign across the state as the farmers and Agriculture Department officials deal with the problem at their own level. "Under that policy, we used to ask farmers entire village to bring around



one kg boiled wheat/cracked wheat grain or porridge, which would then be marinated in Heeng (Asafoetida) water and sugar power. This mixture would be taken to a common place in the village put in a large utensil by the department officials and then Zink Phosphoide and mustard oil added at the rate of 25 gm and 20 gm per kg grain, respectively and then the same grain handed over to the farmers in same quantity which they had brought," said Chief Agriculture Officer (CAO), Faridkot, Dr Harnek Singh Rode, who had launched rodent control in their district where paddy with DSR technique was sown. The same method is applied to the other rodenticide. One kg rodenticide laced grains are sufficient for one hectare of the area as 100 doses in the small paper are made from it.

### What Is the Method of Using Rodenticides for Killing Rodents?

"Farmers are asked to identify borrows in their respective fields and then they are asked to fill them with earth so that the next day if the earth is found removed over the ground, it would be an indication that the rodents were there and then farmers will place one such dose in paper inside each borrow and then cover it with earth again. When the rat will enter the burrow again, it will get attracted to the grain and eat it and get killed in 24 hours," said Dr. Neena, adding that **the dose of Zink Phosphoide cannot be repeated for two months while the dose of Bromadiolone can be repeated after 15 days**. Director, Agriculture Department, Punjab, Dr Sutantar Kumar Airi said that such doses must be kept at a dry place, and to wipe out the rodent menace, **this action must be done on a single day at the same time in the entire village**. "If a portion of a side of the village is left then rodents will get alerted and they will not venture in such fields for some time where the medicine is kept and will return with huge population after a gap of the period and attack the crop and damage it," he explained, adding that **they bite any type of the crop because their incisors (front teeth) grow continuously and biting is the best method for them to keep their size under control**.

### What the Indigo Layoffs Mean for India's Aviation Sector

- India's largest airline IndiGo, which is also the country's only cash-positive airline announced laying off 10 per cent of its workforce because of the economic crisis triggered by the Covid19 pandemic. IndiGo's move is worrying for other airlines in the country given that the company has the strongest balance sheet among its peers.

### What Led to Indigo Laying Off Its Employees?

The two-month ban on scheduled domestic passenger flights in India from March 26 to May 24 had a severe impact on the financial condition of airlines. The lockdown caused non-recoverable loss of revenue leading to airlines taking severe cost-cutting measures, including salary cuts, furloughs and lay-offs. In June, which was the first full month of domestic flight operations since the resumption, IndiGo recorded a passenger load factor of 60.7 per cent, while having a market share of 52.8 per cent during the month. Last month, the company declared a net loss of Rs 870.80 crore for March-quarter of 2020, with its free cash flow depleting to Rs 8,928.1 crore as of March 31, compared with Rs 9,412.8 crore as of December 31, 2019. The company had also detailed a cost-reduction plan that entailed accelerated replacement of its older generation aircraft. The airline had also announced leave without pay for its pilots last month as a temporary measure on account of the reduced capacity utilisation, and had said that it would be reviewed on the basis of changes in its operational capacity.



### What Is the Need for Airlines to Cut Costs?

Airline business is a high fixed cost business with major expenses including fuel costs (around 30-35 per cent of total costs), lease charges (around 30-35 per cent of total costs), and O&M (operations and maintenance) costs (around 15-20 per cent of total costs) constituting more than 85-90 per cent of the total costs. However, unlike manufacturing companies, the revenues for airlines are perishable. During the lockdown, when airlines were operating only cargo flights, the oil retailers had slashed the prices of aviation turbine fuel by almost two-thirds but started raising the prices soon after operations resumed. This led to airlines looking for alternative avenues to reduce their overheads at a time when they have been unable to realise full revenues due to weak demand for air travel.

### What Will Be the Impact of Indigo's Move to Cut Jobs?

For employees who will lose their jobs, it will be difficult to find new jobs in the airlines or hospitality sectors given that these industries are still reeling under the financial stress caused by the pandemic.

### How Is the Overall Situation for Airlines Sector?

According to the International Air Transport Association (IATA), 2020 is the worst year in aviation history and airlines in Asia-Pacific region alone are expected to report losses to the tune of \$29 billion. Indian carriers are expected to lose revenues of \$11.61 billion during 2020, compared with 2019 and this is expected to potentially impact 3.06 million jobs in aviation and sectors dependent on aviation. "Industry conditions are such that one or more airline failures appears inevitable. Airlines have limited options to turn to for funding except their promoters, given that third party investors will be reluctant to provide capital right now, and the government is unwilling to do so," CAPA India said.

### Is Demand Expected to Return Any Time Soon?

Airlines and their representatives have said that while they have been taking steps to address the concerns, fear of flying in an enclosure, in addition to lack of clarity from states pertaining to lockdown and quarantine norms have proven to be a dampener on airline revenues. According to IATA, the fall in the number of air travellers during 2020 will be at 93.27 million passengers in India alone, representing a 49 per cent drop from 2019.

Life & Science

### Why Asteroid 2020 ND is 'Potentially Dangerous' To the Earth

- NASA has issued a warning that a huge "Asteroid 2020 ND" will move past Earth on July 24. The asteroid, about 170 metres-long, will be as close as 0.034 astronomical units (5,086,328 kilometres) to our planet, and is travelling at a speed of 48,000 kilometres per hour. Its distance from Earth has placed it in the "potentially dangerous" category.

### Potentially Hazardous Asteroids (PHAs)

According to NASA, "Potentially Hazardous Asteroids (PHAs) are currently defined based on parameters that measure the asteroid's potential to make threatening close approaches to the Earth. Specifically, all asteroids with a minimum orbit intersection distance (MOID) of

Shatabdi Tower, Sakchi, Jamshedpur



0.05 au or less are considered PHAs.” NASA classifies objects like these as ‘near-Earth objects’ (NEOs) as they get nudged by other planets’ gravitational attraction resulting in their proximity to our solar system. Even so, it is not necessary that asteroids classified as PHAs will impact the Earth. “It only means there is a possibility for such a threat. By monitoring these PHAs and updating their orbits as new observations become available, we can better predict the close-approach statistics and thus their Earth-impact threat,” NASA says.

### The Study of Near-Earth Objects (NEOs)

NEOs are comets and asteroids nudged by the gravitational attraction of nearby planets into orbits which allows them to enter the Earth’s neighbourhood. These objects are composed mostly of water ice with embedded dust particles, and occasionally approach close to the Earth as they orbit the Sun. NASA’s Centre for Near-Earth Object Study (CNEOS) determines the times and distances of these objects as and when their approach to the Earth is close.

### The Level of Threat

According to The Planetary Society, there are estimated to be around 1 billion asteroids having a diameter greater than 1 metre. The objects that can cause significant damage upon impacting are larger than 30 metres. Every year, about 30 small asteroids hit the Earth, but do not cause any major damage on the ground. NASA’s Near-Earth Object Observations Program finds, tracks and characterises over 90 per cent of the predicted number of NEOs that are 140 metre or larger (bigger than a small football stadium)– which according to the space agency are of “the greatest concern” due to the level of devastation that their impact is capable of causing. However, it is important to note that no asteroid larger than 140 metre has a “significant” chance of hitting the Earth for the next 100 years.

### Deflecting Asteroids

Over the years, scientists have suggested different ways to ward off such threats, such as blowing up the asteroid before it reaches Earth, or deflecting it off its Earth-bound course by hitting it with a spacecraft. The most drastic measure undertaken so far is the Asteroid Impact and Deflection Assessment (AIDA), which includes NASA’s Double Asteroid Redirection Test (DART) mission and the European Space Agency’s (ESA) Hera. The mission’s target is Didymos, a binary near-Earth asteroid, one of whose bodies is of the size that could pose the most likely significant threat to Earth. In 2018, NASA announced that it had started the construction of DART, which is scheduled to launch in 2021 with an aim to slam into the smaller asteroid of the Didymos system at around 6 km per second in 2022. Hera, which is scheduled to launch in 2024, will arrive at the Didymos system in 2027 to measure the impact crater produced by the DART collision and study the change in the asteroid’s orbital trajectory.

## A Look at NASA’s Mission to Mars

### → What Has NASA’s Experience Been with Multiple Generations of Mars Rovers?

NASA’s incredible journey of driving on Mars started about 23 years ago, in 1997: when the Mars Pathfinder Mission with the Sojourner rover egressed on the Martian soil. It was an unforgettable experience to be part of the Operations team for Mars Pathfinder: a mission put together on a very tight budget that many thoughts would fail. However, Mars Pathfinder would succeed and, in the process, would change the subsequent history of Mars Exploration. Thus, NASA would go on to send the twin rovers, Spirit and Opportunity, to Mars





in 2003, followed by Curiosity in 2012, followed by Perseverance that is scheduled to launch later today. The Sojourner rover, a technology demonstration mission, lasted for 83 days. Spirit and Opportunity set a new paradigm of a long-term robotic presence on Mars, lasting about 6 and 15 years, respectively. Curiosity landed in 2012: and continues to operate today. With each rover generation, the number and the complexity of scientific instruments increased. Sojourner was a small rover, almost like a toy, a couple of feet in length and width. Spirit and Opportunity were much larger: about the size of a golf cart. Curiosity and Perseverance are the size of a small car. The science returns of exploring Mars with a rover have been very significant. Rovers provide a way to study the local area in much higher resolution than is possible from an orbiting spacecraft. In addition, rovers have a suite of instruments from drills to spectrometers to microscopic imagers: these instruments help understand the local geology much like a field geologist would study rocks on Earth. In addition, starting with Spirit and Opportunity, rovers have acted as mobile weather stations on Mars that monitor changes in the Martian atmosphere continuously over multiple years. With each new generation of rovers, NASA has added new capabilities and a somewhat different instrument suite to answer important scientific questions. Examples would be the addition of a drill on Spirit and Opportunity, and a mass spectrometer, an instrument to measure isotopes of different elements, for Curiosity. With the launch of Mars Perseverance, the fourth generation of Mars rovers, NASA will take forward this tradition.

### What Is New with Perseverance?

First, Perseverance will carry a unique instrument, MOXIE or Mars Oxygen ISRU Experiment: which for the first time will manufacture molecular oxygen on Mars using carbon dioxide from the carbon-dioxide-rich atmosphere. There is the new push for ISRU at NASA: in NASA jargon, ISRU means In Situ Resource Utilization: or the use of local resources to meet human needs or requirements of the spacecraft. Without ISRU, exploration of Mars in the future decades will be incredibly expensive and thereby impossible. If astronauts have to carry oxygen or water or rocket fuel for their journey for a two-year journey to Mars and back, the cost will be understandably excessive. In a way, this is similar to a traveller from New Delhi having to carry their own oxygen, food supplies and aircraft fuel for a two-year stay in New York: the cost per passenger will be incredibly high. If oxygen can be successfully extracted on Mars in some significant scale, this can have two direct advantages: first, the oxygen can be used for human visitors to Mars, and second, the oxygen can be used to manufacture rocket fuel for the return journey. Thus, if the technology demonstration is successful, NASA can easily scale up the oxygen generation rate per day for MOXIE by a hundred times: this would be of great use for a future human mission to Mars. Second, Perseverance will carry Ingenuity, the first ever helicopter to fly on Mars. This is the first time NASA will fly a helicopter on another planet or satellite. Ingenuity is a technology demonstration: the challenge, of course, is to fly the helicopter in the thin atmosphere of Mars. Like a drone on Earth, a Mars helicopter can help in rover drive planning and in fetching samples from locations that the rover cannot safely drive to. If this technology demonstration is successful, we will see a greater role for such helicopters in future missions. Third, Perseverance is the planned first step to bring back rock samples from Mars for analysis in sophisticated laboratories on Earth: with the goal of looking for biosignatures: or signatures of present or past life. Perseverance will collect samples and a second rover mission will fly within a decade to help transport the rock samples back to Earth. The analysis of Martian rocks on Earth will likely provide a reliable indication of whether life on Mars is feasible in the past or at present.



