

Defamation

- The Constitution of India under Article 19(2) had declared “defamation” as one among the exceptions to free speech which was thereby validated under Sections 499 and 500 (dealing with the definition and punishment of defamation cases) of the Indian Penal Code (IPC).
- One is accused of criminal defamation when an imputation is made with the intention to harm, or having reason to believe that it will harm a person’s reputation.
- In criminal defamation, the actual harm inflicted or suffering caused is not a condition to constitute once as intention or knowledge is sufficient
- Even in Lily Thomas versus Union of India (2013), through which Section 8 (4) of the Representation of People Act (1951) was struck down, the Supreme Court rebutted in explicit terms the concern that the disqualified legislator would become helpless by quoting from the Rama Narang judgment (1995) that the power to stay the order of conviction would remain unscathed.

THE HINDU

Cloud storage and legacy system

- In June, a bot on the messaging

platform Telegram allegedly returned the personal data of Indian citizens who registered with the CoWIN portal.

- The country’s Health Ministry denied reports of any data leak and said that the Indian Computer Emergency Response Team (CERT-In) was reviewing the existing security infrastructure of the portal.

What is cloud storage and why do companies use it?

- Cloud storage is a method through which digital data, including files, business data, videos, or images, are stored on servers in off-site locations.
- These servers may be maintained by the companies themselves or by third-party providers responsible for hosting, managing, and securing stored data.
- These servers can be accessed by public or private internet connections, depending on the nature of the data.
- Companies use cloud storage to store, access and maintain data so that they do not need to invest in operating and maintaining data centers.

What are the risks associated with cloud storage?

- The risks arise from the deployment of incompatible legacy IT systems and third-party data storage

architecture.

- Additionally, the use of weak authentication practices and easily guessable passwords can allow unauthorized individuals to access sensitive data.

How do legacy systems weaken cloud storage setup?

- Due to the lack of support or upgrades, legacy IT security may have known vulnerabilities that are yet to be fixed.
- Such vulnerabilities make them an appealing target for hackers who may use the gaps to gain unauthorized access to cloud resources connected with these legacy systems.
- Additionally, legacy systems may not be capable of supporting more advanced encryption techniques
- The legacy system is outdated computing software and/or hardware that is still in use.
- The system still meets the needs it was originally designed for but doesn't allow for growth
- What are system misconfigurations?
- Cloud storage involves multiple systems, servers, and software working in tandem.
- The overall system is designed to ensure individuals within a company

can access data stored on the cloud as and when required.

- A system misconfiguration arises when there is a lack of thorough security configurations on the devices accessing the cloud data and the servers, or a weakness in the software used

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Genomic sequence and evolution

- Our ability to sequence genomes and genomic research more broadly has significantly enriched our understanding of the genome of humans and the many life forms around us.
- Yet researchers have always been curious about what really constitutes the minimal requirement for a genome compatible with an organism's ability to live freely and replicate
- An early attempt in this direction was led by researchers at the J. Craig Venter Institute (JCVI) in Maryland, U.S
- In 2010, researchers at JCVI were able to synthesize a complete genome of around 1 million base pairs of a modified genome of a free-living organism called Mycoplasma myocytes.
- They named it JCVI-syn1.0.

- This genome could be introduced into a cell and could replicate, thus becoming one of the first synthetic life-forms
- Succeeded in creating a minimal cell deleting around 45% of the genes in the genome of the organism.
- Specifically, the edited genome had 5, 31,000 base pairs and just 473 genes.
- This newer modified synthetic version was named JCVI-syn3.0.
- Additional modifications to the genome resulted in two more versions, dubbed JCVI-syn3. A and JCVI-syn3.B.
- These versions differed from JCVI-syn3.0 by the addition of 19 non-essential genes, making the two newer versions more optimized for laboratory conditions.
- Insights into the evolutionary processes of organisms also open big windows into understanding how antimicrobial resistance emerges, how pathogens evade immune systems, and, possibly, new opportunities to prevent them or be prepared for them

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Nomadic elephant

- Indian and Mongolian troops will take part in the 15th edition of a

bilateral military exercise in Ulaanbaatar from July 17 to 31 aimed at exchanging best practices and developing interoperability

- “Nomadic Elephant” is an annual training exercise that is conducted alternatively in Mongolia and India. Soldiers of the Mongolian Armed Forces Unit 084 and the Indian Army's Jammu and Kashmir Light Infantry Regiment will participate in the exercise,

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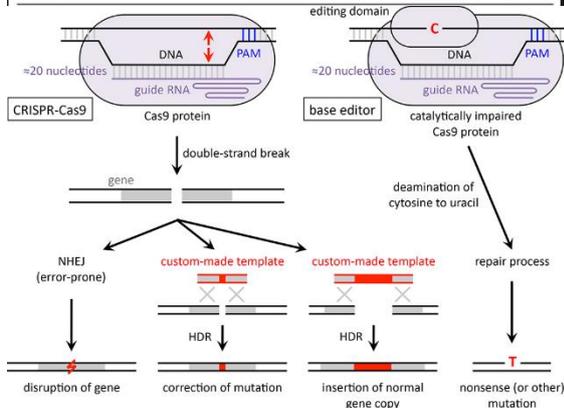
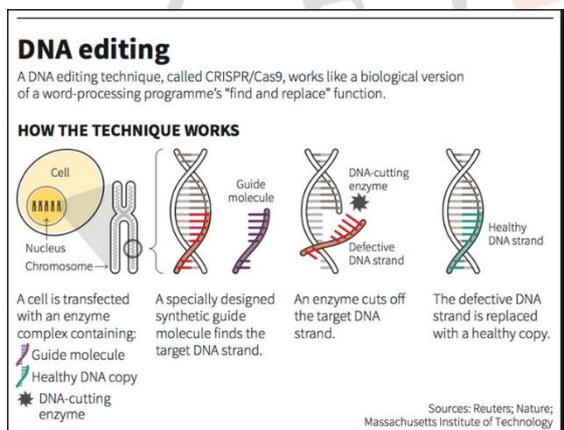
Lightning disaster

