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Science and Technology

Century's longest lunar eclipse on July 27

- The longest total lunar eclipse of this century would be visible from all parts of the country on July 27.
- The celestial body would also be tinged with a reddish hue, a phenomenon popularly referred to as a blood moon.

ICAT releases First BS-VI engine certificate

- The International Centre for Automotive Technology (ICAT) has completed the first BS-VI certification for a heavy duty engine model for M/s Volvo Eicher Commercial Vehicle Limited. The engine has been developed and manufactured indigenously by Volvo Eicher in India.

IGIB find ways to reduce TB's tissue-damaging effects

- Using human macrophage, cells researchers at the Institute of Genomic and Integrative Biology (CSIR-IGIB) have shown the way to reduce TB's tissue-damaging effects.

Pigment in Goa mushroom may help fight cancer

- The mycological laboratory of the Department of Botany, Goa University reported the discovery of a new pigment from local wild mushrooms.
- New sulphur-rich melanin bio-pigment of immense bio-industrial, biomedical (anti-cancer, anti-tumour) and biotechnological potential from local Roen alamis (wild variety of Goan mushrooms that grows on termite hills) or Termitomyces species.

IISER Pune uses nanovesicles to improve cancer drug delivery

- Researchers at the Indian Institute of Science Education and Research (IISER) Pune have been able to increase its uptake by breast cancer cells and achieve greater ability to restrict cancer cell growth by encapsulating the poorly water-soluble anticancer drug Alisertib in polysaccharide nano-sized balls or vesicles.

Improving the stability, bioavailability of TB FDC drug

- The physical stability and bioavailability of a fixed-dose combination (FDC) drug containing four anti-TB medicines rifampicin, isoniazid, pyrazinamide and ethambutol has been vastly improved from 3-4 days to over 30 days by turning to crystal engineering.

Kolkata Museum celebrates early tool-makers of T.N., A.P.

- One of the earliest stone tools from the region discovered by Robert Bruce Foote almost 150 years ago from various sites of Tamil Nadu and Andhra Pradesh, have been put on display for the first time at the Indian Museum in Kolkata.

AIIMS-led team develops highly sensitive, portable test for TB meningitis

- A diagnostic test for TB meningitis (the most severe form of TB) with nearly 100% sensitivity and about 91% specificity has been developed by a multi-institutional team led by Prof. Jaya Sivaswami Tyagi from the Department of Biotechnology at AIIMS.

5.1 Inventions / Discover**Cow urine can cure cancer by Gujarat team**

- Biotechnology scientists at Junagadh Agriculture University in Gujarat have succeeded in their first attempt to kill cancer cells using cow urine. They claim that cow urine can cure most types of common cancers such as those of mouth, cervix, lungs, kidney, skin and breast.

Seven new wasp species discovered in the Amazon forests

- An international team of researchers have discovered seven new wasp species belonging to the genus *Clistopyga* from Peru, Venezuela and Colombia.

Scientists discover the world's oldest colours

- Scientists have discovered the oldest colours in the geological record 1.1 billion-year-old bright pink pigments extracted from rocks deep beneath the Sahara desert in Africa.

IIT Bombay: Breakthrough in stem cell proliferation

- A major obstacle in using human mesenchymal stem cells (hMSCs) to treat a variety of diseases has been successfully overcome by a team of researchers at the Indian Institute of Technology (IIT) Bombay.

Silk-based bioactive wound dressing and skin graft

- Researchers at the Indian Institute of Technology (IIT) Guwahati have developed bioactive wound dressings and bio-artificial skin by using silkworm silk fibroin as matrix and coating it with recombinant spider silk proteins.

World's First Remotely Operable Microscope

- IIT Madras Unveils World's First Remotely Operable Microscope worth Rs 40 Crore. The Atom Probe Microscopes are a kind of 3D microscopes which reconstruct the structure of an object atom-by-atom.

IISc researchers find cholesterol helps bacterial toxins kill cells

- Researchers at the Indian Institute of Science (IISc), Bengaluru, have found that cholesterol present in cell membrane plays a crucial role in stabilising and binding together the pore-forming toxin cytolysin A.