## What Is the Reason for The Near-Term Interest in Mars?

Mars is a fascinating planet for humankind. Located in the very near backyard (about 200 million km away), Mars is a planet that humans can aspire to visit or to stay for a longer duration. Mars had flowing water and an atmosphere in the distant past: and perhaps conditions to support life. But, in the near term, the increase in interest related to Mars is because of Elon Musk's plans for commercial travel. A human mission to Mars has always been an aspiration for different space agencies including NASA. Though technologically possible, the cost was known to be prohibitive: perhaps of the order of \$500 billion- or 20-times NASA's budget. Hence, NASA's plans to send astronauts to Mars have been, in large part, aspirational: in other words, without adequate funding. Musk has unveiled a new architecture to get to Mars. Musk's vision is to use a combination of cost-saving measures, like reusable launch vehicles, in-orbit refuelling and manufacturing rocket fuel on Mars, to reduce the cost of a journey to Mars down by 1/1000th. Thus, the price per passenger for going to Mars on his Starship Spaceship would be on the order of \$200,000 or Rs 1.5 crore. The launch vehicle at the centre of Elon Musk's plans is the Starship Spacecraft: the most powerful launch vehicle ever built, with the ability to transport 100 metric tonnes to Earth Orbit. SpaceX is scheduled to fly around the Moon with its first private passenger in 2023: and has the goal for a crewed mission to Mars as early as 2024. As we speak, the Starship is being built and tested in a sleepy South Texas town called Boca Chica. In a decade, SpaceX with its Starship Spacecraft, might transform space travel and realise Musk's dream of turning humankind into a multi-planetary species.

NASA's newest rover Perseverance – other rovers have landed on Mars earlier – will look for signs of habitable conditions on Mars and microbial life in its ancient past. Over its mission duration of one Martian year (687 Earth days), it will collect Martian rock and sediment samples for analysis on Earth.

If all goes well, would be NASA's 10th successful Mars landing since 1975

## What China's Mars Mission Is About, And How It Signals Space Race With US

- China launched a rover to Mars, signalling a space race with the US – NASA is set to launch its own rover on July 30.

### The China Mission

China's first Mars probe is called Tianwen-1 (formerly Huoxing 1), which means "Questions to Heaven". The spacecraft consists of an orbiter, a lander and a rover, and the mission aims to study the thickness and sub-layer distribution of the Martian soil. The spacecraft, weighing 5 tonnes, launched on a Long March 5 rocket from Xichang, China. The scientific goals of the mission include studying Martian topography and geology and determining the composition of the surface material, climate and environment. Tianwen-1 will reach the Red Planet's orbit in February 2021. The rover will land on Mars in May. The orbiter will use high-resolution cameras to search for a suitable landing site somewhere in the Utopia Planitia region. It weighs around 240 kg and will carry cameras, a subsurface radar, a spectrometer, a magnetometer, and atmospheric sensors.

### The Space Race

Space exploration has been dominated by the US and Russia for more than 50 years. China sent a human into space in 2003. It has also started plans to set up a space station by 2022. China has also sent two rovers to the Moon, with the second landing on the far side. Mars is



a bigger challenge, however. As McDowell told AFP, the much greater distance means “a bigger light travel time, so you have to do things more slowly as the radio signal round trip time is large”. It also means “you need a more sensitive ground station on Earth because the signals will be much fainter”. This isn’t China’s first attempt at Mars. In 2011, a Chinese orbiter accompanying a Russian mission was lost when the spacecraft failed to get out of Earth’s orbit after launching from Kazakhstan, eventually burning up in the atmosphere. This time, China is going at it alone. It also is fast-tracking, launching an orbiter and rover on the same mission instead of stringing them out. Landing on Mars is notoriously difficult. Only the U.S. has successfully landed a spacecraft on Martian soil, doing it eight times since 1976.

- China’s **tandem spacecraft – with both an orbiter and a rover – will take seven months to reach Mars.**

### Arab ‘Hope’ to Mars Takes off from Japan

- The UAE launched the Arab world’s first mission to Mars. The launch of the spacecraft Amal (Hope) took place from the Tanegashima Space Center, Japan, aboard a Mitsubishi Heavy Industries’ H-II A rocket. The Japanese rocket, carrying the probe developed by the United Arab Emirates (UAE) lifted off from the Tanegashima Space Centre in southern Japan. The launch of the probe, known as “Al-Amal” in Arabic, had twice been delayed because of bad weather, but the Monday lift-off appeared smooth and successful. Only the United States, India, the former Soviet Union, and the European Space Agency have successfully sent missions to orbit the fourth planet from the sun, while China is preparing to launch its first Mars rover later this month.

### Distance from Earth

The Emirati project is one of three racing to Mars, including Tianwen-1 from China and Mars 2020 from the United States, taking advantage of a period when the Earth and Mars are nearest. In October, Mars will be a comparatively close 38.6 million miles (62.07 million kilometres) from Earth, according to NASA. If a spacecraft is launched too early or too late, it will arrive in the planet’s orbit when the planet is not there. “Hope” is expected to enter Mars orbit by February 2021, marking the year of the 50<sup>th</sup> anniversary of the unification of the UAE, an alliance of seven emirates. Unlike the two other Mars ventures scheduled for this year, it will not land on the Red Planet, but instead orbit it for a whole Martian year, or 687 days.

### Series of Missions to Mars – Why, When

#### Perseverance: Hunt or Life

NASA’s rover Perseverance will look for signs of habitable conditions on Mars and microbial life in its ancient past. Over its mission duration of one Martian year (687 Earth days), it will collect Martian rock and sediment samples for analysis on Earth. The rover is equipped with specialised equipment to collect data, analyse weather conditions that can help plan for future human missions, and produce oxygen from the carbon-dioxide-rich atmosphere. Perseverance is expected to touch down on Mars on February 18, 2021. NASA’s Curiosity rover has been exploring Mars since 2012. It remains active although its targeted mission life is over.



### Hope: Atmospheric Data

Carrying three instruments including a high-resolution camera and a spectrometer, the spacecraft is on an orbital mission to collect data on Martian climate dynamics and help scientists understand why Mars's atmosphere is decaying into space. Hope is the UAE's fourth space mission and first interplanetary one. The previous three were all Earth-observation satellites.

### Tianwen-1: Soil Study

China's first Mars probe aims to study Martian topography and geology and determine the composition of the surface material, climate and environment. It weighs around 240 kg and will carry cameras, a subsurface radar, a spectrometer, a magnetometer, and atmospheric sensors.

## Why Mars Landing Missions Run Risk of Interplanetary Contamination

- As ambitious space missions are proliferating, along with advances in commercial space flight, **astrobiologists have expressed concerns about possible 'interplanetary contamination'**. Such contamination is of two types – **forward contamination**, meaning the transport of Earth-based microbes to other celestial bodies; and **back contamination**, or the transfer of extra-terrestrial organisms (if they exist) into the Earth's biosphere.

### Forward Contaminating Mars

In the past, space missions have established physical contact with astronomical bodies such as comets and asteroids, and crewed missions have landed on the Moon. However, since these bodies are known to be hostile to life, the possibility of their forward contamination has not been as a pressing issue. In the case of Mars, however, space missions have already discovered the possible presence of liquid water on the planet, either in the subsurface today or at some point in its past, and are now actively looking for signs of life. Astrobiologists say that if there is a chance that Mars has life, even in its most primitive form, there is an ethical obligation on humanity to ensure that microbes from Earth do not disturb a possible Martian biosphere, allowing it to evolve in its own way. Secondly, experts worry that Earth-based organisms could spoil the integrity of the Red Planet's samples that rovers want to study – a highly disruptive concept for scientists who are looking for signs of native Martian life.

### Back Contamination

NASA also plans for a Mars sample-return mission, which would bring samples of the Red Planet back to Earth, possibly by 2031. Scientists, however, all but rule out back contamination. **The suggestion that Martian microbes (if they exist) would infect human beings—causing a catastrophe like the current pandemic— is highly unlikely, given the fact that their biochemistry would be markedly different from that on Earth.**

### Planetary Protection

The United Nations Outer Space Treaty of 1967, which serves as a bulwark against the militarisation of space, also requires nations to worry about contamination risks. Its 110 state parties include the US, Russia, China, and India. To ensure compliance with the Treaty, the Committee on Space Research (COSPAR) lays down a 'planetary protection policy' that aims to limit the number of microbes sent to other planets, as well as ensuring that alien life does





not cause havoc on Earth. According to NASA, the guidelines have had far-reaching implications on human spacecraft design, operational procedures, and overall mission structure. Both NASA and the ESA have also appointed Planetary Protection Officers. To prevent forward contamination, space missions take care to ensure that spacecraft are sterilised. Previous Mars missions, such as NASA's Viking landers of the 1970s, were all sterilised before being launched into space. Last week, NASA's Perseverance mission was postponed for a second time to resolve a potential contamination issue. In the case of back contamination, sterilisation would not be an option—as this would ruin the extra-terrestrial samples. Containment would be the only option to break the chain of contact between possible alien microbes and life on Earth.

## What is BlackRock Android Malware and Are You Vulnerable?

- ➔ Security firm ThreatFabric has alerted about a new malware, called BlackRock, which can steal information like passwords and credit card information from about 377 smartphone applications, including Amazon, Facebook, Gmail and Tinder. Since these are very popular apps, the threat posed by the BlackRock Android malware is quite high.

### What is BlackRock Android Malware?

BlackRock isn't exactly a new malware. In fact, it is based on the leaked source code of the Xeres malware, itself derived from malware called LokiBot. The only big difference between BlackRock and other Android banking trojans is that it can target more apps than previous malwares.

### How Does Blackrock Android Malware Work?

BlackRock works like most Android malware. Once installed on a phone, it monitors the targeted app. When the user enters the login and/or credit card details, the malware sends the information to a server. BlackRock uses the phone's Accessibility feature, and then uses an Android DPC (device policy controller) to provide access to other permissions. When the malware is first launched on the device, it hides its icon from the app drawer, making it invisible to the end-user. It then asks for accessibility service privileges. Once this privilege is granted, BlackRock grants itself additional permissions required to fully function without having to interact any further with the victim. At this point, the bot is ready to receive commands from the command-and-control server and execute overlay attacks. But BlackRock isn't limited to online banking apps and targets general purpose apps across various categories of Books & Reference, Business, Communication, Dating, Entertainment, Lifestyle, Music & Audio, News & Magazine, Tools, and Video Players & Editors. The researchers noted that BlackRock steals credentials such as usernames and passwords from 226 apps, including PayPal, Amazon, eBay, Gmail, Google Pay, Uber, Yahoo Mail, Amazon and Netflix, among others. In addition, the malware steals credit-card numbers from an additional 111 apps, including Facebook Messenger, Google Hangouts, Instagram, PlayStation, Reddit, Stype, TikTok, Twitter, WhatsApp and YouTube. ThreatFabric says the malware can be used to send and steal SMS messages, hide notifications, keylogging, AV detection, and much more.

