

Current Affairs - May 2020

Month Type



- 148 Current Affairs were found in Period - **May 21 - 31, 2020** for Type - **All**

Appointments

1. ▶ **Govinda Rajulu Chintala** has been appointed as chairman of National Bank for Agriculture and Rural Development (NABARD).
2. ▶ Assam-based entrepreneur **Jahnabi Phookan** has been appointed as National President of FICCI Ladies Organization (FLO), women wing of FICCI.
3. ▶ BRICS Nations' Bank New Development Bank (NDB) elected Marcos Troyjo from Brazil as its new president, as term of India's KV Kamath as NDB President has ended. Anil Kishora from India will be new vice-president.
4. ▶ Banks Board Bureau appointed **SN Rajeswari** as Chairman and MD of **Oriental Insurance Company (OIC)**.
5. ▶ Banks Board Bureau (BBB) recommended names of Ashwini Bhatia, M V Rao and P P Sengupta for post of managing director of State Bank of India, Central Bank of India and Indian Overseas Bank, respectively.
6. ▶ British Telecom Major **Vodafone** appointed Jean-Francois Van Boxmeer (CEO of brewer Heineken), to succeed Gerard Kleisterlee as chairman from November 2020.
7. ▶ Former SC judge A K Sikri inaugurated Indian Dispute Resolution Centre (IDRC) in New Delhi, which aims at providing a completely paperless dispute resolution environment. The centre offers offline also as e-alternate dispute resolution (ADR) facility through its state-of-the-art e-arbitration, e-mediation and e-conciliation software portal.
8. ▶ Govt. appointed **Arun Singhal** as Chief Executive Officer of Food Safety and Standards Authority of India (FSSAI).
9. ▶ Health and Family Welfare Minister **Harsh Vardhan** appointed as chairman of 34-Member World Health Organization (WHO) Executive Board. He replaced Hiroki Nakatani of Japan. WHO is governed by two decision-making bodies, World Health Assembly and Executive Board.
10. ▶ Indian IT Major **Wipro** appointed Thierry Delaporte as a new Chief Executive Officer (CEO) and Managing Director (MD), replacing Abidali Z Neemuchwala.
 1. Also, Aiman Ezzat has become new Chief Executive Officer (CEO) of French technology major Capgemini Group.
11. ▶ Indian Steel Association (ISA) appointed Dilip Oommen as its new President. He is presently CEO of Arcelor Mittal Nippon Steel India.
12. ▶ Indian economist Abhas Jha has been appointed by World Bank as Practice Manager for Climate Change and Disaster Risk Management for South Asia.
13. ▶ Ministry of finance appointed **PR Jaishankar** as managing director of India Infrastructure Finance Company Ltd (IIFCL).
14. ▶ Misc. Appointments (May 2020) -
 1. Former Axis Bank CEO Shikha Sharma has been named advisor to Google Pay India.
 2. Yes Bank appointed Neeraj Dhawan as its Chief Risk Officer (CRO), while RBL Bank appoints Deepak Kumar to the same post.
 3. Raj Shukla assumed command of Indian Army's Army Training Command (ARTRAC).
 4. Krishnan Ramachandran has been appointed as MD and CEO of Max Bupa Health Insurance.
 5. Govt appointed Sanjay Kumar Jha as CMD of PSU Mishra Dhatu Nigam Ltd (MIDHANI). Also, Pradip Kumar Das is named CMD of Indian Renewable Energy Development Agency (IREDA).
 6. United Nations Environment Programme extended term of Indian actress Dia Mirza as Goodwill ambassador for India till 2022.

