



Current Affairs - May 2020

Month Type



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Appointments

- ▶ *Mustafa Al Kadhim* has been chosen as New Prime Minister of Iraq, after Adel Abdul Mahdi had resigned in November 2019.
- ▶ Adhir Ranjan Chowdhury has been appointed as Chairman of Public Accounts Committee (PAC) of Parliament.
- ▶ DPS Negi has been appointed as Director-General of Labour Bureau in Ministry of Labour and Employment.
- ▶ Government appointed Economic Affairs Secretary Tarun Bajaj as a director on central board of Reserve Bank of India (RBI). He replaces Atanu Chakraborty.
- ▶ Noted Bharatanatyam dancer and former chairperson of Sangeet Natak Akademi Leela Samson will head jury for Rs 25 lakh JCB Prize for Literature 2020.
 - JCB Prize for Literature is an Indian literary award established in 2018, awarded annually with 25 lakh INR prize to a distinguished work of fiction by an Indian writer working in English or translated fiction by an Indian writer.
- ▶ Ralf Speth, Chief Executive of Tata Motors owned Jaguar Land Rover (JLR), has been elected a Fellow of Royal Society in UK.
 - Active since 1660, Royal Society is the oldest scientific academy in continuous existence.
 - Indian-origin Persons Vikram Deshpande (University of Cambridge) is also among new Fellows.
- ▶ Shobhana Narasimhan from Theoretical Sciences Unit (TSU) at Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), has been elected as an International Honorary Member to American Academy of Arts and Sciences.
 - She has done significant work on rational design of nanomaterials, examining how lowering of dimensionality and reduction of size affect material properties. Her work is relevant for a number of different applications, such as nanocatalysts for clean energy applications, and magnetic materials for memory storage.
- ▶ US President Donald Trump appointed Indian American Manisha Singh as his envoy to OECD (Organization for Economic Cooperation and Development).
 - Also, President Trump appointed Indian American Ashok Michael Pinto as US representative to IBRD (International Bank of Reconstruction and Development).

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Awards

- ▶ IIT Madras Professor *Thalappil Pradeep* has been selected for Nikkei Asia Prize 2020, in category of 'Science and Technology'.
 - He would be honoured for his pioneering work in nanotechnology-based water purification.
 - Other Winners -
 - Science and Technology - Thalappil Pradeep (India)
 - Culture and Community - Ram Prasad Kadel (Nepal)
 - Economic and Business Innovation - Anthony Tan (Malaysia) & Tan Hooi Ling (Malaysia)
 - Nikkei Asia Prize recognizes individuals who have contributed to region's sustainable development, in three areas - *Economic and Business Innovation, Science and Technology, Culture and Community*.
- ▶ Joseph J Landsberg, Richard H Waring and Nicholas C Coops won 2020 Marcus Wallenberg Prize for forest sector' for 3-PG (Physiological Principles Predicting Growth), a model to predict forest growth in a changing climate.
 - Prize will be presented by King Carl Gustaf XVI of Sweden, with prize money of 2 million Kronor.

3. ▶ Manipuri doctor *Thangjam Dhabali Singh* has been conferred *Order of Rising Sun* by Japan, for promoting better ties.
 1. He is founder of Manipur Tourism Forum (MTF). He had organised 70th anniversary of Battle of Imphal of Second World War.
4. ▶ Professor Saurabh Lodha from IIT Bombay received Young Career Award in Nano Science & Technology for 2020, instituted by Department of Science and Technology (DST).
 1. It recognises his pioneering contributions in development of logic transistor technologies beyond silicon and nanoelectronic devices based on two-dimensional *Van der Waals* materials.
5. ▶ Pulitzer Prize 2020 -
 1. Winners -
 1. Letters, Drama, and Music -
 1. Fiction - *The Nickel Boys*, by Colson Whitehead (Doubleday)
 2. Drama - *A Strange Loop*, by Michael R. Jackson
 3. History - *Sweet Taste of Liberty: A True Story of Slavery and Restitution in America*, by W. Caleb McDaniel (Oxford University Press)
 4. Biography or Autobiography - *Sontag: Her Life and Work*, by Benjamin Moser (Ecco)
 5. Poetry - *The Tradition*, by Jericho Brown (Copper Canyon Press)
 6. Music - *The Central Park Five*, by Anthony Davis
 7. General Non-fiction - *The End of the Myth: From the Frontier to the Border Wall in the Mind of America*, by Greg Grandin (Metropolitan Books) AND *The Undying: Pain, Vulnerability, Mortality, Medicine, Art, Time, Dreams, Data, Exhaustion, Cancer, and Care*, by Anne Boyer (Farrar, Straus and Giroux)
 2. Journalism -
 1. Public Service - Anchorage Daily News with contributions from ProPublica
 2. Breaking News Reporting - Staff of The Courier-Journal, Louisville, Ky.
 3. Investigative Reporting - Brian M. Rosenthal of The New York Times
 4. Explanatory Reporting - Staff of The Washington Post
 5. Local Reporting - *Staff of The Baltimore Sun*
 6. National Reporting - Dominic Gates, Steve Miletich, Mike Baker and Lewis Kamb of The Seattle Times AND T. Christian Miller, Megan Rose and Robert Faturechi of ProPublica
 7. International Reporting - Staff of The New York Times
 8. Feature Writing - Ben Taub of The New Yorker
 9. Commentary - Nikole Hannah-Jones of The New York Times
 10. Criticism - Christopher Knight of the Los Angeles Times
 11. Editorial Writing - Jeffery Gerritt of the Palestine (Tx.) Herald-Press
 12. Editorial Cartooning - Barry Blitt, contributor, The New Yorker
 13. Breaking News Photography - Photography Staff of Reuters
 14. Feature Photography - **Channi Anand, Mukhtar Khan and Dar Yasin of Associated Press (India)**
 3. Special Awards and Citations -
 1. Ida B. Wells
2. About Pulitzer Prizes -
 1. Given for achievements in newspaper, magazine and online journalism, literature, and musical composition in USA.
 2. Established in 1917 by provisions in will of American (Hungarian-born) Joseph Pulitzer who had made his fortune as a newspaper publisher and is administered by Columbia University in New York City.

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Books

1. ▶ Book *Fear of God*, written by Bomma Devara Sai Chandravadhan (pen name *Vadhan*) has been released.
2. ▶ Book *Shivaji in South Block: The Unwritten History of Proud People*, written by Girish Kuber has been released.
3. ▶ Book *The Room Where It Happened: A White House Memoir*, authored by John Bolton will be released in June 2020.
4. ▶ Book *Vijyant at Kargil: The Life of a Kargil Hero* authored by VN Thapar and Neha Dwivedi. It is 1st biography about Vir Chakra awardee Captain Vijyant Thapar.