### BlackRock Android Malware Makes Antivirus Apps Useless

The new malware is so powerful that it makes antivirus applications useless. "The Trojan will redirect the victim to the HOME screen of the device if the victims tries to start or use



antivirus software as per a specific list including Avast, AVG, Bitdefender, ESET, Symantec, Trend Micro, Kaspersky, McAfee, Avira, and even applications to clean Android devices, such as TotalCommander, SD Maid or Superb Cleaner,” ThreatFabric explains in its blog.

### [How to Protect Your Phone from Blackrock Android Malware?](#)

Right now, the trojan is yet to be spotted on Google Play Store and is distributed as a fake Google Update on third-party stores. Your best bet is to download apps only from the Google Play Stores, use strong passwords, beware of spam and phishing emails, use an antivirus app if possible, and check app permissions. A patch could be on the way.

### [Raksasa Cockroach from The Deep: The Stuff Nightmares Are Made Of](#)

→ A new creature has risen from the depths of the ocean—and it is a cockroach. A team of researchers from Singapore was scouring the unexplored waters of the **Indian Ocean in Bantan**, off the southern coast of West Java in Indonesia in 2018 when they discovered an animal that seemed to be wearing the helmet of Darth Vader, the epic dark lord of the Star Wars. Earlier this month, after two years of study, the team confirmed the discovery of a new species called **Bathynomus raksasa**, a “supergiant” Bathynomus, and which has since been described as the “cockroach of the sea”. While being a significant development in the scientific knowledge about the deep oceans, the arrival of the cockroach has triggered excitement mostly on account of the creature’s gruesome visage, which most of those who have seen the images have described as the stuff nightmares are made of.

### [So How Evil Is the Raksasa?](#)

The Bathynomus raksasa is a giant isopod in the genus Bathynomus. The giant isopods are distantly related to crabs, lobsters, and shrimps (which belong to the order of decapods), and are found in the cold depths of the Pacific, Atlantic, and Indian Oceans. The cockroach of the sea has 14 legs but uses these only to crawl along the bed of oceans in search of food. The Darth Vader appearance is due to the shape of the cockroach’s head and compound eyes. The Bathynomus raksasa measures around 50 centimetres (1.6 feet) in length, which is big for isopods, which normally do not grow beyond 33 cm (just over a foot). Isopods that reach 50 cm are referred to as supergiants. The only member of the isopod species that exceeds the raksasa in size is the Bathynomus giganteus, which is commonly found in the deep waters of the western Atlantic Ocean.

### [Who Discovered the Cockroach?](#)

The 31-member group, comprising researchers and support staff, was led by Peter Ng of the Lee Kong Chuan Natural History Museum of the National University of Singapore (NUS). The project was conducted jointly by a NUS and Research Center for Oceanography (RCO) of the Indonesian Institute of Sciences (LIPI). Using techniques ranging from trawling to dredging, they studied 63 sites over two weeks and returned with 12,000 of specimens from the deep sea, ranging from jellyfish, sponges, worms and molluscs to crabs, starfish, and urchins. The haul reportedly had 800 species, including 12 that were unknown to scientists.

### [How Does the Discovery of The Cockroach Matter to Science?](#)

Until now, the scientific community knew of five supergiant species, two of which are found in the western Atlantic. This is the first record of the genus from Indonesia. “Bathynomus raksasa is the sixth ‘supergiant’ species from the Indo-West Pacific, and is one of the largest



known members of the genus,” the researchers wrote. The discovery takes the number of known giant isopods to 20. As the Bathynomus raksasa reveals its secrets, it will contribute towards increasing knowledge about the deep.

### What Does the Raksasa Eat? Can You Eat Them?

As a scavenger, Bathynomus raksasa eats the remains of dead marine animals, such as whales and fish, but can also go for long periods without food, a trait that it shares with the cockroach. The raksasa prefers to do its own thing and does not interfere with others. The cockroach of the sea is found in large numbers primarily because most predators are not interested in them. Although some isopods are indeed eaten in some parts of east and southeast Asia, the raksasa has very little meat and a thick shell, and human beings are unlikely to find them delicious.

### Previously Unknown Faults at The Foot of The Himalaya Discovered

- Data from an oil and gas exploration company has helped geologists discover a series of faults at the foot of the Himalaya. The international team notes that this fault system in the south-eastern region of Nepal has the potential to cause earthquakes in the country. The team looked at seismic reflection data, routinely collected by exploration companies looking for oil and gas. In this method, seismic waves are produced by small explosions at multiple sources, and many recorders called geophones record the sound echoing off layers beneath the surface.

### Composite Image

The signals are combined to make an image that looks like a slice showing layers through the top few kilometres of the Earth’s crust. The researchers were able to identify the faults because the pattern of layers showed bends. “This network of faults show that the Himalayan deformation reaches further [about 40 kilometres further south] than previously thought.”

### Seismic Waves

“The faults we detected don’t appear to extend into India, but seismic waves from an earthquake occurring on them might affect regions of India near the border... other similar faults might be present elsewhere along the southern edge of the Himalaya and might extend beneath northern India. We don’t currently have access to data that would help us explore this.” He adds that the work with seismologists might add to the present study by clarifying how these faults move. “The problem is that good scientific records of earthquakes go back less than a hundred years. During this time there don’t seem to have been any earthquakes on the faults that we discovered. However, the time between earthquakes on typical faults is often hundreds or thousands of years, and is very haphazard,” explains Prof. Waldron. As to whether 2015 Nepal earthquakes could have had a connection to this fault, he answered that they “occurred much further within the mountain belt. As far as we know, the faults we newly discovered did not move in that event.” Prof. Waldron adds: “**General earthquake preparedness is most important in my opinion, rather than trying to guess where the next earthquake will be. Making sure buildings are safe in an earthquake is important.**”



## Donald Trump Says He ‘Aced’ A Cognitive Test. What Does That Really Mean?

→ In recent interviews, President Donald Trump has been boasting about a cognitive test that he took recently and “aced.” It’s not the first time — he made similar remarks in January 2018. But he once again has not said what test he took or what his score was, making it difficult to know what to make of his claims. He has, however, provided a few clues. In an interview with Chris Wallace on “Fox News Sunday,” in which Wallace said one question was to identify an elephant, Trump did not contradict him. One popular test, the **Montreal Cognitive Assessment, or MOCA**, has a drawing of three animals that patients are asked to identify. It is a 10-minute screening exam meant to highlight possible problems with thinking and memory. But it is by no means definitive or even diagnostic, experts pointed out. And as the president tries to draw a contrast between his mental faculties and those of former Vice President Joe Biden, a fellow septuagenarian he expects to face off against in November’s election, some experts criticize his politicization of such cognitive screening tests. “The way our president is having a conversation about mental health is not helpful,” said Dr. Jason Karlawish, a dementia researcher at the University of Pennsylvania’s Perelman School of Medicine. “You would think he would understand clearly what the test result was and why the test was done,” Karlawish said, “and not turn it into a competition about mental health.” Here are some answers to questions about cognitive exams, what they measure and how specialists decide whether a patient really is impaired.

### What is the MOCA?

This screening test was designed about 20 years ago as a possible replacement for another test, the Mini-Mental State Examination, which had been widely used since the 1970s to look for outright dementia. The MOCA is used in all 31 of the National Institute on Aging’s Alzheimer Disease Centers. While there are many such screening tests, the **MOCA is gaining acceptance because it is a bit harder than the Mini-Mental and can pick up problems that occur in the earliest stage of dementia, mild cognitive impairment — a sort of everyday forgetfulness.** About 1 in 5 people over age 65 have MCI, and roughly one-third will develop Alzheimer’s disease within five years.

### What Does the Test Ask?

MOCA has approximately 30 questions meant to briefly assess memory, attention and concentration, control and self-regulation, and other mental skills. To test memory, for example, the examiner reads five words at a rate of one per second and asks the subject to repeat them immediately and then again after some time has passed. To assess attention and concentration, subjects are read a list of five digits and asked to repeat them in the order they were provided and then in reverse order. The subjects also are asked to count backward from 100 in increments of 7. Other exercises include drawing a clock with the hands pointing to 11:10 and identifying a lion, rhino or camel. A perfect score is 30. A score from 26 to 30 is considered normal.

### Do Medical Societies Recommend Cognitive Screenings?

No. Such exams are not like mammograms for breast cancer and colonoscopies for colon cancer. With those tests, doctors can get a diagnosis and begin treatment. But they are only part of an assessment of the mental functioning of an older adult. It can be more valuable to ask family members or others who know the patient well whether the person has been inefficient at tasks they once did well, like negotiating a new route when driving or following





a recipe. Screening tests like the MOCA cannot rule out declines in reasoning or memory, or difficulties with planning or judgment. The test is just too blunt an instrument, and for many high-functioning people, too easy. For that reason, dementia specialists say they would not make a diagnosis based on a screening exam like the MOCA. Nonetheless, Medicare recipients are often given cognitive screenings, Karlawish said. That is because Congress instituted a requirement that Medicare cover a brief cognitive screening test as part of the annual wellness exam.

### Shouldn't A Perfect Score Be Reassuring?

Maybe. But the test is not that difficult, and the problem with a single test is that the doctor doesn't know what the subject's starting point was. Usually it's the trend over time that suggests a problem. And even then, the tests can be too blunt an instrument to detect declines in many highly educated people for whom, say, counting backward from 100 by 7's is not a challenge until dementia is well-established.

### So How Do Doctors Detect Cognitive Problems?

It's not easy. What physicians look for is a slow decline. They start by simply talking to the patient: Has she noticed memory problems, or issues with judgment or reasoning? It's also important for the physician to talk to someone who knows the patient well because people who are slipping cognitively do not always recognize it. "Lack of awareness or insight can be part of the package" of dementia, said Dr. Ronald Petersen, director of the Alzheimer's Disease Research Center at the Mayo Clinic in Rochester, Minnesota. (He emphasized that he was speaking in general terms, not specifically about Trump's case.) If the doctor is concerned, and if a family member also says the subject is forgetful or repeating himself, and if this behaviour is becoming a pattern – all those factors will influence the decision to "pursue this to the next level," Petersen said. Some patients simply prefer not to know if they are developing dementia. But those who do are given a neuropsychological test much more difficult and intense than the MOCA. And doctors will repeat it over time. In such a test, for example, the examiner reads a short story and asks the subject to repeat it. Thirty minutes later, the subject is asked to repeat the story again. The subject is also asked to draw geometric shapes and to remember them a half-hour later. The examiner may ask the subject to recall a list of 15 words as many as five times and then recall them 30 minutes later.

