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Device for improving indoor air quality.
Source: The Sentinel, 5 September 2023

IIT Jodhpur team develops device for improving indoor air quality

JODHPUR, Sept 4: A team of researchers at the Indian Institute of Technology (IIT) Jodhpur has developed a novel device for good indoor air quality.

Long living pathogens and small size aerosols are not effectively dealt by the currently available indoor air purifiers. The new device based on Cold-plasma Detergent in Environment (CODE) technology is capable of deactivating more than 99.99 per cent of harmful pathogens and provides quality indoor air. The technology aims to deal with both aerosol transport and aerosol infectivity simultaneously in the indoor environment and proactively treat the air in the occupied space at the source of contamination. The concept is based on non-equilibrium cold plasma in combination with nano-technology.

The device produces optimum concentrations of negative ions having cold-plasma detergent ions as well as positive ions in the environment similar to mother nature. It consumes less power, deactivates bacteria, moulds and viruses, captures dust and pollen, reduces volatile organic compounds and also removes odour. The technology was developed by Divya Plasma Solutions – a startup incubated at IIT Jodhpur's Technology Innovation and Start-up Centre (TISC).

"We initiated this work during Covid-19 pandemic to disinfect the indoor environment and with a hard work of three years we have come up with the Novel CODE based indoor air sterilizers which will be soon available in the market for commercial use," said Prof. Ram Prakash from the IIT, in a statement.

The technology, detailed in a paper published in the journal Scientific Reports, is attractive for individuals in offices, houses, public places (such as healthcare facilities, schools, colleges, universities, large shopping malls, commercial buildings, taxis, trains, cinema halls, conference halls, marriage halls, etc.) and can provide a quality indoor environment. (IANS)

Category:
➢ **GS-3**

In the news:
- IIT jodhpur team develops device for improving indoor air quality index.

About the device:
- Based on Cold-plasma detergent in Environment technology(CODE) which is capable of deactivating more than 99.99% pathogens and provide quality indoor air.
- This technology aims to deal with both aerosals transport and aerosal infectively simultaneously in the indoor environment and proactively treat the air in the occupied space at the source of contamination.
- It consumes less power, deactivates bacteria, moulds and viruses, capture dust and pollen, reduce volatile organic compounds and also removes odour.
- This technology was developed by Divya Plasma Solutions-a startup incubated at IIT Jodhpur.

Maharashtra govt. forms committee to explore reservation for Marathas

Panel to submit report within a month; CM Eknath Shinde says officials told to study the earlier Supreme Court verdict that struck down Maratha reservation and declared it unconstitutional

The Hindu Bureau
MUMBAI

Maharashtra Chief Minister Eknath Shinde on Monday said his government has constituted a panel that will submit within a month its report telling how Marathas from the Marathwada region can be included in the OBC category and given the Kunbi caste certificate.

He said officials have also been told to study the Supreme Court order, which had declared the Maratha reservation unconstitutional.

The government's move came three days after the agitation for the Maratha reservation turned violent as the authorities tried to shift activist Manoj Jarange, who was on a hunger strike over the issue in Jalna, to a hospital.

As the demand for the Maratha reservation gained momentum, Mr. Shinde told reporters, "A committee has been set up and asked to submit a report within a month on how to issue Kunbi certificates to the Maratha community from Marathwada."

He said the State government has taken the issue seriously and was working to find an amicable solution to the issue.

"I have directed officials to study the Supreme Court verdict on the Maratha quota and recommend solutions. We need to establish that the Maratha community is backward," the Chief Minister said referring to a 2021 apex court order that struck down the Maratha reservation.

On November 30, 2018, the Maharashtra legislature had passed a Bill proposing 16% reservation in education and government jobs for the community. However, soon a bunch of petitions were filed in the Bombay High Court challenging the decision.

In June, 2019, the High Court upheld the constitutional validity of the reservation but asked the government to reduce it from 16% as recommended by the State Backward Classes Commission.

Immediately, petitions were filed in the Supreme court challenging the verdict. In May 2021, the apex court held that Maratha reservation was unconstitutional and struck it down.

Fadnavis apologises
Meanwhile, Deputy Chief Minister Devendra Fadnavis apologised for the use of force by the police against the protesters.

Mr. Fadnavis said police should not have resorted to lathi-charge or lobbed tear gas shells. "As a CM and a Home Minister during 2014-19, I handled 2,000 protests but the police never used coercive method to suppress protesters," he said, adding that the Jalna incident is very unfortunate and apologised to the injured.