- ▶ Culture Minister Prahlad Singh Patel launched e-book titled *Prof. B.B. Lal: India Rediscovered*, on occasion of centenary year of Noted archaeologist B. B. Lal (Born May 2, 1921).

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Committees

- ▶ Corporate Affairs Ministry (MCA) constituted a seven-member committee to examine the comments received on the consultation paper floated by it for enhancing audit independence and accountability in country.
- ▶ Insurance Regulatory and Development Authority of India (IRDAI) has set up a panel, headed by Yegnapiya Bharat, to frame standard professional indemnity policy for insurance intermediaries that can be issued by all insurers.
 1. It came after regulator witnessed several instances where policies taken by insurance intermediaries did not comply with regulatory provisions.

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Days

- ▶ May 1 - Labour Day, also known as International Worker's Day and May Day. In India, first celebration of the Labour Day was organised in Madras by Labour Kisan Party of Hindustan on May 1, 1923.
 1. Labour Day commemorates happenings of May 4, 1886, the Haymarket affair (Haymarket Massacre) in the Chicago. It was a big event as workers were on the general strike for their eight-hour workday, with protests getting violent.
- ▶ May 1 is Formation day of Gujarat and Maharashtra. Both states were formed on May 01, 1960, when Bombay state was split.
- ▶ May 10, 2020 is observed as Mother's Day. Dates vary across Nations.
- ▶ May 2 - World Tuna Day.
 1. May 2, 2020 is also observed as International Astronomy Day. It is Observed twice a year - one in autumn and another in spring. Next Astronomy Day on September 26, 2020.
 2. May 2, 2020 also represents 100th Birth Anniversary of Noted Filmmaker Satyajit Ray. On this occasion, Ministry of Culture's Development of Museums and Cultural Spaces (DMCS) launched short film *A Ray of Genius*.
- ▶ May 3 - World Press Freedom Day. 2020 Theme is *Journalism without Fear of Favor* and host nation is *The Netherlands*.
 1. In December 1993, UNGA following recommendation of UNESCO's General Conference proclaimed 3 May as World Press Freedom Day.
 2. UNESCO marks World Press Freedom Day by conferring the UNESCO/Guillermo Cano World Press Freedom Prize, created in 1997.
 3. Colombian investigative journalist *Jineth Bedoya Lima* has been named as laureate of the 2020 UNESCO/Guillermo Cano World Press Freedom Prize.
 4. May 3, 2020 is also World Laughter Day, first Sunday of May of every year. First celebration was on January 10, 1998, in Mumbai.
- ▶ May 4 is observed as International Firefighters' Day (IFFD), established in 1999, after deaths of five firefighters in tragic circumstances in a bushfire in Australia.
- ▶ May 5 is observed as -
 1. World Hand Hygiene Day.
 2. International Day of the Midwife, Observed since 1991.
 3. May 5, 2020 is also observed as World Asthma Day, Observed on first Tuesday of May.
 4. Birth Anniversary of 7th President of India, Giani Zail Singh (1982 to 1987).
- ▶ May 7 is observed as World Athletics Day.
 1. May 7 is also Birth Anniversary of India's first Nobel laureate Rabindranath Tagore. He started Vishwa Bharati University in Shantiniketan. His birth anniversary is also known as Pochise Boishakh.
 1. On this occasion, National Gallery of Modern Art organised virtual tour *Gurudev: Journey of the Maestro through his visual vocabulary*.
 2. Also, Israel named a street in Tel Aviv after Rabindranath Tagore.
 2. May 07, 2020 is also observed as Vesak (Buddha Jayanti).
- ▶ May 8 - World Red Cross Day, also known as Red Crescent Day. It commemorates birth anniversary of Henri Dunant (born on 8 May 1828), the founder of Red Cross and International Committee of the Red Cross (ICRC).

1. May 8 is also observed as 'World Thalassaemia Day'.
2. May 8 is also observed as *Victory in Europe Day*, Marking formal end of World War II in Europe, when allied powers defeated German leader Adolf Hitler and his Nazi Forces, On May 8, 1945.
10. ▶ May 9 is Birth Anniversary of Pratap Singh I (Also called Maharana Pratap), the 13th Sisodia king of Mewar.
 1. May 09, 2020 is observed as World Migratory Bird Day. It is observed on second Saturday in May and in October.

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Defence

1. ▶ Defence Minister Rajnath Singh approved optimisation of over 9300 posts in Military Engineering Service, in line with recommendations of Lt General Shekatkar Committee.
 1. Committee had recommended this, to enhance combat capability and rebalance defence expenditure of Armed Forces.
2. ▶ Indian Navy launched *Mission Sagar*, to extend helping hand to Indian Ocean Region Nations amid COVID-19 pandemic. Indian Naval Ship Kesari departed for Maldives, Mauritius, Seychelles, Madagascar and Comoros, to provide Food and medical aid Items.
3. ▶ Indian Navy launched Operation *Samudra Setu*, as an effort to repatriate Indian citizens from overseas.
 1. Indian Naval Ships *Jalashwa* and *Magar* are enroute to port of Malè, Maldives to commence evacuation, Under Phase-1.

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Economy

1. ▶ *BharatPe* launched 2 voice-based applications - *Paisa Bolega* and *BharatPe Balance*. These will enable account holders to access transactions and balance using without touching phones, amid COVID-19 pandemic.
 1. *Paisa Bolega* button provides voice alerts of transactions through their *BharatPe QR*.
 2. *BharatPe Balance* will provide information about total available balance across deposits, loan and daily collections through *QR*.
2. ▶ As per Centre for Monitoring of Indian Economy, 12.15 Crore people have lost their Jobs amid COVID-19 Outbreak, with 27.1 % Unemployment.
 1. 9.13 Crore daily wagers are out of jobs due to COVID-19 crisis.
 2. Also, 1.82 Crore entrepreneurs are without work.
 3. Around 1.78 Crore salaried workers are also affected due to COVID-19.
 4. Rural unemployment increased from 20.88% to 26.16%.
3. ▶ As per S&T survey 2018 by National Science and Technology Management Information (Under Department of Science and Technology).
 1. Expenditure in R&D -
 1. India's Gross expenditure in R&D has tripled between 2008 - 2018, from 39437 crores in 2007- 08 to 113825 crores in 2017-18.
 2. India's per capita R&D expenditure increased to \$ 47.2 in 2017-18 from \$ 29.2 in 2007-08.
 3. India spent 0.7% of its GDP on R&D in 2017-18, while same among other developing BRICS countries - Brazil 1.3%, Russian Federation 1.1%, China 2.1% and South Africa 0.8%.
 2. Number of researchers -
 1. Number of researchers per million population in India increased to 255 in 2017 from 218 in 2015 and 110 in 2000.
 2. India occupies 3rd rank in terms of number of Ph. D.'s awarded in Science and Engineering (S&E) after USA (39,710 in 2016) and China (34,440 in 2015).
 3. Scientific publication -
 1. India ranks 3rd, in terms of Scientific Publication.
 2. During 2018, India was ranked at 3rd, 5th and 9th in scientific publication output as per the NSF, SCOPUS and SCI database respectively.
 4. Resident Patent Filing activity -
 1. India ranks 9th, in terms of Resident Patent Filing activity.
 2. According to WIPO, India's Patent Office stands at the 7th position among the top 10 Patent Filing Offices in the world
4. ▶ Finance Minister Nirmala Sitaraman launched INR-USD Futures and Options contracts on two International Exchanges - BSE's India INX and NSE's NSE-IFSC, at GIFT International Financial Services Centre at Gandhinagar This will be available 22 hours

across all time zones for all global participants from GIFT IFSC.