### What About Alzheimer's?

The results of neuropsychological tests can tell doctors how a subject is performing relative to others of the same age, sex and education level. If the doctor thinks something is amiss, a clinical exam might follow to figure out what might be causing the problem. Most cases of dementia result from Alzheimer's disease. An MRI scan can help with diagnosis. It can detect a stroke and other conditions. It also can determine if the hippocampus, the memory centre of the brain, is shrinking, as happens in Alzheimer's. A PET scan that uses glucose measures the activity of brain cells. Cells starting to falter and die, especially in certain areas of the brain, may be a sign of Alzheimer's disease. Neither scan is itself diagnostic, Petersen said. Instead, the results add to the weight of evidence suggestive of Alzheimer's disease. Another test, which costs \$5,000 to \$7,000 and generally is not covered by insurance, is a scan to look for amyloid protein in the brain. Occasionally people have these accumulations but not dementia. But because amyloid is a part of the Alzheimer's pathology, a lack of it means the subject does not have Alzheimer's disease.



## Arming India's Poor Against the Pandemic

→ There have been considerable discussions in scientific circles on the importance of vitamin D in these days of the COVID-19 pandemic. Vitamin D deficiency can affect COVID-19 high-risk patients, particularly those who are diabetic, have heart conditions, pneumonia, obesity and those who smoke. It is also associated with infections in the respiratory tract and lung injury. Besides, vitamin D is known to help in having the right amount of calcium in the bones, catalyse the process of protecting cell membranes from damage, preventing the inflammation of tissues and helping stop tissues from forming fibres and weakening bones from becoming brittle, leading to osteoporosis. Thus, the levels of vitamin D (and calcium) in human (and animal) bodies need to be monitored and when necessary, and administered in appropriate doses and frequency, externally by a trained clinician.

### Vitamin D and Its Prevalence

The easy to read site describes vitamin D in detail. It is produced when sunlight (or artificial light, particularly in the ultraviolet region of 190-400 nm wavelength) falls on the skin and triggers a chemical reaction to a cholesterol-based molecule, and converts it into calcidiol (adding one hydroxyl group, also called 25(OH)D technically) in the liver and into calcitriol (or 1, 25(OH)2D) in the kidney. It is these two molecules that are physiologically active. It is suggested that the level of 25-OHD in the range 30-100 ng/ml is thought to be sufficient for a healthy body; levels between 21-29 ng/ml are considered insufficient, and levels below 20 ng/ml mean the individual is deficient in the vitamin. Since sunlight is important for the generation of vitamin D, tropical countries have an advantage over the northern countries. India, being a tropical country, one would expect naturally derived vitamin D levels to be good. Yet, it is not so! Indeed, a paper by Sandhya Selvarajan and colleagues, titled, "Systematic review on vitamin D level in apparently healthy Indian population and analysis of its associated factors" was published in September 2017, in Indian Journal of Endocrinology and Metabolism, 2017. The authors conclude that India, a nation of abundant sunshine, is surprisingly found to have a massive burden of vitamin D deficiency among the public irrespective of their location (urban or rural), age or gender, or whether they are poor or even rich. Hence, it is clear that vitamin D supplementation is necessary for most Indians to treat its deficiency.

## In Covid Year, why 'Unsung Heroine of DNA' Rosalind Franklin Needs to be Remembered for More

→ Since her death at age 37 in 1958, the British scientist Rosalind Franklin has been remembered mostly as the "wronged heroine of DNA". And as a victim of male prejudice, deprived of the Nobel Prize that went instead to three men who had relied on her work to construct the double-helix structure of DNA. In recent years, though, science historians and commentators have stressed all the other achievements she needs to be remembered for. Especially in 2020, when her birth centenary coincides with the Covid-19 pandemic. Franklin was one of the leading virologists of her time – and more. Saturday is her 100th birth anniversary.

### DNA Breakthrough

In 1952, Raymond Gosling, a graduate student at King's College London, took a historic X-ray photograph under Franklin's supervision. Photo 51, as it is called, demonstrates the now-



familiar, double-helix structure of DNA. Four years after Franklin died of ovarian cancer, the 1962 Nobel Prize for Medicine went to James Watson, Francis Crick and Maurice Wilkins for their work on the structure of DNA. The Nobel is not awarded posthumously. Wilkins was Franklin's colleague at King's College. He had shown Photo 51 to Watson, then at Cambridge, without Franklin's knowledge. Her precise measurements, too, had reached Watson and Crick through "irregular routes", Franklin's biographer Brenda Maddox, now deceased, wrote in an article for Nature in 2003. Watson and Crick used the knowledge gained from Photo 51, Franklin's unpublished notes, and their own intuition to construct the double-helix structure of DNA. Wilkins improved on their model over the years, leading to the three sharing the Nobel.

### Her Other Achievements

"During the Second World War, she carried out research into coal and graphite that proved important for gas-masks, the PPE of that time." From 1953 until her death, she worked with John Desmond Bernal at Birkbeck College, heading a team that analysed the structure of the tobacco mosaic virus. After mapping that virus, she went on to investigate polio. "It is because of Franklin, her collaborators and successors, that today's researchers are able to use tools such as DNA sequencing and X-ray crystallography to investigate viruses such as SARS-CoV-2," Nature wrote in an editorial this week.

### Professional Career Scientist

Franklin did not know that three men would win the Nobel for constructing a DNA model relying on her evidence. "Still more fortunately, she had no way of foreseeing that she would be publicly denigrated in Watson's bestselling book, The Double Helix (1968)," Fara said. Watson was dismissive of Franklin in his book. For example: "Clearly Rosy had to go or be put in her place... Unfortunately, Maurice could not see any decent way to give Rosy the boot." Fara described Franklin as a professional career scientist, whose aim was to increase knowledge, not score points off rivals. "Rosalind Franklin repeatedly fought to establish equality with men, but her top priority was academic success."

### What Is Inflammaging? Does It Have A Role in Severe Covid-19?

- As one ages, inflammation throughout the body reaches higher levels. Known as 'Inflammaging', this can inhibit immunity. Because the most severe Covid-19 cases have occurred mostly in older people, researchers are investigating whether Inflammaging has a role. Is it the trigger that causes extreme inflammatory responses, which are common in the lungs of severe Covid-19 patients? In a Perspective published in the journal Science, researchers Arne Akbar and Derek Gilroy of University College London discuss the impact of Inflammaging on immunity in ageing individuals. They suggest that **reducing inflammation using anti-inflammatory drugs may provide a therapeutic strategy, not only for enhancing immunity but also for potentially improving Covid-19 outcomes in older patients.** In an article introducing the Perspective, Science publisher American Association for the Advancement of Science explains how our immune system weakens with age. As this happens, our bodily defence systems respond more slowly to bacterial and viral infections, leaving the elderly more vulnerable. **In addition to the deterioration of immunity, another common condition of ageing is Inflammaging. This is characterised by chronic low-grade inflammation, which occurs without an infection. While inflammation is essential to the immune response, Inflammaging is not.** Research has shown that this state of elevated inflammation can worsen many age-related diseases, and further inhibit the response from an already declining



immune system. In the case of Covid, the Perspective suggests it could be the initial trigger that kicks off the extreme inflammatory responses seen in the most severely ill patients.

## Of Mice And SARS-Cov-2 (Surat Parvatam - Senior Research Associate, Centre For Predictive Human Model Systems, Atal Incubation Centre–Centre For Cellular And Molecular Biology (AIC-CCMB), Hyderabad)

→ Science and research have always relied on using animals to understand various human diseases. The primary reasons have been the genetic similarity between animals and humans (mice share 98% of DNA with us), and that we have developed tools to edit genes in various animals. We can edit a gene out in mice to try to understand its role in progression of human cancer. These “animal models” are supposed to represent a window to further study and understand human diseases. An animal model for a particular disease should fulfil two criteria. It should be able to “catch” that infection (in case of infectious diseases) and show the clinical outcomes and altered physiology that accompanies the disease. Many animals do not fulfil the second criteria. Amyotrophic Lateral Sclerosis (ALS) is a fatal disease that leads to loss of neurons that control our motor functions, leading to wasting of muscles, paralysis and death. While mice models of this disease also show wasting of muscles, the cause of death is blockage in the gut. Thus, drug targets that would prevent these mice from dying would be irrelevant in humans.

### Road Blocks

These systemic issues are coming to the fore with scientists trying to find the elusive vaccine/drug by attempting to cure experimentally infected lab mice, rats, hamsters and rhesus monkeys. However, they are faced with two roadblocks. Mice, the most widely used “models” to understand human diseases, cannot be infected with SARS-CoV-2. If you imagine the virus to be a lock, it needs a “key” (usually a protein) on the surface of a cell to enter. The “key” is present in humans, rhesus monkeys, to a lesser extent in hamsters, ferrets and cats, but not in mice. Scientists are now creating genetically altered mice that express this “key”, as larger animals pose additional difficulties of housing, handling and are expensive. This leads us to our second roadblock that an animal model should also reflect the clinical features. Apart from fever, sore throat, cough, pneumonia, COVID-19 infection in humans is also known to affect the heart, kidneys, intestine, and brain. While ferrets, hamsters, cats, rhesus monkeys and genetically modified mice could get infected with SARS-CoV-2, all of these develop only mild lung infection, most do not show fever, and they recover within seven–nine days. Many of them do not show the virus in organs other than the lungs, and exhibit contradictory results. A study in cats showed that the infection was more severe in kittens versus older cats. This is opposite to humans where older infected population has a higher risk for death. Those critical roadblocks bring some questions on how much these models will be able to help the scientists to find a cure, if they are able to self-limit the disease. Thus, there is need for systems and approaches that can “model” human diseases to a greater extent.

### Mini Organs

Scientists are now creating miniature 3D organ-like-structures, called “organoids” that aim to replicate a human organ. These mini organs, created using stem cells, are 200 microns (width of two human strands of hair) to a few millimetres in size. They have similar three-





dimensional structure and cellular composition as human organs, and thus, are better reflective of human biology compared to animal models. Infection of mini-lungs with SARS-CoV-2 showed that virus triggers a massive immune response, similar to what has been observed clinically in humans. Four compounds were able to reduce viral levels in mini-lungs, and one of them is registered in three clinical trials. Scientists were also unclear on how the virus travels to various organs inside the body, till a study found that SARS-CoV-2 could infect blood vessel organoids. This indicates that the virus could travel via the blood stream to various organs, such as kidney, heart, etc (which also express “key” for the virus to enter). Despite their potential, many of these mini-organs currently do not have blood supply, resident microbes or immune cells. Also, it is difficult to understand the holistic response based on individual organs. Scientists are currently battling these limitations by creating multiple interconnected mini-organs, and growing different types of cell (blood cells, immune cells) together. It is unlikely that we would get all the answers on how the virus affects humans using one system or model. Thus, we also need to invest in computational or AI-based approaches to integrate information from different organ systems or models to create a systems body of information. A study by Tufts Centre estimated that seven out of eight drugs that enter the clinical pipeline fail indicating the low translatability of the current paradigm. With many drugs, like Remdesivir failing to show statistically significant clinical benefits in COVID-19 trials, use of new methodologies that are more relevant to human biology coupled with further innovation to address their limitations could hold the key to find potent therapeutic targets for this healthcare crisis.