The apology came a day after the Maratha Kranti Morcha staged demonstrations across the State while demanding Mr. Fadnavis' resignation.

Maharashtra Chief Minister Eknath Shinde (centre) on Monday said at a press conference that his government has taken the issue of quota seriously and is looking for an amicable solution. PTI

SC order on Maratha reservation:
- SC observed that 16% reservation to Marathas in Maharashtra would violate Articles 14 and 21.
- The reservation breached the 50% limit.
- In the Indira Sawhney judgement of 1992, SC had categorically said 50% shall be the rule, permitted otherwise only in certain exceptional and extraordinary situations.
- The bench also upheld the 102nd Constitutional Amendment Act enacted in 2018.

What is the 102nd Constitutional Amendment?
- Introduced articles 338B and 342A.
- Article 338B gave constitutional status to National Commission on Backward Classes (NCBC).
- Article 342A says that it is for the Parliament only to include a community in the Central List for socially and backward classes for grant of reservation benefits.
- As per the amendment, the states are not to have another state list for considering reservation benefits.

Additional read:
- Indra Sawhney judgement
- Issues with the 102nd amendment
- Composition of NCBC
- 105th Constitutional Amendment:

Context:
- Maharashtra government has constituted a panel to evaluate if Marathas from the Marathwada region can be given OBC certificates.
- SC in May 2021 previously declared unconstitutional a bill (brought in 2018) proposing 16% reservation for the community in Maharashtra.

Category:
➤ **GS-1**
➤ **GS-2**

Tuesday, September 5, 2023

Refer to daily analysis on June 16th for additional information.

What is the debate around 'one nation, one election'?

How does having simultaneous elections across Lok Sabha and State assemblies counter federalism?

Kartikey Singh

The story so far:

On September 1, the Central government set up a panel headed by former President Ram Nath Kovind to explore the feasibility of the 'one nation, one election' (ONOE) plan.

What is the ONOE plan?

The idea of ONOE centres around the concept of synchronising the timing of Lok Sabha and State Assembly elections across all States to reduce the frequency of polls throughout the country.

After the enforcement of the Constitution on January 26, 1950, the first-ever general elections to Lok Sabha and all State Assemblies were conducted simultaneously in 1951-1952. The practice continued into the three subsequent Lok Sabha elections until 1967, after which it was disrupted. The cycle was first broken in 1959 after the Centre invoked Article 356 (failure of constitutional machinery) of the Constitution to dismiss the then-Kerala government. Subsequently, due to defections and counter-defections between parties, several Legislative Assemblies dissolved post-1960, which eventually led to separate polls for Lok Sabha and State Assemblies. Currently, the assembly polls in the States of Arunachal Pradesh, Sikkim, Andhra Pradesh and Odisha are held together with the Lok Sabha elections.

What do reports say about ONOE?

In August 2018, the Law Commission of India (LCI), chaired by Justice B. S. Chauhan, released a draft report on simultaneous elections, wherein the constitutional and legal questions related to the issue were analysed. Notably, the Commission submitted that simultaneous elections are not feasible within the existing framework of the Constitution. It said the Constitution, the Representation of the People's Act 1951 and the Rules of Procedure of Lok Sabha and State Assemblies would require appropriate amendments to conduct simultaneous polls. The commission also recommended it receive ratification from at least 50% of the States. However, with respect to the advantages of holding simultaneous polls, the commission said that ONOE will lead to the saving of public money, reducing the strain on the administrative setup and security forces, timely implementation of government policies, and administrative focus on development activities rather than electioneering.

Way back in 1999, the LCI headed by Justice B. P. Jeevan Reddy also advocated for simultaneous elections.

What are the concerns?

The foremost concern is with regard to its feasibility. Article 83(2) and 172 of the Constitution stipulates that the tenure of Lok Sabha and State Assemblies respectively will last for five years unless dissolved earlier and there can be circumstances, as in Article 356, wherein assemblies can be dissolved earlier.

Therefore, the ONOE plan raises serious questions – what would happen if the Central or State government collapses mid-tenure? Would elections be held again in every State or will the President's rule be imposed? Amending the Constitution for such a significant change would not only necessitate extensive consideration of various situations and provisions but would also set a concerning precedent for more constitutional amendments.

Second, the idea of ONOE does not square with the concept of 'federalism' as it is established on the notion that the entire nation is "one" contradicting the content of Article 1 which envisages India as a "Union of States". Third, the present form of recurrent elections can be seen as beneficial in a democracy as it allows voters to have their voices heard more frequently. As the underlying issues of national and State polls are different, the present framework prevents the blending of issues, ensuring greater accountability.