5. ▶ India signed 500 Million USD Loan Agreement with Beijing Based Asian Infrastructure Investment Bank (AIIB), for *COVID-19 Emergency Response and Health Systems Preparedness Project*. This is the first ever health sector support from AIIB to India.
6. ▶ Manulife Investment Management (Singapore) Pte Ltd acquired 49% stake in Mahindra & Mahindra Financial Services' subsidiary Mahindra Asset Management Company (AMC), for \$35 million.
 1. Agreement for the same was inked in June 2019. Mahindra Finance now owns 51% stake in its AMC.
7. ▶ National Bank for Agriculture and Rural Development (Nabard) disbursed 12,767 crores to 33 State Co-operative Banks (StCBs) and 45 Regional Rural Banks (RRBs), to augment their resources for extending credit to farmers during lockdown.
 1. Earlier, RBI had announced a 50,000-crore refinance facility for Nabard, SIDBI and National Housing Bank (NHB).
8. ▶ Polycab India Limited acquired 50% stake in Ryker Base Private Limited (RBPL), held by Trafigura Pte Ltd (Singapore), for approx US \$ 4 Million.
 1. Polycab India had entered into a 50:50 JV with Trafigura in 2016 to incorporate Ryker to improve quality of its key input i.e., copper.
 2. Current transaction has terminated existing joint venture (JV).
9. ▶ Reliance Industries Subsidiary Reliance Strategic Business Ventures Limited(RSBVL) increased its stake to 26.3% on a fully diluted basis in US-based SkyTran Incorporated(Inc), a venture-funded technology company which develops modern transport modes including personal rapid transit system.
10. ▶ Reliance Industries approved raising over 53125 crores from its shareholders through rights issue, biggest-ever by an Indian company.
 1. Recently, Facebook spent \$5.7 billion to buy 9.99% stake in Reliance's digital arm Jio.
11. ▶ Small Industries Development Bank of India (SIDBI) will launch *SME Services Platform*, as a digital platform to educate stakeholders in small and medium enterprises (SME) ecosystem. It will give micro, small and medium enterprises (MSMEs) information about starting operations, getting finance or credit enhancement and other support services.
12. ▶ Supreme Court ruled that provisions of Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act 2002, will be applicable to state and multi-state cooperative banks.
 1. Ruling challenged Parliament's decision to amend Section 2(c) of Sarfaesi Act, which allows banks and financial institutions to seize and auction properties of defaulters to recover their dues, and include cooperative banks among those who can exercise powers under Act.
 2. With this judgment, state and multi-state cooperative banking societies can now seize and sell assets to recover their dues.
 3. SC also said that state and multi-state cooperative banks will fall under definition of banks under provisions of Banking Regulation Act.
13. ▶ Traders' body Confederation of All India Traders (CAIT) will launch national e-commerce marketplace 'bharat market', for all retail traders.
 1. It will integrate capabilities of various tech companies to provide end-to-end services in logistics and supply chains from manufacturers to end consumers.
14. ▶ US Based Silver Lake partners bought 1.15% stake in Reliance Industries subsidiary Jio Platforms, for Rs 5,656 crores (\$750 million).
 1. Also, Social Network Facebook had recently invested INR 43574 crores in Jio Platforms, for 9.99% stake. It was Largest FDI in India's Tech Industry.
15. ▶ US Based Vista Equity Partners invested 11367 crores into Reliance Jio Platforms for a 2.32 % stake.
 1. This would be the third major investment in Jio in less than three weeks. Earlier,
 2. US Based Silver Lake partners bought 1.15% stake in Reliance Industries subsidiary Jio Platforms, for Rs 5,656 crores (\$750 million).
 3. Social Network Facebook invested INR 43574 crores in Jio Platforms, for 9.99% stake. It was Largest FDI in India's Tech Industry.
16. ▶ World Bank approved USD 400 million multi-year financial support to India, To enhance and safeguard coastal and marine resources.
 1. First phase will cover eight coastal States - Maharashtra, Karnataka, Goa, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal, along with 3 coastal Union Territories - Puducherry, Andaman, and Nicobar and Daman and Diu.
 2. These states / UTs will get USD 180 million for Enhancing Coastal and Ocean Resource Efficiency (ENCORE).

International

1. ▶ As per Mercom India report *India Solar Market Leaderboard 2020* -
 1. India installed 7.3 GW of solar capacity in 2019, emerging 3rd largest solar market, with 35.7 GW capacity at end of December 2019.
 2. Solar accounted for 41% of new power capacity additions in 2019 behind coal (44%).
 3. At end of 2019, cumulative rooftop solar installations in India reached 4365 MW, with 1104 MW installed in 2019.
2. ▶ Chinese Kuaizhou-1A (Y6) rocket launched first two operational satellites for *Xingyun narrowband constellation*, with First satellite named *Wuhan* and Other *Xingyun-2*.
 1. Each satellite has a launch mass of 93 kg and its main payload is an L-band communication system and a trans-satellite laser communication package.
 2. Also, A large Long March 5B rocket which was earlier launched successfully by China, fell into atmosphere over Atlantic Ocean. It became most massive object in nearly 30 years to perform an uncontrolled re-entry from orbit.
3. ▶ International Energy Agency (IEA) released report *Global Energy Review 2020* -
 1. Beyond immediate impact on health, current COVID-19 crisis has major implications for global economies, energy use and CO2 emissions.
 2. Countries in full lockdown are experiencing an average 25% decline in energy demand per week and countries in partial lockdown an average 18% decline.
 3. Global energy demand declined by 3.8% in the first quarter of 2020.
 1. Global coal demand fallen by almost 8% compared with first quarter of 2019.
 2. Oil demand fell 5% in first quarter.
 3. Gas demand went down by 2%.
 4. Renewables were only source that posted a growth in demand, driven by larger installed capacity and priority dispatch.
 5. Electricity demand has been depressed by 20%.
 4. Result will be 6% contraction in energy demand by 6%, largest in 70 years in percentage terms and largest ever in absolute terms. Impact of Covid-19 on energy demand would be over 7 times larger than impact of 2008 financial crisis on global energy demand.
 5. Global electricity demand is expected to fall by 5%, with 10% reductions in some regions.
 6. Global CO2 emissions are expected to decline by 8%, or almost 2.6 gigatonnes (Gt), to levels of 10 years ago. It is six times larger than previous record reduction of 0.4 Gt in 2009, caused by global financial crisis.
4. ▶ Iran Introduced New currency **Toman**, which is equivalent to 10000 Rials (Earlier National Currency).
 1. Idea of removing four zeros from currency gained strength after 2018 when U.S. exited Iran's 2015 nuclear deal and reimposed sanctions. It caused Rial to lose 60% of its value.
5. ▶ Russia awarded North Korean leader Kim Jong-un a commemorative war medal, to mark 75th anniversary of victory over Nazis.
 1. Kim was awarded for preserving the memory of soviet soldiers that died during World War II in North Korean territory.
 2. In 1948, diplomatic relations were established between Soviet Union and North Korea. During Korean War, Soviet military forces supported Korean People's Army. North Korea was established as communist bloc gaining maximum support from Russia.
6. ▶ U.S. Commission on International Religious Freedom (USCIRF) downgraded Indian ranking by naming it into the list of *Country of Particular Concern*, from *Special Watch List* earlier -
 1. This is the first time since 2004 that India has been placed in this category, under International Religious Freedom Act (IRFA) 1998. Total 14 Nations are under this category.
 2. India rejected this US religious freedom report, calling it biased.
7. ▶ UNICEF released report called *Lost at Home*, which enforces risks and challenges of internally displaced children and need to protect them.
 1. At end of 2019, around 46 million people were internally displaced due to conflict and violence, with approx 20 Million Children.
 2. Highest number of children that were displaced were in Middle East and North Africa (MENA).
8. ▶ US placed India and 9 Other nations (Including China) on *Priority Watch List* due to lack of measurable improvements in intellectual property framework.

