

NEWSPAPER HIGHLIGHT

Future quantum computers might be able to break the cryptographic keys that protect everything. Now, the National Institute of Standards and Technology, United States, has officially endorsed cryptographic technologies that are thought to be resistant to attack from quantum computers, which include CRYSTALS-Kyber.

We are celebrating the 200th birth anniversary of Gregor Johann Mendel and Sir Francis Galton this year. Mendel was born on July 20, 1822; Galton on February 16 1822. Both men sought to understand heredity, transmission of characteristics from parents to children. They shared a common grandparent, Erasmus Darwin. Galton was a polymath; an explorer, a geographer, a meteorologist, a psychologist and a statistician. And so was Charles Darwin; a naturalist, a geologist, a tireless walker, a brave adventurer and the originator of the theory of evolution by natural selection. Darwin published The Origin of Species in 1859, which as Galton has said "gave me freedom of thought".

Researchers at DeepMind have created an AI that knows about as much physics as a three-month-old baby. The team trained the system on simple videos until it could predict patterns such as solidity (two objects do not pass through one another) and continuity (objects do not blink in and out of existence).

Researchers are struggling to investigate a deadly earthquake and its aftershocks in a remote area of Afghanistan. The magnitude-5.9 earthquake struck close to the Pakistan border on June 22. The region, that was hit with the earthquake, has few seismic-monitoring stations, and security concerns have stopped scientists from visiting the area.

The green pit viper may not be more lethal than Russell's viper, the saw-scaled viper, the spectacled cobra or the common krait. But what it injects from its poison glands often renders the polyvalent antivenom derived from the venom of the other four ineffective. The monocled cobra, the banded krait, the lesser black krait, the great black krait, the mountain pit viper and the redneck keelback are among 15 venomous snakes out of 64 recorded so far

GREY WATER & ITS MANAGEMENT

1.A grey water management system, which includes individual household soak pits and community soak pits with either horizontal or vertical type filter, has been successfully implemented in Pappankuzhi Village, Tamil Nadu.

2.This is achieved as a part of the Swachh Bharat Mission Grameen (SBM-G) Phase II campaign of which greywater management is an integral component. Grey Water Grey water is the category of waste water that is not contaminated with faecal matter or urine.

3.This broad category includes post-use water from most domestic or household purposes like bathing, washing dishes, laundry, etc. Grey water can contain harmful bacteria and even faecal matter that contaminates soil and groundwater. The Greywater Management is an integral component of the Swachh Bharat Mission Grameen (SBM-G).

4.Sujalam 2.0 - Grey Water Recycling Project-Started in 2021, Sujlam 1.0 campaign achieved building more than 1 million soak pits at household and community level across the country. Launched on the World Water Day 2022, Sujalam 2.0 is a countrywide Grey Water Recycling Project launched by the Ministry of Jal Shakti.

5.It would focus on creation of institutional-level greywater management assets in Panchayat Ghar, healthcare facilities, schools, Anganwadi Centres (AWCs), community centres and other government institutions. It will encourage the creation of individual and community greywater management assets. Funding - The funds to execute the activities for greywater management will be sourced from SBMG Phase-II or through 15th Finance Commission tied-grants or MGNREGS or through convergence of all.

VARANASI

1.The city of Varanasi, showcasing India's culture and traditions over the ages, will be declared the first "Cultural and Tourism Capital" of the Shanghai Cooperation Organisation. The Beijing-headquartered Shanghai Cooperation Organisation will rotate the title of Cultural and Tourism Capital among the member states every year. Varanasi or Benaras or Kashi is one of the oldest living cities in the world. It is located in Uttar Pradesh, and is located on the left bank of the Ganges (Ganga) River.

2.It is India's ancient city, which is one of the seven sacred cities of Hinduism. Seven sacred cities of Hinduism are Ayodhya, Mathura, Haridwar, Varanasi, Kanchipuram, Ujjain, and Dwarka. History - Varanasi's early history is that of the first Aryan settlement in the middle Ganges valley. Varanasi was the capital of the kingdom of Kashi during the time of the Buddha (6th century BCE), who gave his first sermon nearby at Sarnath.