7. Nilaya Mitash has been appointed as principal operations coordination specialist at Philippines Based Asian Development Bank (ADB).
8. Former Sri Lanka Cricketer Kumar Sangakkara has been re-appointed as president of Marylebone Cricket Club (MCC) in England, for his second term.
9. Narinder Batra's term as President of International Hockey Federation has been extended until May 2021.
10. Former CWG gold-winning boxer Akhil Kumar has been re-inducted into National Anti-Doping Agency's Disciplinary Panel.
11. Delhi HC Judge Sangita Dhingra Sehgal will be appointed as President of Delhi State Consumer Redressal Commission (DSCRC).
12. Rajesh Goel has been appointed director-general of the Realtors body National Real Estate Development Council (NAREDCO).
13. Chinese Video Sharing App Tiktok named Disney Executive Kevin Mayer as New CEO.
14. Government appointed Prem K Nair as Indian Ambassador to Republic of Niger (West Africa).
15. Government appointed P Kumaran Indian Ambassador to Singapore.
16. Ministry of Youth Affairs and Sports extended tenure of Sandip Pradhan as Director General of Sports Authority of India (SAI) by 2 years.
17. Venkataramani Sumantran has been appointed as independent director of airline company IndiGo.
18. Indian Olympic Association (IOA) president Narinder Batra has been designated as a member of Olympic Channel Commission. Batra Also likewise heads International Hockey Federation (FIH).
19. Leo Puri has been appointed Chairman of JP Morgan South Asia and South East Asia.
20. R Sreelekha is appointed as first woman Director General (DGP) of Kerala police.
21. Ravinder Singh Dhillon is appointed as Chairman & MD of PSU PFC (Power Finance Corporation).
22. Andhra Pradesh HC directed state government to reinstate State Election Commissioner Nimmagadda Ramesh Kumar, who was dismissed recently.
23. Vishwas Mehta is appointed as chief secretary of Kerala.
24. Taiwan's President Tsai Ing-wen won her second term as President.
25. Food ordering platform Zomato elevated Mohit Gupta (CEO of its food delivery business) as a co-founder. Deepinder Goyal is other cofounder and CEO of Zomato.
26. Manoj Pande appointed as Commander-in-Chief of Andaman & Nicobar Command of Indian Army.
15. ▶ Moeketsi Majoro has been appointed as Prime Minister of **Lesotho** (Southern Africa), after Tom Thabane resigned from the post.
16. ▶ Pulitzer winning Indian-American physician, Siddhartha Mukherjee has been appointed as member of New York's commission that will focus on jumpstarting state's economy, which is badly hit by coronavirus pandemic. Another Indian-origin higher education leader, Satish Tripathi has also been named as member of commission.
17. ▶ World Bank Group appointed **Carmen Reinhart** (US) as its new Vice President and Chief Economist.

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Awards

1. ▶ **Vinay Badhwar**, India's National Hydrographer has been honoured with 2019 Alexander Dalrymple Award by UK Hydrographic Office (UKHO), for his contribution to Indian hydrography.
2. ▶ Indian Army's Major **Suman Gawani** will be awarded UN Military Gender Advocate of 2019, as first time an Indian peacekeeper will be honored by this award.
 1. Major Suman was stationed in South Sudan under the United Nations Mission. Recently she has completed her mission.
 2. UN Military Gender Advocate Award began In 2016.
3. ▶ Indian-American IBM Inventor **Rajiv Joshi** won NYIPLA "Inventor of the Year award" for 2020, for his contribution to advancing the electronic industry and improving artificial intelligence (AI) capabilities. This award is presented by the New York Intellectual Property Law Association (NYIPLA), carrying \$5,000.
4. ▶ Industrial Awards (May 2020) -
 1. Travel services company Thomas Cook (India) won silver award for Asia's Best Integrated Report (First Time) at the 5th Asia Sustainability Reporting Awards (ASRA).
 2. Bengaluru-based doctor Hema Divakar honoured with the 'Global Asian of the Year 2018-19' award in Dubai, for her contribution to women's healthcare ecosystem.

3. Indian IT Major TCS won 2 Stevie Awards in 2020 American Business Awards, for 2019 TCS New York City Marathon app.
5. ▶ South African HIV researcher **Quarraisha Abdool Karim**, who found that a topical gel could stop many women catching the virus has been awarded **Christophe Merieux Prize**. It is one of France's top science prizes, carrying \$551,000.

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Books

1. ▶ Noted British author and Harry Potter Series Creator **J.K. Rowling** released first two chapters of her new Children's book "The Ickabog".
2. ▶ Noted Indian Author **Ruskin Bond**'s new book *Hop On: My Adventures on Boats, Trains and Planes*, has been released.

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Committees

1. ▶ IRDAI Panel headed by New India Assurance (NIA) CMD Atul Sahai has recommended -
 1. Increase in indemnity (protection against finances) being provided to policyholders under Trade Credit Insurance (TCI) from existing 85% of trade receivables from each buyer to 90%. For Micro and small enterprises (MSEs), 95% indemnity is proposed to provide relief in event of loss which is beyond their control.
 2. Recommendations are aimed at improving overall business environment by protecting suppliers as well as lenders against payment defaults. Other recommendations Include -
 1. Permitting issue of TCI policy to banks, financiers, lenders for trade-related transactions, except for covering loan default of seller.
 2. Modifications in certain definitions for improved clarity and understanding.
 3. Creation of a Buyer Default Database with Insurance Information Bureau (IIB) as a measure to keep a check on defaulters.
 4. RBI to recognise credit insurance products as risk mitigation tools for banks to make them eligible for capital relief.
 3. TCI was Introduced in 2016, as an effective risk management tool for suppliers of goods and services and other financial institutions, to facilitate and promote trade by addressing issues concerning losses arising from payment related defaults.
2. ▶ Ministry of Health and Family Welfare (MoHFW) has constituted a committee to reform Drug Regulatory System, headed by **Rajesh Bhushan** (Officer on Special Duty to health minister).