World's fastest man-made spinning object developed

- Scientists have developed the fastest man-made rotor in the world, which they believe will help them study quantum mechanics. At more than 60 billion revolutions per minute, this machine is more than 100,000 times faster than a high-speed dental drill.

IISc researchers observe superconductivity at ambient temperature, pressure

- Indian Institute of Science (IISc) Bengaluru researchers have been able to achieve superconductivity at ambient temperature and pressure for the first time.

Novel biomarkers for gastric cancer progression

- Researchers from University of Delhi and National Institute of Cancer Prevention and Research, Noida have identified two proteins survivin and STAT3 potential markers of the disease, these proteins could also be suitable therapeutic targets in preventing gastric cancer progression.

Scientists confirm Einstein's super massive black hole theory

- A team of international scientists observing a star in the Milky Way have for the first time confirmed Einstein's predictions of what happens to the motion of a star passing close to a super massive black hole.

Rare blood group ‘P null’ phenotype Identified

- A team of doctors, led by Shamee Shastry from the Blood Bank of Kasturba Medical College (KMC) Mangaluru, has identified a rare blood group called “pp” or “P null” phenotype.

NBRC researchers decipher how Zika virus causes microcephaly

- National Brain Research Centre-led team of researchers has successfully identified the molecular and cellular mechanisms by which Zika virus causes microcephaly.

5.2 Space Science**Astronomers capture image of a planet’s birth**

- Astronomers have captured the first confirmed image of a planet forming in the dust swirling around a young star. They said the planet appears as a bright spot in the snapshot taken using the European Southern Observatory’s Very Large Telescope in Chile.

Cosmic rays from massive star system may reach earth

- Eta Carinae the most luminous and massive stellar system within 10,000 light-years is accelerating particles to high energies, some of which may reach the earth as cosmic rays, a study using data from a NASA telescope has found.

Flight testing of Crew Escape System – Technology Demonstrator

- ISRO carried out a major technology demonstration, the first in a series of tests to qualify a Crew Escape System, which is a critical technology relevant for human spaceflight.
- The Crew Escape System is an emergency escape measure designed to quickly pull the crew module along with the astronauts to a safe distance from the launch vehicle in the event of a launch abort.

ISRO's li-ion cell tech has many takers

- The Indian Space Research Organization's (ISRO) move to transfer indigenous technology for manufacture of lithium-ion battery has received an overwhelming response from industry, according to the space agency.

NASA to launch probe into sun's scorching atmosphere

- NASA is preparing to send the Parker Solar Probe, a robotic spacecraft the size of a small car closer to the sun, enduring wicked heat while zooming through the solar corona to study this outermost part of the stellar atmosphere that gives rise to the solar wind.

Underground lake detected on Mars

- Using a radar instrument on an orbiting spacecraft, scientists have spotted salt-laden lake under ice on the southern polar plain of Mars, a body of water they called a possible habitat for microbial life.
- It is the first stable body of liquid water ever found on Mars.

ISRO ropes in three partners to assemble 27 satellites

- The Indian Space Research Organization (ISRO) has roped in three partners to help it assemble 27 satellites at a quick pace over the next three years.

Mars will be at its closest point to Earth

- On July 31, Mars will be at its closest point to Earth in 15 years. It will be at a distance of around 57.6 million km from Earth, which is the closest since 2003 when it came within 55.7 million km of Earth.

5.3 App/ Web Portal/ Toll Free**Election Commission portal to aid disabled voters**

- The Election Commission will launch a voter education and electoral participation portal on July 3, with a section dedicated to the Persons with Disabilities (PwDs).
- The programme on “Inclusion of Persons with Disabilities (PwDs) in the Electoral Process” is being organised with a view to come up with a national policy on the issue.