- The Union government is not in favor of declaring lightning a natural disaster as deaths caused by it can be prevented by making people aware of safety steps,
- India is among only five countries in the world that has an early warning system for lightning the forecast is available from five days to up to three hours. States such as Bihar and West Bengal have been demanding that lightning deaths be covered as a natural disaster.
- Once this is notified, the victims will be entitled to compensation from the State Disaster Response Fund (SDRF). The Centre makes 75% of the contribution to the SDRF

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CRISPR

- Despite the importance of wood fibers to meet the growing demand for renewable tissue, paper, packaging, textile, and other fiber products, wood fiber production has been less efficient and productive than researchers have hoped.
- CRISPR editing has enabled scientists to design wood in which lignin must be cleaved and dissolved so fiber production can take place more suitable for fiber production (Science).
- Strategic multiplex CRISPR editing improves wood properties better than editing single genes.



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AI Application

- Hundreds of AI-assisted medical devices are currently used in diverse medical tasks, such as assessing health risks and diagnosing diseases like cancer.
- Some studies have shown that AI models can infer race variables albeit in crude, simplistic categories directly from medical images like chest X-rays and cardiac ultrasounds.

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AMOEBA

- researchers from the Kolkata-based National Institute of Cholera and Enteric Diseases (ICMR-NICED) found that not only had the amoeba pathogen *Entamoeba moshkovskii* turned pathogenic, it was the leading cause of amoebic infections in humans; more than half of the amoebic infections were caused by this
- Diarrheal can be caused by bacteria, viruses, and amoeba pathogens
- An amoeba, often called an amoeboid, is a type of cell or unicellular organism with the ability to alter its shape, primarily by extending and retracting pseudopods.
- Amoebae do not form a single taxonomic group; instead, they are found in every major lineage of

eukaryotic organisms



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Pollution effect

- A study has found that an insect's ability to find food and a mate is reduced when its antennae are contaminated by particulate matter from industry, transport, bushfires, and other sources of air pollution

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Cooling demand

- Rising temperatures are already driving cooling demand, and it has been estimated that by 2050, the energy required by cooling could be the equivalent of the combined electricity capacity of the U.S., the European Union, and Japan in 2016, as the International Energy Agency (IEA) reported.
- The results show that regions surrounding the Equator, particularly the subSaharan countries (Central African Republic, Burkina Faso, Mali, South Sudan, and Nigeria) would have the greatest

increase in cooling demand.

- Countries in the Global North (Switzerland, the U.K., Scandinavian countries, Austria, Canada, Denmark, and Belgium), which traditionally experienced cooler temperatures, will experience the largest relative increases in the number of days that require cooling

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Forest conservation bill

- The Bill seeks to amend the Forest Conservation Act, of 1980.
- This is the legislation enacted to protect India's forests and empowers the Central government to regulate the extraction of forest resources from timber and bamboo to coal and minerals by industries as well as forest-dwelling communities.
- A separate Act, the Forest Rights Act, protects the rights of tribals and forest dwellers dependent on forests for their livelihood.
- However, such protection was only available for areas already marked out as 'forest' in Central or State government records. A Supreme Court judgment in 1996, in the Godavarman Thirumulpad case, expanded the scope of such protection.
- India's forest policy of 1988 prescribes a third of the country's

geographical area to be under forests.

- Realistically, only 21% is under such cover and it is about 24% if one also accounts for tree cover outside areas under-recorded forests, plantations, orchards

What do these amendments say?

- The key changes to the Act include inserting a 'preamble' that underlines India's commitment to preserving forests, their biodiversity and tackling challenges from climate change and amending the name of the Act to Van (Sanrakshan Eva Samvardhan) Adhiniyam (translated as Forest Conservation and Augmentation) from the existing Forest (Conservation) Act.
- The amendments also say that the Act would only apply to lands notified in, any government record, as 'forest' on or after 1980.
- If notified forest land was legally diverted between 1980 and 1996, for no forest use, the Forest Conservation Act would not apply.
- Forest land situated 100 km away from international borders and to be used for "strategic projects of national importance" or land ranging from 5-10 hectares for security and defense projects would also be exempted from the Act's stipulations.

- These amendments were necessary, in the Environment Ministry's view, because private parties who wanted to develop plantations in degraded forests or restore tree patches were disincentivized to do so.
- A private plantation or a reforested piece of land that wasn't officially marked out as forest could be retrospectively earmarked under the provisions of the Act as such, forcing the developer of such a plantation to lose rights associated with that patch.
- This was an 'impediment' to India's plans of developing a 'carbon sink' of three billion tonnes by 2030 in line with its commitments under the Paris Agreement.

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