### Russian Vaccine to Be Ready by August 12

- The Russian candidate vaccine for novel Coronavirus is back in the news again. According to report by Bloomberg, Russia was planning to ‘register’ its novel Coronavirus vaccine by August 10-12. The vaccine, developed by Moscow’s Gamaleya Research Institute of Epidemiology and Microbiology, was likely to be approved for public use “within three to seven days of registration by regulators”, said the report. This is the same vaccine that was, earlier this month, reported to have successfully completed human trials. Actually, at that time, in the second week of July, this candidate vaccine had only completed phase-I human trials. Its phase-II trials began on July 13, according to a report in TASS news agency at that time. A vaccine is usually not approved for public use till it completes three phases of human trials, each of which, in normal circumstances, can run for several months. **It appears, however, that Russia was planning to finish phase-II trials early, and approve the vaccine for use, without phase-III trials. The Bloomberg report said the Gamaleya vaccine was likely to get “conditional registration” in August, meaning it would be approved for use, even as phase-III trials are carried out.** The production of the vaccine was expected to begin in September, the report said. Till the clinical trials are completed, the vaccine is likely to be administered only to health professionals, it said. Scientists and health experts warn against releasing a vaccine in haste, insisting that all safety and efficacy tests must be carried out before it is approved for use.

### Serum’s Plans to Start Testing Oxford Vaccine on Indians By August Halted

**The plans of Pune-based Serum Institute of India to start testing the Oxford vaccine on Indian participants by August has hit a hurdle.** An expert committee studying the firm’s proposal for trials has asked it to make revisions. This means that the committee’s approval for the trials has been deferred and it is unclear how long Serum would have to wait before it can begin testing the vaccine on Indian participants.



### What Is This Vaccine?

Being developed by the Oxford University and AstraZeneca, this candidate vaccine is one of the front-runners in the global race to develop a vaccine against novel Coronavirus. Named ChAdOx1, this vaccine tries to use a weakened chimpanzee virus (adenovirus) to carry instructions to the cells in human bodies to recreate the spiky surface of the Covid-19 virus. Once this is done, the body's immune system is expected to recognise these foreign particles as a threat, and create antibodies so that attempts by the real Coronavirus to infect are thwarted. This vaccine candidate is currently undergoing late stage human trials in the UK, Brazil and South Africa. Serum has an agreement with AstraZeneca to manufacture it for low- and middle-income countries.

### What Is This Expert Committee. And Why Has It Held Back Its Approval?

India's top drug regulatory body, the Central Drugs Standard Control Organisation (CDSCO), makes decisions related to clinical trials based on recommendations of subject expert committees (SECs). Serum's proposal was being studied by one such SEC. In its application, Serum had proposed phase-II and phase-III trials on about 1,600 participants. The SEC has sought a demarcation between the two phases. While it is not yet clear whether the Pune-based firm was considering testing sites only in Pune and Mumbai, as it had indicated earlier, the SEC is learnt to have insisted that the test sites should be spread out all over the country. The SEC is learnt to have recommended about eight amendments to Serum's application. This includes suggestions related to methods adopted to assess the ability of the candidate vaccine to invoke an immune response, and the firm's calculations to determine the number of volunteers the tests would be carried out on.

### What Happens Now

Serum would have to make changes to its proposal and come back to the committee. If the SEC is satisfied it can then recommend the trials. Only after the SEC makes its recommendation, can the Drug Controller General of India, who heads CDSCO, would grant approval for conducting the trials in India.

### Moderna Vaccine Induced "Robust Immune Response" On Animals, Says Study

Moderna Therapeutics, a US biotech company considered one of the front-runners to produce a vaccine against novel Coronavirus, has published data from pre-clinical trials of its candidate vaccine in a peer-reviewed journal. The publication in New England Journal of Medicine says the candidate vaccine had elicited "robust immune response and protection" against the virus in the subjects. Pre-clinical trials are conducted on animals. If successful, the vaccine is then tested on humans in three phases. **Moderna's candidate vaccine, named mRNA-1273 for the time being, has just entered the third and final phase of human trials.** It has published findings of phase-I human trials as well, but these were based on preliminary data. The subjects on whom the vaccine is tried are followed up for several weeks to assess their condition. Moderna's candidate was the first to get approval for pre-clinical trials, way back in February itself. The animals were given two doses of the candidate vaccine during the trial. "After two vaccinations, the immune response observed in this non-human primate study was consistent with the recent Phase 1 human study of mRNA-1273, also published in The New England Journal of Medicine," the company said in a statement. "This important preclinical study shows that mRNA-1273 protected against a high dose SARS-CoV-2 infection in non-human primates and prevented pulmonary disease in all animals, further supporting the clinical advancement of mRNA-1273," the company said. The interim analysis of phase-I



human trials had found that the vaccine had triggered immune response in all the participants.

### The Story So Far

25 candidate vaccines in human trials  
Five in Stage-III trials  
139 candidates in pre-clinical trial stage  
Two Indian candidates in Stage-I trials

### What We Know of Covid-19 Vaccine Pricing at The Moment

→ With four vaccine candidates in final stage human trials and firms eyeing to launch them by year-end, the topic has now veered towards the pricing of the shots and which countries would access them first. The Covid-19 vaccine candidates by University of Oxford-AstraZeneca, Moderna Inc, Pfizer Inc-BioNTech and Chinese firm Sinovac are all undergoing Phase III trials at present. While Pfizer, Moderna and Merck & Co have said they plan to sell their vaccines at a profit, some drug makers, including Johnson & Johnson have announced plans to price their vaccines on a not-for-profit basis. Johnson and Johnson have said it would make the Covid-19 vaccine available at \$10 for “emergency pandemic use”. However, even before regulatory approval, several rich countries have entered into pre-purchase agreements with vaccine manufacturers, a development that has come to be known as “vaccine nationalism”. Experts have contended that the move was harmful for equitable access to vaccines.

### Pfizer-BioNTech is on the Heels of Moderna, Enters Late Stage Clinical Trials

→ American drugmaker Pfizer Inc, which had partnered with German biotech firm BioNTech to develop a vaccine candidate against Covid-19 earlier this year, has become the latest in the list of major movers in the vaccine race to move into the final stages of human trials. Right on the heels of Moderna Therapeutics, Pfizer announced that its vaccine candidate, called BNT162b2 for the time being, has progressed to phase II/III trials. Like Moderna, Pfizer’s candidate belongs to a category called a messenger RNA vaccine. These types of vaccines involve modifying a messenger RNA to get the cells to recreate the part of the virus that is crucial to target. In this case, the Pfizer-BioNTech vaccine has modified the messenger RNA to instruct the cells in the body to produce the spiky outer surface of the SARS-CoV-2 virus—the spike glycoprotein.

### Bharat Biotech, Zydus Cadila Start Human Trials for Covid-19 Vaccine

→ Bharat Biotech and Zydus Cadila kicked off human trials for their Covid-19 vaccine candidates this week, inoculating the first set of participants in what will be a closely watched race for an indigenous vaccine against the contagious virus.

### What Are These Vaccines?

Bharat Biotech’s Covaxin is an “inactivated” vaccine, which is made using particles of the Covid-19 virus that were killed so that they would not be able to infect or replicate in those injected with it. Injecting particular doses of these particles serves to build immunity by helping the body create antibodies against the dead virus, according to the firm. Zydus Cadila’s ZyCov-D is a “plasmid DNA” vaccine. DNA vaccines use genetically engineered



plasmids—a type of DNA molecule—that are coded with the antigen (a toxin or substance given off by the virus) against which the immune response is to be built. The DNA sequence injected would match that of the virus, helping the body build antibodies against it.

### When Did the Trials Start?

Both Bharat Biotech and Zydus Cadila began vaccinating their first set of participants on July 15. The first phase of the Covaxin trials are to be conducted on 375 participants across 12 clinical trial sites in the country, of which two—AIIMS Patna and PGIMS Rohtak—have begun the vaccination process. The ZyCov-D phase I and II trials target 1,048 participants and are to be conducted at one site—Zydus Research Centre in Ahmedabad—according to the Clinical Trial Registry of India.

### What Happens Now?

The sites that have begun testing Covaxin would have to finish vaccinating a smaller number of people to ensure that it is safe to continue with the phase I trials in the first place. For instance, AIIMS Patna is targeting a total of 18-20 participants in the first set. After it vaccinates this group with Covaxin, it will have to pause the enrolment for 7-10 days while it collects data on the vaccine's safety from this group. This data will be submitted to a Data and Safety Monitoring Board that will study the information and decide whether it is safe to administer the vaccine in humans. If there are no safety issues observed, the site will be allowed to continue enrolment and vaccinate more participants as part of the first phase of the trial. It is unclear whether a similar procedure will be followed for ZyCov-D. With Covaxin, the participants will be vaccinated twice in the first phase of trials, fourteen days apart. ZyCov-D's trials entail vaccinating the participants three times. The second vaccination will take place on the 28th day and the third on the 56th day.

### How Long Will the Trials Take?

The first phase of the trials for Covaxin are expected to take over a month to complete, after which it is expected that the data from the first trial will be submitted to the Drug Controller General of India. Following this, it will move on to phase II trials. CTRI shows that both phases of the trial are expected to take around 15 months to complete. ZyCov-D's first phase of trials is expected to take nearly three months to complete, following which the vaccine will move on to the second phase. CTRI shows that both phases of the trials are expected to take a year to complete. However, the firm's chairman, Pankaj Patel, had earlier stated that it expected the first two phases of the trials to be completed in three months.

### How 'Corona' Of the Virus Changes into A Hairpin Shape — And Why

- ➔ The spike protein of SARS-CoV-2 — the 'corona' in the coronavirus that causes Covid-19 disease — has just revealed new secrets. Researchers have found that the spike protein changes its form after it attaches itself to a human cell, folding in on itself and assuming a rigid hairpin shape. The researchers have published their findings in the journal Science, and believe the knowledge can help in vaccine development.

### What Is the Spike Protein?

It is a protein that protrudes from the surface of a coronavirus, like the spikes of a crown or corona — hence the name 'coronavirus'. In the SARS-CoV-2 coronavirus, **it is the spike protein**





that initiates the process of infection in a human cell. It attaches itself to a human enzyme, called the ACE2 receptor, before going on to enter the cell and make multiple copies of itself.

### What Has the New Research Found?

Using the technique of cryogenic electron microscopy (cryo-EM), Dr Bing Chen and colleagues at Boston Children's Hospital have freeze-framed the spike protein in both its shapes – before and after fusion with the cell. The images show a dramatic change to the hairpin shape after the spike protein binds with the ACE2 receptor. In fact, the researchers found that the “after” shape can also show itself before fusion – without the virus binding to a cell at all. The spike can go into its alternative form prematurely.

### What Does That Signify?

Dr Chen suggests that assuming the alternative shape may help keep SARS-CoV-2 from breaking down. Studies have shown that the virus remains viable on various surfaces for various periods of time. Chen suggests that the rigid shape may explain this. More significantly, the researchers speculate that the post fusion form may also protect SARS-CoV-2 from our immune system.

### In What Way Can It Protect the Virus from The Immune System?

The post fusion shape could induce antibodies that do not neutralise the virus. In effect, the spikes in this form may act as decoys that distract the immune system. “Antibodies specifically targeting the post fusion state would not be able to block membrane fusion (viral entry) since it would be too late in the process. This is well established in the field of other viruses, such as HIV,” Chen told The Indian Express, by email. In principle, if both conformations shared neutralising epitopes (the part of the virus targeted by antibodies), then the post fusion form too could induce neutralising antibodies, Chen said. “But because the two structures are often very different, in particular, in case of SARS-CoV-2 and HIV, I think it is not very likely that the post fusion form would be useful as an immunogen,” he explained.