1. US alleged that intellectual properties and their enforcements have deteriorated equitable market access for Americans in these countries. Other countries - Argentina, Algeria, Chile, Russia, Indonesia, Saudi Arabia, Venezuela, Ukraine, China.
2. Countries that were removed from the list included Canada, Kuwait and Thailand.
9. ▶ World Health Organization and United Nations Postal Agency released commemorative stamp to mark 40th anniversary of eradication of small pox.
 1. WHO small pox eradication campaign was initiated in 1967. In 1980, world was declared is free from small pox.

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National

1. ▶ Andhra Pradesh CM Jaganmohan Reddy has launched mobile application *CMAPP (Comprehensive Monitoring of Agriculture, Price, and Procurement)*, aiming to monitor needs of farmers.
 1. It showcases all data relating to the cost, procurement, and marketing facilities of the farmers for their agriculture produce.
2. ▶ As per Internet and Mobile Association of India report, Number of internet users in rural India has surpassed Those in Urban India.
 1. Rural India had 227 million active internet users and urban India had 205 million internet users. This is the first time in Indian history the number of rural internet users have surpassed urban internet users.
3. ▶ As per Ministry of New and Renewable Energy report *Impact of Energy Efficiency Measures 2018-19 -*
 1. Energy initiatives of BEE (Bureau of Energy Efficiency) has helped save 89122 crores, saving 113 billion units of electricity.
 2. Schemes have also helped to reduce 151.74 million tonnes of carbon dioxide emissions.
4. ▶ Bengaluru City Corporation launched “Pranavayu Programme” to create awareness about the respiratory health of citizens.
 1. It aims to help people in increasing oxygen level of people by themselves.
 2. COVID-19 stimulates breathing difficulties through chemical reactions. Virus binds itself with haemoglobin in Red Blood Cells. This is the main reason for disruption in respiratory process.
5. ▶ Black rice of Manipur (Chak-Hao), Gorakhpur Terracotta (Uttar Pradesh), Kadalai Mittai of Kovilpatti (Tamil Nadu) and Kashmir Saffron received Geographical Indication tag.
 1. *Black rice's* colour is mainly due to anthocyanin agent, suitable for creating dessert, porridge.
 2. *Kovilpatti Kadalai Mittai* is a pea nut candy made in southern parts of Tamil Nadu.
 3. *Kashmir Saffron* is long, thick and has natural deep red colour. Also, it has high aroma and is processed without adding any chemicals. Kashmir Saffron is the only saffron in the world that is grown at an altitude of 1,600 metres.
6. ▶ Border Roads Organisation (BRO) Resumed work on strategic Atal Tunnel in the Pir Panjal ranges of Himachal Pradesh, which was halted for 10 days due to COVID-19 outbreak.
 1. 8.8 KM Long Atal Tunnel is being constructed since Manali-Sarchu-Leh road remains closed for six months every year due to Rohtang Pass being completely snowbound between November and May.
 2. Tunnel will connect Manali to Lahaul Valley throughout year and will reduce length of Manali-Rohtang Pass Sarchu-Leh road by 46 kilometres.
7. ▶ CSIR Central Road Research Institute (CRRI) developed *Kisan Sabha App*, to connect farmers to supply chain and freight transportation management system.
 1. Amid COVID 19, farmers are looking for help in their harvest reaching market, seed/ fertilizer procurement, etc. A robust supply chain management is urgently required to facilitate the timely delivery of the produce at the best possible prices.
8. ▶ Central Insecticides Board and Registration Committee (CIBRC) recommended that TB drugs such as Streptomycin and Tetracycline should be completely banned on crops.
 1. 9% of Streptomycin sulphate and 1% of tetracycline hydrochloride is used on crops, with Highest in Delhi, Haryana and Punjab.
 2. Currently, CIBRC allows use of Streptocycline drug in eight crops. However, it is now found that it is being used on more crops as pesticides.
9. ▶ Coir Board signed MoU with IIT Madras, to establish a Centre of Excellence (CoE) for the application of Coir exclusively or in combination with other natural fibres.
10. ▶ DRDO's Delhi Based Laser Science & Technology Centre (LASTEC) developed an Ultra Violet (UV) Disinfection Tower for rapid and chemical free disinfection of high infection prone areas, named *UV blaster*.
 1. UV Blaster is useful for high tech surfaces like electronic equipment, computers and other gadgets in laboratories and offices that are not suitable for disinfection with chemical methods.