The Central government has also highlighted the substantial costs associated with frequent elections. However, this notion is misleading. In an article in *The Hindu*, the author contended whether the Election Commission's expenditure of ₹8,000 crore over five years, amounting to ₹1,500 crore annually, or ₹27 per voter per year, can be considered a 'massive' expense for maintaining the pride of being the world's largest electoral democracy.

The writer reads law at RGNUL, Punjab

THE GIST

▼ On September 1, the Central government set up a panel to explore the feasibility of the 'one nation, one election' (ONOE) plan.

▼ The idea of ONOE centres around the concept of synchronising the timing of Lok Sabha and State Assembly elections across all States to reduce the frequency of polls throughout the country.

▼ The idea of ONOE does not square with the concept of 'federalism' as it is established on the notion that the entire nation is "one" contradicting the content of Article 1 which envisages India as a "Union of States".

Category:
➢ **GS-2**

Context:
• The Union government formed a committee headed by former President Ramnath Kovind to explore the feasibility of simultaneous elections.

In the news:
• The idea of simultaneous elections aim at synchronising the timing of Lok Sabha and State Assembly elections; rationale being to reduce the frequency of polls throughout the country.

Various reports on simultaneous elections:

- Law Commission in 2018 chaired by Justice BS Chauhan:
  - The report said, in the existing constitutional framework, simultaneous elections are not feasible in India.
  - The committee however also said that simultaneous elections would lead to saving of public money, reducing stress on administrative setup and security forces, timely implementation of policies, administrative focus on developmental activities rather than electioneering.
- Law Commission in 1999 headed by Justice BP Jeevan Reddy advocated in favour of simultaneous elections

Concerns around implementation of simultaneous elections:

- Concern with regard to feasibility. Articles 83(2) and 172 stipulates that tenure of Lok Sabha and Assemblies will be five years unless dissolved earlier.
- The idea of simultaneous elections deter from the idea of multi-tiered governance, hence affecting the federal structure.
- The present structure prevents blending of issues which remain different for Lok Sabha and assembly elections; thereby ensuring greater accountability.

Additional reads:

- Pros and cons of simultaneous elections.

Ready to assess capacity of 13 hill States, govt. tells SC

Krishnadas Rajagopal
NEW DELHI

The Centre has proposed forming a 13-member technical committee to evaluate the "carrying capacity" of 13 Himalayan States.

Frequent landslips leading to deaths and destruction had led the Supreme Court to moot a re-evaluation of the load-carrying capacity of hill towns and cities.

The carrying capacity is the maximum population size that an ecosystem can sustain without getting degraded.

The Environment Ministry, represented by Additional Solicitor-General Aishwarya Bhati, filed a short affidavit stressing

Crumbling hills: Several buildings collapsing following massive landslips at Kullu in Himachal Pradesh in August. AFP

that it was "imperative that factual aspects of each hill station are specifically identified and collected with the help of local authorities cutting across multiple disciplines".

The Union government noted that in January 2020,

it circulated among the 13 Himalayan States guidelines for assessing the carrying capacity of their hill stations, including cities and eco-sensitive zones.

CONTINUED ON

In the news:
- The centre has proposed forming a 13 member committee to evaluate the carrying capacity of 13 Himalayan States.
- Landslides leading to death and destruction in these states have become very frequent.
- CJI had in August suggested an expert committee to conduct a complete and comprehensive study on the carrying capacity of the region, also expressed concern over unplanned development (extended role of judiciary).

What is carrying capacity?
- The maximum population size that an ecosystem can sustain without getting degraded.

Additional read:
- Carrying capacity and sustainable development

Category:
➤ **GS-3**

Context:
- Recent floods and landslides in the hill states of India.

Use case:
- Frequent landslides in the Himalayan region.

CBDCs can make payments across borders efficient: Das

Faster and cheaper cross-border payment services would deliver widespread benefits to people, the RBI Governor noted; Insufficient transparency in such payments remains a challenge, he said

The Hindu Bureau
MUMBAI

Reserve Bank of India Governor Shaktikanta Das on Monday said that high cost, low speed, limited access and insufficient transparency remained key challenges to existing cross-border payments, and that adoption of the Central Bank Digital Currencies (CBDCs) can make such payments efficient.