### Do the Two Forms Share Any Similarities?

Yes, both the “before” and “after” forms have sugar molecules, called glycans, at evenly spaced locations on their surface. Glycans are another feature that helps the virus avoid immune detection.

### How Is the Knowledge About the Alternative Shape Useful?

The researchers believe the findings have implications for vaccine development. Many vaccines that are currently in development use the spike protein to stimulate the immune system. But these may have varying mixes of the prefusion and post fusion forms, Chen said. And that may limit their protective efficacy. Chen stressed the need for stabilising the spike protein in its prefusion structure in order to block the conformational changes that lead to the post fusion state. If the protein is not stable, antibodies may be induced but they will be less effective in terms of blocking the virus, he said. “Using our prefusion structure as a guide, we should be able to do better (introducing stabilizing mutations) to mimic the prefusion state, which could be more effective in eliciting neutralizing antibody responses,” Chen told The Indian Express. “We are in the process of doing this in case the first round of vaccines is not as effective as we all hope.”



## Psoriasis Drug In COVID-19 Therapy

- On July 11, pharma major Biocon announced that it had received the approval of the Drugs Controller General of India (DCGI) to market Itolizumab for treatment of cytokine release syndrome (CRS) in moderate to severe acute respiratory distress syndrome patients due to COVID-19. Itolizumab is a monoclonal antibody which is used to treat acute psoriasis.

### What Are Monoclonal Antibodies?

Monoclonal antibodies are proteins cloned in the lab to mimic antibodies produced by the immune system to counter an infection. They have their genesis in serum, the colourless constituent of blood that contains antibodies. These proteins bind to an antigen, the fragment of an infectious virus in the case of SARS-CoV-2, and either destroy it or block its action. In the case of COVID-19, there are yet no proven drugs to treat moderate or severe manifestations of the disease. Among the therapies being tested is convalescent plasma, which is a constituent of blood and recovered from those who have successfully fought the disease. This blood contains antibodies produced within a week or two of being infected. While plasma therapy involves injecting this entire antibody-soup into another sick patient, a monoclonal antibody can be made by isolating specific antibodies and multiplying them via various techniques. Isolating plasma and serum are laborious and time-consuming when it must be administered to every patient. However, since 1975, several techniques have been perfected that allow antibodies once isolated to be easily replicated. These are stored in vials and can be injected into patients.

### How Useful Are They in Treating COVID-19 Patients?

While eight in 10 of those infected by the disease recover with little more than a few days of cough and fever, about one in 10 can manifest severe systems of the disease irrespective of their age and medical history. Experts are not sure why, but have observed that many who died were victims of a cytokine storm – when the immune system goes into overdrive to flush out the virus. Pro-inflammatory cytokines recruit a host of specialised immune system cells to neutralise antigens. However, these cytokines can aggravate inflammation and injury in lung cells as well as in several other organs. A challenge in treatment is how to prevent this over-reaction. One method is to use antibodies that can block a particular protein, called CD6. They are found on the surface of T-cells, a class of cells that are a central prong in the body's defence system. Experts say if this CD-6 is suppressed, it will prevent the T-cells from releasing a cytokine cascade and thus better regulate the immune system. There is also a lot of research going on in using such antibodies to prevent the replication of the virus. Since last month there have been reports from laboratories from nearly everywhere, reporting the presence of one or more antibodies that could be used to block the 'spike' protein, the key the coronavirus uses to infiltrate lung cells and proliferate. Before monoclonal antibodies were roped into discussions surrounding COVID-19, research has focused on deriving the right kind of antibodies that specifically bind onto regions of interest. These underpin the design of cancer therapies or fixes for autoimmune diseases, rheumatoid arthritis or acute psoriasis.

### Is There A Downside?

Sometimes antibodies are known to help viral entry and replication in target cells which can worsen the disease. This is why they need careful evaluation.



## Does Itolizumab Hold Promise in The Fight Against COVID-19?

Itolizumab is an approved drug for acute psoriasis since 2013 and has passed safety and efficacy trials for that disease in over 500 patients. However, independent experts have pointed out that the **efficacy of the drug in treating COVID-caused Acute Respiratory Disease Syndrome has not been conclusively demonstrated because it has, as part of a clinical trial, only been tested on 30 patients.** However, the drug has been approved by the DCGI for emergency use in the treatment of moderate to severely-ill patients as per the discretion of physicians. The DCGI also directed Biocon to conduct a phase-4 study – it must monitor it for adverse reactions or side-effects after it has been administered in large groups of patients and report back to the authorities. Experts pointed out that the normal process for approving a drug includes a phase-3 trial, where the drug's safety and efficacy are first evaluated in the wider population. Officials at Biocon claim they plan to test the drug in the United States, Canada, Australia and New Zealand. Several doctors, at a press conference organised by Biocon, said their patients had benefitted from the drug but mostly when they were yet to reach a stage before requiring ventilators or external oxygen support. The drug cost a little under ₹8,000 for every vial. Generally, four vials are necessary for treatment, company officials said.

## Pandemic May Call for Sustained Support for Health-Care Workers

- The COVID-19 pandemic has pushed health-care systems across the world to the very brink. This is not just about lack of infrastructure but also about stretching healthcare workers to their limits. From having to make very difficult decisions, for example, regarding allotment of resources, to breaking bad news often to families of patients, health-care workers are under tremendous pressure. In this context, an Analysis published in The British Medical Journal compares the trauma faced by healthcare workers during the pandemic to that of a war situation and advocates giving them adequate support and counsel before, during and after the crisis. The type of decisions health-care workers may have to take could range over allocating scant resources, balancing their own needs against those of patients, allotting time for family over the demands of duty and so on. All of these could result in “moral injury” – a term borrowed from military usage by the authors, referring to the psychological distress that results from actions that violate someone's ethical or moral code. The authors advocate that this can be prevented by preparing the personnel for what they are going to encounter, and providing enough support and encouragement during and after the crisis, in such a way that they do not take the route to mental illness and instead move towards post-traumatic growth.

## Post-Traumatic Growth

Post-traumatic growth refers to positive changes in attitudes, beliefs and behaviour following traumatic life events. “It may present as being more able to cope with adversity in the future or feeling less anxious when thinking about future challenging events,” says Neil Greenberg, Professor of Defence Mental Health with King's College London and trauma lead at the Royal College of Psychiatrists, in an email to The Hindu. He is an author of the paper. He further adds, “This may come across as increased optimism, more positive mood and better coping when adversity strikes.” Prof. Greenberg further explains, “Many people find it hard to talk about what did not ‘go right’ because they fear being judged or reprimanded... or they may feel a seething anger at their bosses for not supporting them which they do not speak about as they fear they may lose control and this might lead to problems at work.” He suggests that reflective practice sessions, by leaders who speak about what did not go right for them, may



help people develop a meaningful narrative. “Best to do this either periodically as the crisis is ongoing or shortly afterwards as people are trying to make sense of what they have experienced,” he says.

### Indian Context

In India, for several reasons, including the early lapse into lockdowns, and perhaps the demography, the medical systems have not been stretched as much as the European systems. However, here too, there is a chance that mental health issues may crop up. Chennai-based psychiatrist, Dr M. Suresh Kumar, currently Director of Psymed Hospital, who has worked internationally in public mental health, has this to say: “Young people are at the forefront of this fight, and many of them may not be adequately prepared to work under such circumstances... there is a chance of moral injury occurring.” He also points out that professionals such as doctors or nurses do not readily ask for help or reveal stress. They should be encouraged to speak out and be provided ongoing help rather than a one-time help. According to Dr Suresh Kumar, peer support is easier to accept. He adds, “Most important is to express appreciation of the service.”

### Can You Get COVID-19 Again? It's Very Unlikely, Experts Say

→ “I haven’t heard of a case where it’s been truly, unambiguously demonstrated,” said Marc Lipsitch, an epidemiologist at the Harvard T H Chan School of Public Health. Other experts were even more reassuring. While little is definitively known about the coronavirus just seven months into the pandemic, the new virus is behaving like most others, they said, lending credence to the belief that herd immunity can be achieved with a vaccine. It may be possible for the coronavirus to strike the same person twice, but it’s highly unlikely that it would do so in such a short window or make people sicker the second time, they said. What’s more likely is that some people have a drawn-out course of infection, with the virus taking a slow toll week to months after their initial exposure. People infected with the coronavirus typically produce immune molecules called antibodies. Several teams have recently reported that the levels of these antibodies decline in two to three months, causing some consternation. But a drop in antibodies is perfectly normal after an acute infection subsides, said Dr. Michael Mina, an immunologist at Harvard University. Many clinicians are “scratching their heads, saying, ‘What an extraordinarily odd virus that it’s not leading to robust immunity,’ but they’re totally wrong,” Mina said. “It doesn’t get more textbook than this.” Antibodies are not the only form of protection against pathogens. The coronavirus also provokes a vigorous defence from immune cells that can kill the virus and quickly rouse reinforcements for future battles. Less is known about how long these memory T cells persist – those that recognize other coronaviruses may linger for life – but they can buttress defences against the new coronavirus. “If those are maintained, and especially if they’re maintained within the lung and the respiratory tract, then I think they can do a pretty good job of stopping an infection from spreading,” said Akiko Iwasaki, an immunologist at Yale University. Mina agreed. “This is a famous dynamic of how antibodies develop after infection: They go very, very high, and then they come back down,” he said. He elaborated: **The first cells that secrete antibodies during an infection are called plasma blasts, which expand exponentially into a pool of millions. But the body can’t sustain those levels. Once the infection wanes, a small fraction of the cells enters the bone marrow and sets up shop to create long-term immunity memory, which can churn out antibodies when they’re needed again. The rest of the plasma blasts wither and die. In children, each subsequent exposure to a virus – or to a vaccine – boosts immunity until, by adulthood, the antibody response is steady and strong. What’s unusual in the current**





pandemic, Mina said, is to see how this dynamic plays out in adults, because they so rarely experience a virus for the first time. Even after the first surge of immunity fades, there is likely to be some residual protection. And while antibodies have received all the attention because they are easier to study and detect, memory T cells and B cells are also powerful immune warriors in a fight against any pathogen. A study published July 15, for example, looked at three different groups. In one, each of 36 people exposed to the new virus had T cells that recognize a protein that looks similar in all coronaviruses. In another, 23 people infected with the virus that causes severe acute respiratory syndrome, or SARS, in 2003 also had these T cells, as did 37 people in the third group who were never exposed to either pathogen. "A level of pre-existing immunity against SARS-CoV-2 appears to exist in the general population," said Dr. Antonio Bertoletti, a virologist at Duke NUS Medical School in Singapore. The immunity may have been stimulated by prior exposure to coronaviruses that cause common colds. These T cells may not thwart infection, but they would blunt the illness and may explain why some people with COVID-19 have mild to no symptoms. "I believe that cellular and antibody immunity will be equally important," Bertoletti said. Vaccine trials that closely track volunteers may deliver more information about the nature of immunity to the new coronavirus and the level needed to block reinfection. Research in monkeys offers hope: In a study of nine rhesus macaques, for example, exposure to the virus induced immunity that was strong enough to prevent a second infection. Researchers are tracking infected monkeys to determine how long this protection lasts. "Durability studies by their nature take time," said Dr. Dan Barouch, a virologist at Beth Israel Deaconess Medical Center in Boston who led the study. Barouch and other experts rejected fears that herd immunity might never be reached. "We achieve herd immunity all the time with less-than-perfect vaccines," said Dr. Saad Omer, director of the Yale Institute for Global Health. "It's very rare, in fact, to have vaccines that are 100% effective." A vaccine that protects just half the people who receive it is considered moderately effective, and one that covers more than 80% highly effective. Even a vaccine that only suppresses the levels of virus would deter its spread to others. The experts said reinfection had occurred with other pathogens, including influenza, but they emphasized that those cases were exceptions, and the new coronavirus was likely to be no different. "I would say reinfection is possible, though not likely, and I'd think it would be rare," Rasmussen said. "But even rare occurrences might seem alarmingly frequent when a huge number of people have been infected."