11. ▶ Directorate General of Civil Aviation (DGCA) launched GARUD (Government Authorisation for Relief Using Drones), to assist state entities to obtain exemptions from central government to operate drones for COVID-19 purposes.
 1. The portal is significant as several state entities are deploying drones to disinfect public places.
12. ▶ Environment Ministry cleared proposal for new Parliament Complex at 922 crores.
 1. According to CPWD, Parliament was constructed 93 years ago and building a new building is of utmost importance.
 2. Central Vista Redevelopment project aims to build a triangular parliament building. It will revamp 3-km long Raj Path from Rashtrapati Bhavan to India Gate.
 3. Central Vista houses Parliament House, Rashtrapati Bhavan, India Gate, North and South Block and National Archives.
 4. Parliament House was designed by Edwin Lutyens and Herbert Baker.
 1. Rashtrapati Bhavan was designed by Edwin Lutyens and secretariat that includes north and south block was designed by Herbert Baker.
13. ▶ First instance of African swine fever has been reported in India, with over 2500 Pigs killed by it in Assam. This does not pose a public health threat, as the disease does not spread to humans.
14. ▶ General News / Events / Conferences (May 1-10, 2020) -
 1. Government will implement a new Agro MSME policy, to focus entrepreneurship in rural, tribal, forest and agricultural areas.
 2. NITI Aayog launched a campaign in association with Piramal Foundation to protect senior citizens during COVID-19, titled *Surakshit Dada-Dadi & Nani-Nani Abhiyan*.
 3. PM Narendra Modi participated in online Summit of Non Aligned Movement (NAM) Contact Group, under theme *United against COVID-19*.
 1. Non-Aligned Movement (NAM) is a forum of 120 developing world states that are not formally aligned with or against any major power bloc. After the United Nations, it is the largest grouping of states worldwide
 4. Ministry for Road Transport & Highways has set a target of constructing roads worth Rs 15 lakh crore in next two years.
 5. Minister for Fisheries, Animal Husbandry and Dairying, Giriraj Singh presented awards to winners of *Startup India-Animal Husbandry Grand Challenge*, felicitating 12 startups with 1.02 Crores.
 6. TRIFED under Ministry of Tribal Affairs and Art Of Living Foundation (AOL) have signed MoU to collaborate in respective programmes of each organisation for promoting Tribal Enterprises.
 7. Ministry of Agriculture will launch farmers' movement to integrate soil nutrient management. It will include soil testing and campaigns addressing the importance of application of fertilizers based on reports of soil testing, covering over 1 lakh villages.
 8. Madhya Pradesh became 1st state to provide mid-day meal ration.
 1. To provide mid-day meal to school children in corona outbreak, 117 crores are transferred to bank account of parents.
 2. Also, under door-to-door mid-day meal scheme, ration has also been provided to over 55 lakh children.
 9. Jharkhand government banned 11 brands of Pan Masala (containing Magnesium Carbonate) for 1 year in state.
 10. Germany classified organization Hezbollah as a terrorist organization.
 11. National Mission for Clean Ganga (NMCG) under Ministry of Jal Shakti and National Institute of Urban Affairs (NIUA) organized an IDEathon on "The future of River Management", to explore how the COVID-19 crisis can shape River Management strategies.
 12. Agriculture Minister Narendra Singh Tomar launched integration of 177 mandis with National Agriculture Market (eNAM), taking number of eNAM mandis across country to 962.
15. ▶ Government began *Vandhe Bharat Mission*, considered as one of biggest evacuation exercises.
 1. It aims to bring over 15000 stranded Indians back to Home.
 2. Evacuees are to compulsorily download Aarogya Setu application and will be kept under quarantine for 14 days.
 3. Vandhe Bharat Mission is to be led by Air India. Earlier in 1990, Air India had conducted similar mission. Around 111711 Indians were air lifted from Gulf after Iraq invaded Kuwait.
16. ▶ Government brought Cauvery Water Management Authority(CWMA) under Jal Shakti Ministry, which was earlier under Ministry of Water Resources, River Development and Ganga Rejuvenation.
17. ▶ Government extended lockdown for another two weeks, from May 4 till May 17, under Disaster Management Act 2005. It has been decided amid rising spread of Coronavirus across country.
 1. As per revised lockdown guidelines, several activities have been earmarked as prohibited / allowed, depending on zone they fall under (Red/Orange/Green).

2. Red Zones are districts which are reporting considerable number of COVID-19 Infections.
 1. Most Activities are not allowed, except delivery of key items and essential services.
3. Orange Zones are districts which reported considerable number of COVID-19 Infections in past. Allowed Activities -
 1. Taxi Services will be allowed to operate in Orange Zone with condition of only 1 drive and 1 passenger per car.
 2. Inter-district Movement of vehicles and individuals will be allowed, for permitted activities only.
 3. 4-wheelers can have 2 passengers, while 2-wheelers may carry 1 passenger per vehicle.
 4. Delivery of non-essential goods by e-commerce companies.
4. Green Zones are districts which have not yet reported any COVID-19 Infections, so far.
 1. All activities will be permitted except for limited activities that have been prohibited across nation, irrespective of the zone.
 2. Buses will be allowed to operate with upto 50 % seating capacity.
5. To fight virus more efficiently, control rooms have been set up in smart cities, designed by private firm Honeywell. It uses artificial intelligence and camera feeds to monitor the city.
6. Liquor shops have been opened in all Zones. Delhi Govt imposed Special Corona Fee of 70%, on Liquor.
7. Also, Telangana Govt Extended Lockdown in the state till May 29.
18. ▶ HRD Minister Ramesh Pokhriyal Nishank announced various amendments in Prime Minister's Research Fellowship Scheme, to boost research in country.
 1. For students (other than IISc/ IITs/NITs/IISERs/IEST/CF IITs), requirement of GATE Score is reduced to 650 from 750 apart from minimum CGPA of 8 or equivalent.
 2. Now there will be two channels of entries - direct / lateral.
 3. In lateral entry, students, who are pursuing PhD in PMRF granting institutions (completed 12 months or 24 months as per certain requirements) can also apply to become fellow under scheme.
 4. NITs, which appear in top 25 institutions as per NIRF Ranking, can also become PMRF Granting institution.
 5. To boost research, a dedicated Division is being created in ministry with name *Research and Innovation Division*.
19. ▶ HRD Minister Ramesh Pokhriyal 'Nishank' launched Central University of Odisha Helpline *Bharosa* and Helpline Number 08046801010, To relieve distress of student community during COVID-19 pandemic. It aims at providing Cognitive Emotional Rehabilitation Services to all University Students of Odisha.
20. ▶ Health & Family Welfare Minister Harsh Vardhan launched *AYUSH Sanjivani* App and two AYUSH based studies related to COVID-19 situation.
 1. *AYUSH Sanjivani* app will help generate data on acceptance and usage of AYUSH advocacies and measures among population and its impact in prevention of COVID 19. It will aim to reach out to a 50 lakh people.
 2. 2 Studies were also launched -
 1. *Clinical research studies on Ayurveda interventions as prophylaxis and as an add-on to standard care to COVID 19.*
 2. *Population based interventional studies on impact of AYUSH based prophylactic interventions.*
21. ▶ Himachal Pradesh Cabinet will start *Mukhya Mantri Shahari Rojgar Guarantee Yojna*. Under it, 120 days assured employment will be provided to people in urban areas. Cabinet also decided to provide assistance of 2,000 to 1 lakh workers registered under Building and Other Construction Workers Board.
22. ▶ Himachal Pradesh Government launched new programme called *Nigah*, which aims at educating family members that are coming from other parts of country.
 1. Under *Nigah* Programme, ASHA, anganwadi and health workers will be deployed to create awareness about maintaining social distancing during home quarantine. Health workers will sensitize members of families that are arriving from other states.
23. ▶ IIT Hyderabad collaborated with Hong Kong based New Frontier Capital Management, to establish a global network for ventures as well as to create a venture ecosystem. Aim is to promote innovation, research and incubation.
24. ▶ Indian Meteorological Department began to include Jammu and Kashmir, Gilgit-Baltistan, Ladakh and Muzaffarabad into its meteorological sub-division of Jammu and Kashmir.
 1. Change came after Pakistan Government decided to hold elections in Gilgit-Baltistan. On April 30, Supreme court of Pakistan allowed to set up a caretaker government in Gilgit-Baltistan region and conduct provincial assembly elections.
25. ▶ India's epic mythological saga of 1980s, 'Ramayan' created the world record of Highest Viewed Entertainment Programme Globally. On 16th April, 2020, it was watched by 7.7 crore viewers globally.