Migrant population to benefit through ‘mPassport Seva’

- The External Affairs Ministry has simplified the procedure for seeking passports by lifting jurisdictional restrictions. The applicant can now apply for a passport from anywhere through his/her Android mobile phone using mPassport Seva mobile app.
- The mPassport Seva mobile app was launched on the sixth Passport Seva Diwas on June 26 by External Affairs Minister Sushma Swaraj in New Delhi.

Tamil Nadu Chief Minister launches Mangalam Masala mobile app

- Tamil Nadu chief minister Edappadi K Palaniswami launched a mobile app called Mangalam Masala to help consumers buy spices sold by the Erode Cooperative Society. The app can be used to purchase spices from the society and payment can be done using it.

GST ‘Verify App’

- The Central Board of Indirect Taxes and Customs (CBIC) have developed a mobile app ‘GST Verify’ to protect interest of consumers.

KVIC launches e-marketing system

- The Khadi and Village Industries Commission (KVIC) launched its, in-house developed, single-umbrella e-marketing system named Khadi Institution Management and Information System (KIMIS) in New Delhi.

“cVIGIL”

- Election Commission of India launches Mobile App “cVIGIL” to enable citizens to report on violation of election code of conduct.

Coal Mine Surveillance & Management System (CMSMS) and ‘Khan Prahari’

- Union Minister of Coal, Railways, Finance & Corporate Affairs, Shri Piyush Goyal launched the Coal Mine Surveillance & Management System (CMSMS) and Mobile Application ‘Khan Prahari’ developed by CMPDI, Ranchi a Subsidiary of CIL and Bhaskarcharya Institute of Space Application and Geo-informatics (BISAG) at a ceremony at, New Delhi.

Online Guidance System - “Do It Yourself (DIY)”

- Competition Commission of India (CCI) launches an Online Guidance System for determining notifiability of Merger & Acquisitions in terms of the Competition Act, 2002.

Ezi Drive

- Ezi Drive, a leader in driver hire service in Bengaluru and Chennai, has now introduced app-based cab hire services in both the cities, with fixed charges.

Mazhavillu

- The Kerala State government will roll out a mobile app to enumerate transgender in the State.

NALCO – NAMASYA

- An app of NALCO – NAMASYA was launched by the Minister of Mines, Shri Narendra Singh Tomar.

Indian Haji Information System

- Indian Haji Information System, a mobile phone app which would help pilgrims in locating their accommodation. It would also enable them to contact the Indian Haj Mission in case of any emergency.

CIC App

- The Central Information Commission (CIC) has launched a newly updated version of CIC bilingual Mobile app.

‘Parivartana’

- The Chittoor district police have devised a new strategy to tackle rowdy-sheeters by bringing them under the ambit of the unique Parivartana App.

‘Public Library’

- A mobile app, ‘Public Library: Finding community libraries was launched as a part of the first regional public library conference at the M.S. Swaminathan Research Foundation (MSSRF).

Naidu launches e-Pragati core platform

- Chief Minister N. Chandrababu Naidu launched ‘e-Pragati core platform’ at Undavalli. e-Pragati, would act as a platform to connect all departments and stand alone to resolve the issues.

‘Delhi Metro Rail’ App

- Upgraded version of ‘Delhi Metro Rail’ App launched. App to enable users in finding Shortest Route.

Suzuki Connect

- Maruti Suzuki unveiled **Suzuki Connect**, a solution aimed at giving customers access to services such as emergency alerts, vehicle tracking and car assistance.

“Innovate India Platform”

- Atal Innovation Mission, NITI Aayog & MyGov launches “Innovate India Platform”. The #InnovateIndia portal will serve as the common point for all the innovation happening across the nation.

“Go whatsThat”

- Shri Dharmendra Pradhan, Union Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship launched India’s first in-phone guide and mobile application “Go whats That” in Chandigarh.

‘Ramayana Yatra’ Website

- The official website of the ‘Ramayana Yatra’ was launched to provide details of over 50 such sites in the island nation at the second day of the 106th edition of the ‘India International Travel Mart’ (IITM) in Bengaluru.

e-Aksharayan Software

- The Indian government has launched e-Aksharayan, desktop software for converting any scanned or printed Indian language documents into fully editable text.

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