### [This Is Why You Should Not Wear N95 Masks with Valve Respirators](#)

- ➔ Opening a new front to the debate whether N95 masks can really offer protection from the novel coronavirus, the Union Health Ministry has warned against the use of such masks with valve respirators, which is basically the raised plastic disk that is embedded in the fibre. In a letter to all states and Union Territories, the Director General of Health Services (DGHS) in the Health Ministry, Dr Rajiv Garg, said N95 masks with valve respirators do not prevent the virus from spreading out and are "detrimental" to the measures adopted for its containment. In fact, in May, the San Francisco Department of Public Health had warned of the inappropriate usage of N95 masks. "The ones with the valves or openings on the front are NOT safe, and may actually propel your germs further," the department had tweeted.

### [What Are N95 Masks? How Many Types of N95 Masks Are There?](#)

N95 masks are personal protective equipment that protects the wearer from airborne particles and from liquid contaminating the face. **The latest government warning is for those N95 masks that come with exhalation valves. N95 masks are worn mostly by healthcare**



workers and are known to offer the highest level of protection against airborne infections, but they still have limitations. N95 masks filter about 95 per cent of particles smaller than 300 nanometres (1 nm is a billionth part of a metre). SARS-CoV-2, the virus that causes Covid-19, however, is in the size range of 65-125 nm.

### What Is the Function of The Valve in An N95 Mask?

The valve or the raised plastic gasket found in some N95 mask models basically filters the air inhaled by the person and blocks the entry of pathogens suspended in the air. The valves allow easier exhalation than traditional masks, prevent humidity, reduce heat and carbon dioxide build-up inside the mask.

### What Is the Concern Raised by The Health Ministry?

The Health Ministry has stated that N95 masks with valve respirators does not prevent the virus from escaping out of the mask. The valve is basically a 'one-way valve' that only protects the person wearing it and doesn't filter the aerosols coming out. Hence, an asymptomatic carrier of the novel coronavirus can easily spread the infection to others when the valve releases the unfiltered exhaled air in the immediate surroundings. Thus, in a closed area, people around the carrier have a higher risk of potential exposure to the virus. Asymptomatic transmission is when a person who displays no Covid-19 symptoms – such as fever, body ache, cough etc – transmits the infection to another person. On the other hand, a mask without a valve will not allow the virus to spread. According to Dr Ajit Kumar Das, the valve becomes a pocket of infection as it is a 'one-way' mechanism and exhaled air passes unfiltered into the environment.

### So, How Do You Replace the N95 Mask?

The Health Ministry has encouraged the public to use home-made face masks or coverings made of cloth, preferably cotton, which can be tied or fastened over the nose and mouth. The government has also issued a detailed manual on how to make home-made masks and recommended it to everyone. The World Health Organisation, in its June revised guidelines, has suggested that everyone should wear fabric masks (non-medical) in public. Fabric masks should contain at least three layers of different materials. Any person showing symptoms of Covid-19 should wear a medical mask.

### What Is Itolizumab, Newly Cleared for Covid?

- A repurposed drug, Itolizumab, is one of the newest treatments for Covid-19 approved in India. The Drug Controller General of India recently approved it as a novel biologic therapy for restricted emergency use. The decision has also sparked controversy because of the small size of the clinical trials, and because exemption has been granted from phase-III trials.

### What Is This Drug?

Itolizumab is an existing drug used for psoriasis, a chronic skin disease involving unregulated growth of some skin cells that develop into red patches mostly on knees and elbows, but also on some other parts of the body. The drug, developed by Bengaluru-based Biocon, was approved in 2013. It is considered safe and effective for the treatment of psoriasis.



### Why Was It Approved for Emergency Use in Covid Treatment?

The SARS-CoV-2 virus has been observed to induce an overreaction of the immune system, generating a large number of cytokines that can cause severe damage to the lungs and other organs, and, in the worst scenario, multi-organ failure and even death. The approval from the DCGI is based on the results from the conclusion of a randomised, controlled clinical trial at hospitals in Mumbai and New Delhi. The study focused on the safety and efficacy of Itolizumab in preventing cardio-renal complications in Covid-19 patients who also have acute respiratory distress. The drug has been found to reduce these complications in such patients. Basically, the drug controls the hyper-activation of the immune system in response to SARS-CoV-2 virus and prevents morbidity and mortality related to the cytokine storm. The clinical trial showed that the drug is best administered in the pulmonary phase of the Covid-19 infection when the cytokine builds up is starting and the patient is experiencing shortness of breath and exhibiting abnormal chest images. It prevents progression to the hyperinflammation phase (cytokine storm) and other complications like coagulation and organ failure, according to Dr Sandeep Athalye, Chief Medical Officer, Biocon Biologics. The drug has been used over 80 patients in Cuba and off-label in over 150 cases. According to Dr Shashank Joshi, Dean, Indian College of Physicians, the most critical part is to know when to use the drug and it must be reserved for moderate to severe Covid cases with cytokine storm where oxygen requirements are rapidly going up. usually between the 8th day onwards of Covid infection.

### What Were the Results of The Trial?

The trial results showed a statistically significant advantage over the control group of patients, in one-month mortality rate. All the patients who were administered Itolizumab were weaned off oxygen by Day 30, and none needed ventilator support unlike the control group that did not get the drug. Some other inflammations commonly found in such patients were also suppressed, and these correlated well with clinical improvement in symptoms. Overall, the drug was found well-tolerated.

### How Large Was the Trial?

The trial had 20 participants given the drug along with supportive care and 10 others given only supportive care. All 20 patients on Itolizumab recovered while three of the other 10 patients died. Public health experts and some doctors have used social media to question the sample size of the trial. When journalists raised this question at a virtual press conference, Kiran Mazumdar-Shaw, Executive Chairperson, Biocon, said Itolizumab has been approved in India and since the country is in a medical emergency, it was decided to go ahead with a clinical trial involving a cohort of 30 patients. She said the regulatory process was extremely robust and the scientific discussions on the trial was of a very high order. The DCGI has also exempted the drug from phase III clinical trials and allowed phase IV trials (post-marketing surveillance). "Itolizumab is not a new drug and was approved in India since 2013. We had done phase II and III trials, and got the approval. In the past seven years, its been used in psoriasis and we know how the mechanism works" Biocon Biologics CMO Dr Athalye said. Company officials said they plan phase IV trials soon.

### How Much Does It Cost?

Each injection is presented as a 25mg/5ml solution, which costs Rs 7,950 per vial. Based on an average body weight of 60 kg, the therapy cost of a single dose comprising four vials is estimated at Rs 32,000 (MRP).



## Ministry Cautions Against Use Of N-95 Valve Mask

→ The Union Health Ministry on Tuesday cautioned against the use of N-95 valve respirator/masks, stating that it does not offer the desired protection against the spread of COVID-19. "This is an evolving virus and we now have evidence which suggests that with a valve mask the person wearing it is safe but if they are COVID-19 positive or asymptomatic, then propensity of that person infecting others is there," said the Health Ministry's Officer on Special Duty (OSD), Rajesh Bhushan, at a press conference. The warning comes after the Directorate General of Health Services (DGHS) sounded an alarm against the use of these masks. It noted that these do not prevent the virus from escaping out and thus may not aid in the containment of COVID-19.

### 'Prevent Use'

In a communication to State governments, the DGHS said, "It has come to our knowledge that the use of valve respirator N-95 masks is detrimental to the measures adopted for preventing the spread of coronavirus as they do not prevent the virus from escaping out of the mask. In view of the above, I request you to instruct all concerned to follow the use of face/mouth cover and prevent inappropriate use of N-95 masks".

### Home-Made Cover

The Central government has stressed the need for people to wear at least a home-made protective cover for the face and mouth whenever they step out of their residences. The advisory said that the covers must be washed and cleaned each day and that only cotton cloth must be used. "Never share the face cover with anyone. Every member in a family should have a separate one," the advisory noted.

## Why Are Re-Purposed Medicines Expensive? (Sharmila Mary Joseph - Secretary, Department of Ayush, Government of Kerala, And James J. Nedumpara - Professor and Head, Centre For Trade and Investment Law, Indian Institute of Foreign Trade, New Delhi)

→ The quest for developing a vaccine and finding a definitive treatment for COVID-19 treatment is reportedly making good progress. However, with the number of infections around the globe having crossed 14.7 million, there is no easy containment of this pandemic. Clinical trials with re-purposed antivirals and biologicals have been approved in different geographical settings. These medicines are believed to have some potential in shortening the recovery time in COVID-19 patients. Recently, the Drugs Controller General of India (DCGI) issued approval to Glenmark Pharma to manufacture and market Favipiravir tablets for 'restricted emergency use'. It also issued approvals to Hetero and Cipla to manufacture and market injectable formulations of Remdesivir, and to Biocon Limited to market injectable formulations of Itolizumab.

### Pricing of Medicines

Remdesivir is an antiviral originally developed by Gilead to treat the Ebola virus infection. Favipiravir is a generic version of an anti-influenza medicine developed by Toyama Chemical in Japan. Gilead has entered into royalty-free voluntary licensing agreement with companies





including Hetero and Cipla to provide technology transfer to manufacture Remdesivir for distribution in 127 countries. The free royalty period is valid until the World Health Organization (WHO) declares the end of the pandemic or until another medicine or vaccine is approved to treat or prevent COVID-19. Hetero has priced Remdesivir at ₹5,400 for a 100 mg injection vial, and Cipla at ₹4,000 per vial. A five-day treatment course with Remdesivir would work out to ₹24,000-32,000 per patient. Glenmark claims to have developed the active pharmaceutical ingredient and formulation of Favipiravir through its in-house research team and has priced Favipiravir 200 mg tablet at ₹103, with a course of treatment costing ₹12,566 per patient. Both these medicines inhibit viral RNA-dependent RNA polymerase, thereby retarding viral replication in host cells. Itolizumab, incidentally used in the treatment of psoriasis, reportedly shows therapeutic effects in severe COVID-19 infections progressing to acute respiratory distress syndrome. Treatment with Itolizumab is also not inexpensive by any means with the medical costs amounting to ₹32,000 per patient. The critical question is whether the above pricing would exclude a majority of the patients from the benefits of these re-purposed medicines.