"Faster, cheaper, more transparent, and more inclusive cross-border payment services would deliver widespread benefits to people," he said in his keynote address at the G20 TechSprint Finale 2023.

"With its instant settlement feature, I believe, CBDCs can play an important role in making cross-border payments cheaper, faster and more secure,"

Mr. Das emphasised.

He added that the use of local currencies in cross-border payments could help to shield emerging market currencies from global shocks, protect against exchange rate fluctuations and encourage the development of local forex and capital markets.

"As all of us are starting on a clean slate on the CBDC front, the adoption of the right technology platform, which is inter-operable, would be a great benefit to the future of cross-border payments ecosystem," he said.

Vouching for CBDCs

RBI Governor Shaktikanta Das elaborated on the various benefits that CBDCs can offer the global economy

- With its instant settlement feature, CBDCs can make cross-border payments more secure, Mr. Das said
- Using local currencies in cross-border payments can shield emerging market currencies from global shocks, he added
- The adoption of an inter-operable technology platform can benefit the cross-border payments ecosystem, Mr. Das noted

State Bank of India allows CBDC users to link to UPI

The Hindu Bureau
MUMBAI

The State Bank of India (SBI) said on Monday it had implemented Unified Payments Interface (UPI) interoperability in the Digital Rupee or Central Bank Digital Currency (CBDC).

"This cutting-edge feature, accessible through the 'eRupee by SBI' application will empower SBI CBDC users to effortlessly scan any merchant UPI QR code for swift and secure transactions," the lender said in a statement.

"This integration will be a game changer for the digital currency ecosystem," it further said.

In the news:
- RBI Governor said that high cost, low speed, limited access and insufficient transparency remain key challenges to existing cross-border payments.
- CBDC can make such payments efficient.

Refer to daily analysis on May 5th for additional information.

About Central Bank Digital Currency:
- Reserve Bank of India broadly defines CBDC (Digital Rupee (e₹)) as the legal tender issued by a central bank in a digital form.
- It is akin to sovereign paper currency but takes a different form, exchangeable at par with the existing currency and shall be accepted as a medium of payment, legal tender and a safe store of value.
- Types of CBDC
  - Retail: available for use by all i.e. private sector, non-financial consumers and businesses
  - Wholesale: designed for restricted access to select financial institutions.

Advantage
- reduction in operational costs involved in physical cash management
- fostering financial inclusion,
- bringing resilience, efficiency, and innovation in the payments system
- boosting innovation in cross-border payments space
- providing the public with uses that any private virtual currencies can provide, without the associated risks.

NGMA EXHIBITION TO BE INAUGURATED BY SPOUSES OF G20 LEADERS

As world gathers, India's civilisational prowess, rich art on display

DIVYAA
NEW DELHI, SEPTEMBER 4

IN THE summer of 2018, the Archaeological Survey of India (ASI) had stumbled upon a 4,000-year-old chariot during excavations in Uttar Pradesh's dusty hamlet Sanauli.

The find, the ASI said, had the potential to "recalibrate" India's position on the map of ancient history. In fact, this chariot was found to have many similarities with those unearthed in Mesopotamia, shedding light on the progress the Indian civilisation had made at the time, on par with the 2000 BCE Mesopotamia.

To highlight this to the world during the upcoming G20 Leaders' Summit, the remains of this chariot have been brought to Delhi's National Gallery of Modern Art O(NGMA), as part of an exhibition of hundreds of such landmark objects that aims to put India's civilisation glory on the world map.

On September 9, as talking heads of the world deliberate upon geopolitics, food security and mitigation of conflicts at Bharat Mandapam, less than 2 km away at NGMA, their spouses will inaugurate "an exhibition dedicated to India's civilisation prowess and artistic excellence", titled 'Roots and Routes: Past Present and Continuous', being put together by Ministry of Culture.

The 500-piece exhibition will also display Indian antiquities and sculptures (some even 2,500 years old), pre-modern paintings and manuscripts, sourced from

various central government museums and galleries and ASI's site museums, becoming the first-ever showcase that puts up all these priceless objects at one place. All the works are originals from various government repositories, an official told *The Indian Express*.

The exhibits will take up almost the entire 12,000 square metres of exhibition space at NGMA, which is one of the largest modern art museums in

Two of the antiquities on display at the NGMA

the world. "The exhibition traces India's roots and also explores interconnectedness — both within India and of India with the world," the official said.