3.It remained a centre of religious, educational, and artistic activities as attested by the Chinese Buddhist pilgrim Xuanzang, who visited it in about 635 CE. Varanasi subsequently declined during 3 centuries of Muslim occupation, beginning in 1194. It became an independent kingdom in the 18th century, and under subsequent British rule it remained a commercial and religious centre.

NATIONAL INSTITUTIONAL RANKING FRAMEWORK 2022

1.The Ministry of Education has launched the seventh consecutive edition of the National Institutional Ranking Framework (NIRF) 2022. The NIRF was approved by the Ministry of Human Resource Development (MHRD) and launched in 2015. It ranks colleges, universities and research institutions and also provides an overall ranking of all of them combined. Institutes are also ranked across 7 subject domains, namely engineering, management, pharmacy, law, medical, architecture and dental.

2.Methodology - The ranking framework outlines a methodology to rank institutions across the country. The

across Northeast India. Most of the snakebite cases in the region involve different species of the green pit viper, making up the other venomous snakes.

Gophers graze on roots that grow into their large network of tunnels. Scientists installed cameras in trenches that they dug around tunnels used by pocket gophers. The roots of grasses quickly filled the tunnels. The animals nibbled on the roots to nourish themselves and stimulate root regrowth.

More than 4.5 billion years ago, it's possible that Mars, the Red Planet, had a crust comparable to Iceland today. This discovery, hidden in the oldest martian fragments found on Earth, could provide information about our planet that was lost over billions of years of geological movement and could help explain why the Earth developed into a planet that sustains a broad diversity of life and Mars did not. A 4.48-billion-year-old meteorite, informally named Black Beauty, recorded the first stage of the evolution of Mars and, by extension, of all terrestrial planets, including the Earth. "As the Earth lost its old surface mainly due to plate tectonics, observing such settings in extremely ancient terrains on Mars is a rare window into the ancient Earth surface that we lost a long time ago.

President Joe Biden, speaking at a summit of Arab leaders, said that the United States "will not walk away" from West Asia as he tries to ensure stability in a volatile part of the world and boost the global flow of oil to reverse rising gas prices.

Ukrainian authorities across the country reported new Russian missile strikes and shelling on Saturday that killed at least 16 more civilians, deaths that came after Russia's top military announced it was stepping up its onslaught against its neighbour.

China's President Xi Jinping held a rare meeting with Chinese military commanders and troops involved in the ongoing standoff with India in eastern Ladakh.

Children across the country have put eradication of poverty and corruption as some of the goals for India at 100, in their responses to the 'Postcards to PM' initiative of the Culture Ministry as a part of Azadi Ka Amrit Mahotsav.

The Defence Ministry has once again extended the deadline to submit responses to the Request For Proposal (RFP) in the over ₹40,000-

framework evaluates institutions on five parameters: Teaching, Learning & Resources (TLR), Research & Professional Practice (RP), Graduation Outcomes, Outreach & Inclusivity (OI), and Perception (PR).

3. Findings of the NIRF 2022 - Indian Institute of Technology, Madras (IIT-M) is the top higher educational institute in the country followed by the Indian Institute of Science (IISc), Bengaluru, and IIT Bombay. Among the universities, IISc, Jawaharlal Nehru University and Jamia Millia Islamia were among the top three. Among the colleges, Miranda House, Hindu College and Presidency College were among the top three. Among the research institutes, the IISc Bengaluru, IIT-Madras and the IIT-Delhi were among the top three.

SCHEME FOR REBATE OF STATE AND CENTRAL TAXES AND LEVIES

1. The Union Ministry of Textiles has extended the Scheme for Rebate of State and Central Taxes and Levies (RoSCTL) for export of garments/apparels, and made-ups till March 31, 2024. This move was authorised by the Ministry of Commerce and Industry. The government has approved the continuation of the scheme to boost exports and job creation in the textile sector. In 2019, the Ministry of Textiles notified the Scheme for Rebate of State and Central Taxes and Levies (RoSCTL).