### Question of Affordability

The updated clinical management protocol of the Ministry of Health and Family Welfare (MHFW) lists Remdesivir as a potential medicine for investigational therapy in moderate COVID-19 infections without underlying contra-indications. The protocol does not mention Favipiravir, which nevertheless finds a place in the WHO Clinical Management Protocol. Itolizumab figures neither in the MHFW nor in the WHO protocol. The question that begs an answer from pharmaceutical companies marketing re-purposed medicines for restricted emergency use is whether these medicines can be made available at affordable prices to patients. The current pricing does not indicate this. Andrew Hill et al in their study published in the Journal of Virus Eradication determined the price of 'final finished product' (FFP) or medicine ready for use, by adding the costs of the active pharmaceutical ingredient, excipients, formulation, packaging and a reasonable profit margin. Their calculations have estimated the cost for a treatment course with Remdesivir to be \$9 and the estimated production cost for a course with Favipiravir to be \$20 per patient. Itolizumab has not been subjected to a costing analysis in their study. Affordability of medicines is a matter of particular concern. When companies attempt to recover the fixed costs or sunk costs that went into the investment and development of the medicine, the final price becomes unreasonable. This is distressing for the patient, especially when the therapeutic results or clinical benefits have not been fully established.

### Various Laws

Akin to the flexibilities in the TRIPS agreement which helped in making antiretrovirals affordable during the AIDS crisis, some countries are resorting to enabling legislation and procedural modifications of existing regulations to address affordability of anti-COVID-19 medicines. Israel issued a compulsory licence to Hetero for production and import of the Lopinavir-Ritonavir combination from India, following which the innovator AbbVie decided not to enforce its patent right. Canada passed the COVID-19 Emergency Response Act and Germany, The Prevention and Control of Infectious Diseases in Humans Act. Chile's Lower House of Parliament and Ecuador's National Assembly passed resolutions allowing TRIPS flexibilities in the pandemic. Prompted by Costa Rica, WHO opened a voluntary patents pool, for compiling and sharing information and technological know-how for the development of medicines, vaccines and diagnostics for COVID-19. Indian patent laws too are armed with



sufficient powers to ensure reasonable pricing for pharmaceutical products. India has used compulsory licensing only once in 2012 for Sorafenib. Section 92 of the Act enables grant of compulsory licensing in circumstances of national emergency or extreme urgency. Compulsory licences may not be the solution in all such situations. Nevertheless, the pricing will have to reflect the magnitude of the crisis and the socioeconomic realities in individual countries. Many innovator companies, perhaps to escape or avoid any coercive move or legal action by governments, agree upon voluntary licences with generic companies. Such tie-ups can cause substantial reduction of medicine prices, as was seen in the case of Sofosbuvir, the \$1,000 anti-hepatitis C medicine. Its price went down to approximately \$10 per tablet in India, subsequent to the innovator's voluntary licences with Indian generic companies in 2014. The terms and conditions of such agreements are generally wrapped in secrecy and may have clauses detrimental to public interest. Besides, as allegations of cartelisation between innovators and generic companies were raised in the case of antidiabetics Sitagliptin and Vildagliptin in the past, such arrangements are generally viewed with suspicion. The prices announced for the re-purposed medicines appear to be high, especially given the rate of spread and the public health crisis in India. Economies of scale will ensure that the companies recoup their investment costs, and still generate profits. The burden of a global pandemic will have to be borne by governments and pharmaceutical companies alike. Unprecedented public health crises call for situation-specific decisions from pharmaceutical companies and profit maximisation should take a back seat. At least there is a strong case for reconfiguring the pricing strategies of the re-purposed medicines for COVID-19 treatment.

### How Safe Is It to Swim: Behind India's Reluctance to Reopen Pools?

- While swimming in itself is seen as the safest sport with its virus-killing chlorine cover, getting into the pool and back is fraught with risks. Given the inability to enforce strict social distancing on land, authorities in India have been reluctant to open pools for amateur swimmers, whose numbers will need to be severely restricted.

### Is It Safe to Swim in The Pool?

Swimming on its own might be safe given you will be immersed in chlorine. However, given how crowded public pools get and the absence of discipline during preferred batch timings, it will be near impossible to enforce social distancing and hand hygiene at all times. "The virus doesn't respect borders," said Dr Chandrakant Pandav, former head of community disease at AIIMS. "There is no evidence that the virus spreads in water, but given transmission happens through the nose and water, and enforcing 100% protocol can't be guaranteed, we shouldn't be taking a risk."

### Can Chlorine Secure the Pool?

The World Health Organization says, "swimming in a well-maintained, properly chlorinated pool is safe." USA Swimming, the governing body in America, has mandated 2.0 ppm chlorine in pools. That level of chlorine will kill the virus, but hiking it even to the permissible 3 ppm can cause irritation on the skin and in the eyes, and harm the stomach lining if water is consumed. Dr Pandav said chlorine isn't a one-stop solution. "You have to ask: how well is the chlorination done? Well-chlorinated means ensuring the powder/gaseous chlorine is working efficiently in the water and the concentration percentage is maintained at all times, because it deteriorates. The disinfecting effect wears off, and can you guarantee 2% is maintained at all times?"



### What Other Measures Are Recommended?

US guidelines limit the capacity to 27 in a short-distance (25-yard) pool and 60 in an Olympic-sized 50 m pool for recreational swimmers. Each lane – usually 6 in the shorter and 10 in the longer pools – need to be 8 feet wide. When the UK opens its pools, it is looking at restricting swimming to the clockwise direction and merging two lanes into one. It has advised constant supervision to exclude those feeling ill, handwashing, and avoiding change rooms. Australian guidelines specify only one swimmer per lane; the Indian recommendations include temperature checks.

### What Are the Problems in Resuming Swimming in India?

Although the Sports Authority of India (SAI) has asked for recommendations to prepare SOPs, state government authorities have the final word on pools in their jurisdiction. Elite swimmers expect pools to open no sooner than the fourth Unlock phase (Unlock 2.0 that extends until July 31 mandates that pools stay closed). As uncertainty persists, coaches, cleaners and lifeguards are struggling with salaries and leases on the line. The catch: Safety demands limiting the number of recreational swimmers, and that limited number will not offset maintenance expenses. Elite swimmers have demanded they be prioritised.

### What Is the Situation Elsewhere?

Before cases started climbing again last week, Australia and Singapore had looked on track to reopen their pools and increase the numbers gradually. However, Australia waited until there were zero new cases – and the ratio of Australian to Indians in a recreational pool is 1:3. Sri Lanka, Thailand and Vietnam, popular training bases in Asia, have taken tentative steps. “While recreational swimming looks highly unlikely, we need elite swimmers to start training,” said Bengaluru-based coach Nihar Amin. “We’ve spent our entire lives protecting swimmers’ health minutely. We know the value of following rules, he said, urging for resumption for elite swimmers in 50 m x 25 m pools, with a maximum 10 swimmers who can maintain 8 feet distance. Most international meets have been moved by a year. though the American season may kick off by November.”

### What Are the Risk Areas?

Even 10-15 at a time in different lanes are seen as a risk, as are taking a break along the walls, and using the blocks and change rooms. “We don’t just swim and go home. We’ll drink water, there’ll be some place where we keep our bags, and it’s tough to maintain 10 ft distance that I personally think might be safe at all times,” said international swimmer Srihari Nataraj. “Go solo. Don’t play polo,” Dr Pandav said, urging for one swimmer per dedicated pool for elite Olympic-bound swimmers chasing A qualification standards.

### Why Is India Reluctant to Resume?

Neither SAI nor the Sports Ministry has offered clarity. Some elite swimmers say they are ginger about resuming training without failsafe guarantees and would rather train abroad, where regulations are drawn up by experienced planners. SAI has an agreement with Australian Institute of Sport in Canberra and could explore that option for elite swimmers. However, no one is willing to risk reopening for recreational swimmers who might throng public pools. Dr Ashok Ahuja, former department head (Sports Medicine) at SAI, said reopening is a bad idea. “I don’t think pools are safe. It’s a new virus and the entire nature of its spread through water with body secretions like saliva and sweat despite chlorine



disinfection is not proven. From sports medicine point of view, we should not let pools open... Let's wait till December for recreational swimmers." For the competitive lot, Dr Ahuja recommends only one swimmer at a time, at staggered times. "Water will need to be recirculated and disinfected regularly. And swimmers will need to be tested often, all of which is very expensive even if we have a small bunch."

## Study Finds Evidence of Vertical Transmission of Coronavirus Across the Placenta

→ Transmission through droplets and contact with contaminated surfaces seem to be the major routes of novel coronavirus spread. The World Health Organization recently acknowledged that "short-range aerosol transmission" of the virus "cannot be ruled out" in specific indoor locations which are crowded, inadequately ventilated and where exposure to the infected person is over a prolonged period of time. Now, a study has found evidence that confirms vertical transmission of SARS-CoV-2 virus from the mother to the foetus. The route of infection is through the womb (in utero) well before the onset of labour and delivery of the baby. About half-a-dozen studies published in medical journals have already suggested vertical transmission as a possible route but have not been able to provide strong evidence about the route of spread – transplacental or transcervical – of the virus from the mother to the child. These studies could not confirm the transmission route because samples of placenta, amniotic fluid and blood of the mother and the new born were not collected and tested in every mother–infant pair. For instance, in a study published recently in the journal CMAJ (Canadian Medical Association Journal), only the placenta and nasopharyngeal swab samples of the mother were tested for the virus. Though nasopharyngeal swab samples of the new born collected on the day of birth and on two other days, plasma and stool samples tested positive for the virus, the researchers did not collect and test the cord blood. Hence the researchers classified it a "probable" case of congenital route of vertical transmission.

### Strong Evidence

In contrast, the results published recently in Nature Communications involving one mother–new born pair provide strong evidence of "confirmed" vertical transmission of the SARS-CoV-2 virus through the "transplacental" route. Studying how the virus reaches the foetus, the researchers of the Nature Communications paper led by Daniele De Luca from Paris Saclay University, France, found that the virus first occurs in the mother's blood and later causes placental infection and inflammation. The virus then gets into the blood of the neonate following placental infection. The neonate also showed clinical manifestation of COVID-19 in terms of neurological signs and symptoms. The mother aged 23 years, at 35 weeks of gestation, was admitted to the hospital in March with symptoms of coronavirus infection. Real-time PCR detected the presence of two genes (E and S) of the virus in the blood and in nasopharyngeal and vaginal swab samples. To check for vertical transmission, the researchers first collected clear amniotic fluid prior to rupture of membranes. The amniotic fluid tested positive for two genes of the virus. The baby was delivered through caesarean section to avoid infection during normal childbirth; caesarean delivery is routinely done in the case of HIV positive mothers to cut the risk of vertical transmission.

### Confirming Infection

To confirm infection in the new born, the researchers collected blood and bronchoalveolar lavage samples soon after birth and tested them for the virus. Both samples tested positive. They also collected nasopharyngeal and rectal swab samples at three time points – one hour after birth, and three and 18 days of postnatal age. These too tested positive for the virus,





confirming infection with SARS-CoV-2. The amount of virus in different tissues both in the mother and new born varied. "Viral load was much higher in placental tissue, than in amniotic fluid and maternal or neonatal blood," they write. In the case of the new born, the nasopharyngeal sample collected on day three after birth had higher viral load, while the blood contained the least amount of the virus. "Our findings confirm that transplacental transmission is indeed possible in the last weeks of pregnancy, although we cannot exclude a possible transmission and foetal consequences earlier during the pregnancy," they write.



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