Some works have been brought on loan from the Indian Museum in Kolkata, which is among the oldest museums in the country; the Government Museum in Chennai; the National Museum in Delhi; the Mathura Art Museum; and the Government Museum and Art Gallery in Chandigarh. The museum in Chandigarh has sent 19 Gandhara sculptures, three terracotta sculptures from Akhnoor, two Buddhist metal sculptures of Nagapattinam and two Pahari miniature paintings for the exhibition.

From Chennai, a selection of Buddhist relics of Amaravati and

Chola bronzes have been received for the showcase. A body of bronze-cast sculptures made during the 10th to 13th centuries in southern India, Chola bronzes are especially known for depictions of Lord Shiva as Nataraja.

The 2,000-year-old Amaravati marbles, also from Chennai, are the remnants of a Buddhist stupa built by the Satavahana kings, and are considered among the oldest Buddhist art in the world. In recent years, India has been positioning itself as 'the birthplace of Buddhism', calling on tourists from around the world to visit the Buddhist Circuit, retracing the steps of Lord Buddha's life and times through seven sites.

Sources say since restitution and repatriation of cultural heritage is among the major themes

of the cultural track of India's G20 Presidency, Indian antiquities will be showcased in all their glory. During the first G20 Culture Working Group meeting in Khajuraho earlier this year, the government organised an exhibition dedicated to repatriated antiquities.

Officials said the exhibition has sections dedicated to India's democratic ethos, shared traditions and outreach, also to sustainability and environment, in alignment with various G20 themes. "The Ministry of Culture has identified some of the most iconic artworks from across the country, and requested their loan for the exhibition," they said, adding the National Museum, New Delhi, is the nodal agency for handling insurance and transportation of these works.

Category:
- ➤ **Prelims**
- ➤ **GS-1**

Context:
- The spouses of G20 leaders will inaugurate the exhibition named "an exhibition dedicated to India's civilisation prowess and artistic excellence".
- The 500 piece exhibition to display Indian antiquities and sculptures, pre-modern paintings and manuscripts etc.

In the news:
- Few objects to be displayed:
  - ○ 4000 year old chariot found in Sunauli (this chariot has many similarities with those from 2000 BCE Mesopotamia).
  - ○ Sculptures made in Gandhara style.
  - ○ Metal Buddhist sculptures from Nagapattinam.
  - ○ Pahari miniature paintings.
  - ○ Buddhist relics of Amravati
  - ○ Chola Bronzes (Lord Nataraja)
- Restitution and repatriation of cultural heritage is among the major themes of India's G20 presidency.

Suggested reads for the day:

- Emerging countries need women-led climate action in The Hindu
- Understanding Laicite, the French principle of secularism in The Hindu -G20, a pathfinder in The Indian Express

Meet Delhi zoo's new residents — eight stump-tailed macaques

The macaques have been brought to the zoo from the Aizawl Zoological Park in Mizoram. *Wikimedia Commons*

EXPRESS NEWS SERVICE
NEW DELHI, SEPTEMBER 4

THE DELHI zoo now houses a new animal species — the stump-tailed macaque. Eight stump-tailed macaques have been brought to the zoo from the Aizawl Zoological Park in Mizoram.

The macaques, which are listed as 'vulnerable' on the IUCN Red List of species, have been placed in quarantine for a minimum of 21 days and are likely to be released into an enclosure for public viewing only after that, a zoo official said. The animals, four males and four females, arrived at the Delhi zoo three days ago.

The addition of the macaques takes the total number of species at the zoo to 97. The Delhi zoo housed the stump-tailed macaque till 2014. "We had a pair of them, but they did not breed," a zoo official said.

Three pairs of silver pheasants, a bird, will be sent to Aizawl in exchange for the macaques.

According to details with the Central Zoo Authority (CZA) and the Wildlife Institute of India (WII), the stump-tailed macaque is found in evergreen forests in South Asia, including parts of Northeast India in forests south of the Brahmaputra. They are known to eat fruits, leaves, seeds, insects and small animals like frogs, and are found in parts of Mizoram, Manipur and Nagaland. In 2018, the CZA inventory showed the presence of 43 stump-tailed macaques at nine Indian zoos. They have thick, long, brown fur and pink or red faces.

A book on the stump-tailed macaque prepared by the CZA and the WII noted that the animal "faces threats to their long-term survival in their natural habitats across their distribution range".

"Maintenance of demographically stable and genetically viable ex-situ (conservation of species outside their natural habitat) populations is thus crucial for ensuring the continued survival of the species," it noted.

For prelims:
- Stump-tailed macaque
- Invasive species

Tuesday, September 5, 2023