26. ▶ Jammu and Kashmir (J&K) administration signed MoU with Tata Technologies limited to set up 2 Centres for Invention, Innovation, Incubation and Training (CIITs), to promote skill development. Centres will be at Government Polytechnic Colleges at Jammu and Baramulla.
27. ▶ Jharkhand Government launched 3 schemes to increase working hours of MNREGA workers, by generating over 25 crore man days.
 1. Birsa Harit Gram Yojana - Fruit bearing plantations are to be planted on either side of the roads.
 2. Nilamber-Pitamber Jal Samridhi Yojana - Increase ground water by creating 5 lakh crore litres of ground water reserve.
 3. Veer Shahid Poto Ho Khel Vikas Yojana - Playgorunds at panchayat levels to be constructed to promote sports and reserve jobs under sports quota.
28. ▶ MSME Ministry launched CHAMPIONS portal (URL - *Champions.gov.in*), as a Technology driven Control Room-Cum-Management Information System.
 1. CHAMPIONS here is acronym for *Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength*.
 2. It aims to help units upscale themselves by solving their grievances, encouraging, supporting, helping and handholding.
29. ▶ Madhya Pradesh Government launched *FIR Aapke Dwar Yojana*, as first such Initiative in India.
 1. It has been launched in 23 police stations as a pilot project. Under this, a person need not go to the police station to dodge a complaint. The scheme has deployed the head constables to register the complaints from the people.
 2. State also launched a helpline, "Dial 112". This will provide in instant ambulance services, fire fighting services and also will enable to contact the police within a short period of time.
30. ▶ Maharashtra Govt announced that all citizens will be covered under state government's health scheme Mahatma Jyotiba Phule Jan Arogya Yojana (MJPJAY), making Maharashtra first state to provide free and cashless insurance protection to people.
31. ▶ Minister for Rural Development and Panchayati Raj and Agriculture and Farmers' Welfare, Narendra Singh Tomar launched *The Saras Collection*, on Government e Marketplace (GeM).
 1. As a unique initiative of GeM and Deen Dayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM), Saras Collection showcases daily utility products made by rural self-help groups (SHGs) and aims to provide SHGs in rural areas with market access to Government buyers.
 2. Under this, SHG sellers will be able to list their products in 5 product categories, namely (i) handicrafts, (ii) handloom and textiles, (iii) office accessories, (iv) grocery and pantry, and (v) personal care and hygiene.
32. ▶ Ministry of Agriculture and Farmers Welfare added 200 new mandis from 7 States to e-NAM platform, bringing total e-NAM mandis in country to 785.
 1. It is for first time that Karnataka State has been added to e-NAM. e-NAM is now also integrated with Unified Market Platform (UMP) of Karnataka's Rashtriya e-Market Services (ReMS).
 2. This is for the first time in India that two different e-trading platforms for Agri commodities of this scale will be made interoperable.
 3. e-NAM has over 1.66 Crore Farmers & 1.28 lakh traders registered.
 4. Ministry recently launched 2 major modules in e-NAM, to deal with COVID-19. These modules are -
 1. Warehouse based trading module in e-NAM software to facilitate trade from warehouses based on e-NWR (Negotiable Warehouse Receipt).
 2. FPO trading module in e-NAM whereby FPOs can trade their produce from their collection center without bringing produce to APMC (Agricultural produce market committee).
33. ▶ Ministry of Defence signed contract for Modernisation of Air Field Infrastructure (MAFI) of 37 airfields for Indian Air Force (IAF), Indian Navy (IN) and Indian Coast Guard (ICG) with Tata Power SED (TPSED) at a cost of nearly Rs 1,200 crores.
 1. MAFI Phase-II is a follow-on programme based on MAFI Phase-I that included upgradation of 30 airfields of IAF.
34. ▶ Ministry of Development of North Eastern Region directed Arunachal Pradesh Government to include members of Hajong and Chakma communities in COVID-19 relief programme.
 1. These communities are migrants from East Pakistan (now Bangladesh), and are still living in relief camps. They came to India in 1964.
 2. Chakmas were predominantly Buddhists and Hajongs were Hindus. They inhabited Chittagong hills in East Pakistan, and migrated to India due to construction of Kaptai dam across Karnaphuli river in 1960s.
 3. Currently, they do not have citizenship or land rights.
35. ▶ Ministry of Information and Broadcasting issued draft guidelines for satellite TV channels -