2. This scheme replaced the Scheme for Rebate of State Levies (RoSL) following the introduction of GST in 2017. This scheme aims to reimburse all embedded State and Central Taxes/ Levies for exports of manufactured goods and garments. Importer-Exporter Codes (IECs) are necessary in order to apply for the RoSCTL programme. Under this scheme, the exporters are issued a Duty Credit Scrip for the value of embedded taxes and levies contained in the exported product. Exporters can use this scrip to pay basic Customs duty for the import of equipment, machinery or any other input.

3. **Coverage - The Rebate of State Taxes and Levies includes VAT on fuel, mandi tax, embedded SGST paid on inputs, duty of electricity, stamp duty on export documents, purchases from unregistered dealers, etc.** The Rebate of Central Taxes and Levies includes central excise duty on fuel, embedded CGST paid on inputs, purchases from unregistered dealers, inputs for transport sector and embedded CGST, etc.

INDIA'S CLEAN ENERGY TARGET

1. In the recently held Sydney Energy Forum, India proclaimed that it has achieved clean energy targets nine years ahead of schedule. India's Clean Energy Targets - At the UN COP-21 Glasgow Summit, India's target comprises of 500 GW of non-fossil fuel installed power generation capacity by 2030 50% electricity generation from renewable sources by 2030.

2. India's INDC Targets under Paris Agreement 2015 - To reduce the emissions intensity of its GDP by 33 to 35 % by 2030 from 2005 level. To achieve about 40 % cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030.

3. Status of Renewable Energy Capacity - India has installed 162 GW of renewable energy capacity, which is 41% of the total installed electricity (402 GW). Sydney Energy Forum - It was co-hosted by the Australian Government and the International Energy Agency.

4. Business Council of Australia acts as a Forum partner. Ministers from the United States, Japan, India, Indonesia, and the Pacific Island nation of Samoa have attended the forum. Its aim is to secure clean energy supply chains for the Indo-Pacific region. The forum will foster connections between investors, business and government with a focus on innovations in key clean energy technologies such as solar, hydrogen, critical minerals and batteries.

WAIVER TO INDIA FOR PURCHASE OF S-400 MISSILE SYSTEM

1. US House of Representatives has passed a legislative amendment that approves a waiver to India against the punitive CAATSA sanctions for its purchase of the S-400 missile defence system from Russia to help deter aggressors like China. Ro Khanna, the US representative from California's 17th congressional district said, "The United States must stand with India in the face of escalating aggression from China. The US has already imposed sanctions on Turkey under the CAATSA for the purchase of a batch of S-400 missile defence systems from

crore deal for six advanced submarines under Project 75(I), to December end. At the same time, the Navy has approached the Ministry for relaxation of certain specifications, which have made most submarine manufacturers non-compliant.

Chief Justice of India N.V. Ramana on Saturday said aimless and hasty arrests, locking up undertrial prisoners in jail for long spells and making it almost impossible for them to get bail are proof that the system is in dire need of an overhaul. "In our criminal justice system, the process is the punishment. From hasty indiscriminate arrests, to difficulty in obtaining bail, the process leading to the prolonged incarceration of undertrials needs urgent attention," Chief Justice Ramana said in a scathing comment on the onslaught on human rights.

Russia.

2.CAATSA authorises the US administration to impose sanctions on countries that purchase major defence hardware from Russia. Countering America's Adversaries through Sanctions Act (CAATSA)'s core objective is to counter Iran, Russia and North Korea through punitive measures. It was passed in 2017 in response to Russia's annexation of Crimea (2014) and its alleged meddling in the 2016 US presidential elections.

3.About S-400 The S-400 Triumf is a mobile, surface-to-air missile system developed in the 1990s. It is the most dangerous operationally deployed modern long-range SAM (MLR SAM) in the world, considered much ahead of the US-developed Terminal High Altitude Area Defense system (THAAD). India signed a USD 5 billion deal with Russia (in 2018) to buy five units of the S-400 air defence missile systems.