1. Ministry listed 11 violation under the guidelines, violation of any of which would cause penalty or prohibition of broadcast for up to 10 days.
2. No need for Channels to get clearance ever year. Also, Permits will be provided to Indian teleports for up linking foreign channels to increase their business.
3. Channels registered under 'news' category are allowed to make live telecasts. Rest channels have to get permission, to telecast live events.
4. Non-news channels can live telecast an event (other than in news / current affairs) after registering itself online on *Broadcast Seva* portal, at least five days before event.
5. Since 1997, giving preference to Indian satellite was always an integral part of Govt policies. However, this time, guidelines say that only criteria to use a satellite channel is that it should be uplinked on C band or Ku band.
 1. Ku band uses frequencies between 12 GHz and 19 GHz. The C band uses radio frequency between 4 GHz and 8 GHz.
6. Ministry rejected recommendation of Telecom Regulatory Authority of India, which regulates TV broadcasting as well, for a 50% increase in uplinking and downlinking fee.
36. ▶ Ministry of Micro, Small and Medium Enterprises (MSME) done away with role of District Level Task Force Committee (DLTFC), headed by Distt. Collectors, in recommending proposals under Prime Minister Employment Generation Program (PMEGP), thereby simplifying entire procedure.
 1. As per amended guidelines, Khadi and Village Industries Commission (KVIC), nodal agency for implementing PMEGP scheme, will directly clear proposals of prospective entrepreneurs and will forward it to Banks for taking credit decisions.
 2. As of now, proposals were scrutinized by DLTFC, that often led to inordinate delays in sanctioning of projects.
 3. Under PMEGP, loans up to 25 lakhs are given for manufacturing and service industries, in which 15 to 35% subsidy is provided by KVIC.
 4. Since its launch in 2008, PMEGP scheme has been receiving over 35000 applications per year.
37. ▶ National Board for Wildlife (NBWL) permitted use of 98 hectares of land at Saleki, a part of Dehing Patkai Elephant Reserve in Assam for opencast coal mining project done by Coal India Limited's North-Easter Coal Field (NECF). Rest of area may be used for underground coal mining.
38. ▶ National Green Tribunal (NGT) Order related to recent Styrene Gas leakage from LG Polymers Plant in Vishakhapatnam -
 1. NGT stated that LG Polymers was liable according to the Principle of *Strict Liability*, related to a 19th century British era law.
 2. According to *Strict Liability*, a company or a party is not liable and does not require to pay compensation in case hazardous substance leaks out from its premises. The leakage is considered accident. Strict liability evolved in 1868 and provides exemptions from assuming liability.
 3. Legal experts claim that term "absolute liability" should have been used in NGT Order, and not strict liability.
 4. NGT has ruled to deposit an initial amount of Rs 50 crores. However, usage of term *strict liability* itself exempts LG Polymers from paying the compensation.
 5. In 1986, Supreme Court while ruling Oluem Gas leak held that strict liability was inadequate to protect the citizens. Hence, it replaced with *absolute liability*. According to this, supreme court held that a company operating a hazardous industry cannot claim any exemption.
39. ▶ On May 09, 2020; Flagship social security scheme *Atal Pension Yojana* completed five years of implementation.
 1. It promises Pension ranging 1000 - 5000 upon attaining age of 60 years. So far, APY has 2.23 crore subscribers.
 2. Pension Fund Regulatory and Development Authority (PFRDA) has proposed hike in Maximum pension under APY to 10000, which might boost its popularity further.
40. ▶ Raksha Mantri Rajnath Singh inaugurated road link from Dharchula (Uttarakhand) to Lipulekh (China Border), as a long time demand of Kailash Mansarovar Pilgrims.
 1. It will enable yatra to be completed in one week, compared to 2-3 weeks it took earlier, through Sikkim or Nepal routes.
 2. This 80 KM road originates from Ghatiabagarh and terminates at Lipulekh Pass, gateway to Kailash-Mansarovar.
 3. Earlier, Yatra entailed approximately 20 % land journeys on Indian roads and 80 % land journeys in China. With opening of Ghatiabgarh-Lipulekh road, this ratio has been reversed (84 % land journeys on Indian Roads and only 16 % land Journeys in China).
41. ▶ Registrar General of India released data on national birth rate, death rate and infant mortality rate for 2018.
 1. National birth rate stood at 20, death rate at 6.2 and infant mortality rate at 32.
 2. Madhya Pradesh worst performer with highest IMR, with Nagaland as best performer.

3. Andaman and Nicobar Islands had least birth rates, while Bihar had highest.
4. Delhi had lowest death rates and Chhattisgarh had highest.
5. Infant Mortality Rate has declined about one-fourth as compared to 1971 census.
6. Definitions -

1. Birth Rate - total number of live births per 1,000 population.
2. Death Rate - total number of deaths per 1,000 population.
3. IMR - Number of deaths per 1,000 live births of children under one year of age.

42. ▶ Styrene Gas leaked from LG Polymers Plant in Vishakhapatnam, claiming several lives.
 1. Styrene is a chemical compound identified as neuro-toxins. It is also known as Vinyl Benzene, Ethyl Benzene and Phenyl Benzene.
 2. Styrene gas affects respiratory system. It causes chest congestion, gasping, air hunger and wheezing.
43. ▶ Tamil Nadu government increased retirement age of its employees from 58 years to 59 years.
44. ▶ Task Force on National Infrastructure Pipeline in its recently submitted report, has recommended setting up National Land Management Corporation. It will help monetize state-owned surplus lands in a systematic way. It will also manage lands that owned by Government of India.
45. ▶ Tripura CM Biplab Kumar Deb launched an online portal under *Mukhyamantri Yuba Yogayog Yojana*. Under it, government will provide 5,000 to over 14000 youths who are in final year in colleges or Universities as a grant for Smart Phones.
46. ▶ Tripura government launched an *Agro-Entrepreneur Facilitation Desk* to help entrepreneurs to get subsidies and incentives from government agencies such as National Horticulture Board or NABARD.
47. ▶ Uttar Pradesh Government passed *Temporary Exemption from Certain Labour Laws Ordinance 2020*, to suspend labour laws in state for 3 years, to boost industrial investment and help migrants who have returned back to state amid COVID-19 Pandemic.
 1. It will allow industries to freely employ large number of migrant workers.
 2. Ordinance does not include Building and other Construction Workers Act, Bonded Labour Act, Workmen Compensation Act and Section 5 of Payment Wages Act.
 3. Ordinance will suspend laws that related to occupational safety, industrial disputes, contract workers, trade union related laws and laws related to migrant labourers.
 4. UP Government has sent the ordinance for approval of central government.
 5. Uttar Pradesh Govt also launched *Pravasi Rahat Mitra* app for migrant workers of state who have been returning from other states amid lockdown. Also, Madhya Pradesh Government had exempted manufacturing units from Factories Act, 1948.
 6. Maharashtra Govt also exempted industries registered under *Factories Act 1948*, from four sections related to working hours of staff, till June 30. With exemption from Sections 51, 52, 54 and 56, employers can allow labourers to work in two shifts of 12 hours each.

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Persons

1. ▶ Indian-origin girl Vaneesa Rupani has been honoured by NASA for naming its 1st Mars helicopter 'Ingenuity'.
 1. She submitted her essay in "Name the Rover" contest held by NASA, suggesting name 'INGENUITY' for the helicopter.
 2. NASA's Mars Rover Perseverance and Helicopter Ingenuity are scheduled to launch in July 2020 and land in February 2021 at Mars.

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Science

1. ▶ IIT BHU Researchers made significant achievements in developing nanomaterials based supercapacitors to achieve high energy density and power density of supercapacitors.
 1. High energy density of supercapacitors suggests that constant current can be withdrawn for longer duration without recharging. Hence automobiles can run longer distances without charging.
 2. Researchers developed a cost-effective process of producing reduced graphene oxide (rGO) at a moderate temperature of 100°C, with high capacitance performance.
 3. Researchers also developed a novel green approach for synthesis of Iron-based nanocatalyst, which can be used for large scale production of Carbon Nanotubes.

4. Additionally, Group is working on optoelectronic applications of nanomaterials, for developing novel nanostructures of carbon and metal dichalcogenides semiconductors for photodetection and Surface-Enhanced Raman spectroscopy (SERS).
 5. SERS can help detect harmful molecules present in water at ultra-low concentrations. They demonstrated detection of Rhodamine 6G (R6G), an organic laser dye up to lowest limit of sub-nano-molar concentration using rGO and MoS₂ nanomaterials.
2. ▶ Scientists at Agharkar Research Institute Pune come up with plant data of the Northern Western Ghats, which indicates that plateaus, in addition to forests, should be prioritized for conservation of Northern Western Ghats.
 1. They found that majority of endemic species are therophytes, which complete their life cycle in a short period during monsoon.
 2. Northern Western Ghats have plateaus and cliffs that display maximum endemic species, unlike forests. Forests of Northern Western Ghats harbour many species which are not endemic.
 3. ▶ Scientists from Wadia Institute of Himalayan Geology Dehradun found a seasonal advancement in 220 surge-type glaciers in the Karakoram Range of Ladakh. 'Surging' glaciers are those that have shown advancement in volume and length over time.
 1. Behaviour of these glaciers, which are 40% of glaciated area of Karakoram, goes against normal trend of considerable reduction in volume and length of most glaciers in the Himalaya in recent decades.
 2. Surging of glaciers is potentially catastrophic as it can lead to destruction of villages, roads and bridges. It can also advance across a river valley and form ice-dammed lake.
 3. Scientists focused on Shispare and Muchuhar glaciers, former tributaries of once larger Hasanabad Glacier situated in Hunza Valley, Gilgit-Baltistan, Pakistan.
 4. Surge-type glaciers oscillate between brief (months to years) rapid flow and lengthy (tens to hundreds of years) slow flow or stagnation, which are called 'active' (or 'surge') and 'quiescent' phases, respectively.
 5. The study will help to understand diversity of glacial behaviour and help make accurate assessments of individual glacier mass balances for disaster planning and management.
 4. ▶ Scientists from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) fabricated an economical and energy-efficient wafer-scale photodetector (thin slice-based) using gold – silicon interface, for security applications.
 1. It could help detect weak scattered light as an indication of unwanted activity.
 2. Photodetectors are utmost important in any optoelectronic circuit, used in wide variety of applications. However, material cost and intricate fabrication processes involved in realizing high-performance detectors make them unaffordable for day to day applications.
 3. The current invention provides a cost-effective solution-based fabrication method for high-performance photodetector.
 4. Detector exhibits a rapid response of 40 microseconds and can detect low light intensities. It operates in self-powered mode, with high precision.
 5. ▶ An analysis of 369 solar-like stars shows that brightness variations of our Sun are extremely weak by cosmic standards, making Sun extraordinarily monotonous. Study is led by Germany's Max Planck Institute for Solar System Research.
 1. For the first time, scientists compared Sun with hundreds of other stars with similar rotation periods and other fundamental properties. Study found that on average, other stars had five times more brightness variability than our sun.
 2. Sun is made up mainly of hydrogen and helium, formed more than 4.5 billion years ago. It stretches about 1.4 million kilometers across and has a surface temperature of 5,500 degrees Celsius.
 3. Records included about 400 years of observational data on sunspots, showing that sun has not been much more active than it is now. The discovery that sun does not experience as many changes as other stars, may be good news for life on Earth.
 6. ▶ Astronomers discovered that closest known brown dwarf, Luhman 16A (6.5 light years away), shows signs of cloud bands similar to those seen on Jupiter and Saturn.
 1. This is the first time scientists have used the technique of polarimetry to determine the properties of atmospheric clouds outside of the solar system or exoclouds.
 2. Brown dwarfs are objects heavier than planets but lighter than stars and typically have 13 to 80 times the mass of Jupiter.
 3. Luhman 16A is part of a binary system containing a second brown dwarf, Luhman 16B. Both brown dwarfs weigh about 30 times as much as Jupiter.
 4. Researchers used an instrument on Very Large Telescope in Chile to study polarised light from the Luhman 16 system.
 5. NASA's upcoming *James Webb Space Telescope* will study systems like Luhman 16 to look for signs of brightness variations in infrared light that are indicative of cloud features.

6. NASA's Wide-Field Infrared Survey Telescope (WFIRST) will be equipped with a coronagraph instrument that can conduct polarimetry and may be able to detect giant exoplanets in reflected light and eventual signs of clouds in their atmospheres.
7. ▶ NASA selected Space Firms SpaceX, Blue Origin, and Dynetics, to build new lunar landing systems that will carry astronauts to moon by 2024. 3 companies will share amount of \$967 million from NASA.
8. ▶ Russia will launch its first *Arktika-M* satellite to monitor Arctic climate and environment, later in 2020. 2nd Arktika-M satellite will be launched in 2023.
 1. Arktika-M is a remote-sensing and emergency communications satellite. It will help collect meteorological data from polar regions of Earth. Data will help improve weather forecasts and enable scientists to better study climate change.
9. ▶ Study at US' Lawrence Berkeley National Laboratory suggested new paths to catch signals of dark matter particles whose energy is absorbed by the nuclei.
 1. Several experiments have been searching for dark matter particles by knocking into atomic nuclei, known as scattering. It produces tiny flashlights and other forms of signals in these interactions.
 2. Still, Dark matter has been able to defy every form of detector that has been designed to find it. It has been clearly known that dark matter makes up 85 % of total mass of the universe, but what it is made of, is still unknown.
 3. The absorption process can give an affected atom a kick which will cause it to eject a lighter and an energized particle such as an electron. The study mainly focuses on those cases where a neutrino or an electron has been ejected as the dark particle strikes an atom's nucleus.
 4. Study proposes that some existing experiments can be broadened to also look for these absorption-related types of telltale dark matter signals. Weakly Interacting Massive Particle (WIMP), are among well-motivated candidates to look for Dark Matter.
 5. Researchers are considering other places where dark matter particles might be hiding. For example, sterile neutrinos. It can also be bought in the family of particles known as fermions, which includes protons, neutrinos, and electrons.
10. ▶ US Scientists discovered a carnivorous (meat eating) swimming dinosaur named "Spinosaurus aegyptiacus", at Kem Kem region of Moroccan Sahara in North Africa. Lived about 95 million years ago (Cretaceous period), spinosaurus was even longer than an adult Tyrannosaurus rex (T-rex).

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Sports

1. ▶ New Zealand Cricketer Ross Taylor won Sir Richard Hadlee Medal for his 3rd time, given to player of the year in New Zealand. Ross became first player from any nation to play 100 international matches in all three formats. Other Winners -
 1. ANZ International Women's ODI Player of the Year - Suzie Bates
 2. ANZ International Men's ODI Player of the Year - Kane Williamson
 3. ANZ International Women's T20 Player of the Year - Sophie Devine
 4. ANZ International Men's T20 Player of the Year - Ross Taylor

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