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Days

1. ▶ 29 May - International Day of **UN Peacekeepers**, with 2020 theme is *Women in Peacekeeping: A key to Peace*.
 1. May 29 is also observed as World Digestive Health Day.
2. ▶ May 21, 2020 is observed as First ever **UN International Tea Day**.
 1. On this occasion, IHBT Palampur stated that Tea chemicals could be effective in boosting immunity as they can block coronavirus activity better than anti-HIV drugs.
 2. May 21 is also observed as World Day for **Cultural Diversity for Dialogue and Development**, proclaimed by UNESCO in 2002.
3. ▶ May 21, death anniversary of former Prime Minister **Rajiv Gandhi** is observed as Anti-Terrorism Day in India.
 1. On this occasion, Chhattisgarh Government launched Rajiv Gandhi Kisan Nyay Yojana. It will infuse Rs 5,100 crores into the rural economy of the state. Farmers are to be paid Rs 10,000 per acre, for sowing 14 types of crops (1 rabi and 13 kharif).
 2. As First Tranche, State Government transferred 1,500 crores into accounts of more than 18,000 farmers
4. ▶ May 22 - **International Day for Biological Diversity** (IDB), first observed by United Nations General Assembly (UNGA) in 1993. 2020 Theme is **Our Solutions are in nature**. On the occasion, Ministry of Environment, Forest and Climate Change launched 5 initiatives on conservation of biodiversity -
 1. Biodiversity Samrakshan Internship Programme
 2. United Nations Environment Programme (UNEP) campaign called *Illegal Trafficking of Endangered Species*.
 3. Wildlife Crime Control Bureau campaign called *Not All Animals Migrate by Choice*.
 4. A Webinar series on "Biodiversity Conservation and Biological Diversity Act, 2002".
 5. World Wildlife Fund Model Conference of Parties.

5. ▶ May 23 is observed as *International Day to End Obstetric Fistula*.

6. ▶ May 23 is observed as World Turtle Day, observed since 2000.

7. ▶ May 24 - **Commonwealth Day** in India. It is globally observed on Second Monday of March. However, in some nations including India, it is observed on May 24.

1. May 24 is Birth Anniversary of Queen Victoria (1819), who was Queen of United Kingdom of Great Britain and Ireland from 20 June 1837 until her death. On 1 May 1876, she adopted additional title of Empress of India.

8. ▶ May 25 is observed as World Thyroid Day, observed since 2008. May 25 is also International Missing Children's Day.

9. ▶ May 27 is Death Anniversary of Jawaharlal Nehru, first Prime Minister of India.

10. ▶ May 28 is Birth Anniversary of Legendary freedom Fighter Swatantryaveer Vinayak Damodar Savarkar, also called Veer Savarkar. May 28 is also observed as International Day of Action for Women's Health.

11. ▶ May 28 is observed as World Hunger Day, an initiative of the Hunger Project.

1. May 28 is also observed as Menstrual Hygiene Day.

12. ▶ May 29 is observed as International **Everest Day**. On this day in 1953, Nepalese Tenzing Norgay and New Zealand's Edmund Hillary climbed Mt. Everest, as first humans to achieve this feat.

13. ▶ May 30 is statehood day for Goa. On this day in 1987, Goa became 25th state of India. It was a Union Territory along with Daman and Diu from December 1961 onwards when Goa was liberated from Portuguese rule.

14. ▶ May 31 is Observed as **No Tobacco Day**, established by World Health Organization (WHO). 2020 Theme is *Protecting Youth*.

1. On this occasion, WHO accorded World No Tobacco Day Award 2020 to Socio-Economic and Educational Development Society(SEEDS), an Indian non-governmental organization(NGO), one among 3 SouthEast Asian Region awardees, for its efforts to ban pan masala, gutkha, e-cigarettes and hookah in Bihar and Jharkhand.

2. WNTD is one of eight official global public health campaigns marked by WHO, Others are -

1. World Health Day - Apr 7

2. World Blood Donor Day - June 14

3. World Immunization Week - Last week of April

4. World Tuberculosis Day - Mar 24

5. World Malaria Day - Apr 25

6. World Hepatitis Day - July 28

7. World AIDS Day - Dec 1

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Defence

1. ▶ Directorate General Defence Estates (DGDE), Ministry of Defence and eGov Foundation signed MoU for Online Management of Cantonment Boards. Services will be delivered under a cloud-based platform DIGIT (Digital Infrastructure for Governance, Impact & Transformation), under program named e-Chhawani.

2. ▶ Foundation Stone for Missile Park **AGNEEPRASTHA** laid at INS Kalinga, to capture glimpses of Missile History of INS Kalinga since its inception in 1981.

1. A 2 MW Solar Photovoltaic Plant was also commissioned at INS Kalinga. Govt aims to achieve 100 GW of solar power by 2022.

3. ▶ Indian Air Force (IAF) inducted Tejas Mk-1 FOC aircraft into recently resurrected No 18 Sqn, the "Flying Bullets" at Air Force Station Sulur. The Squadron is the first in the IAF to induct this platform.

1. Tejas Mk-1 FOC is a single engine, light weight, highly agile, all weather multi role fighter aircraft capable of air-to-air refueling.

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Economy

1. ▶ **iTurmeric FinCloud** microservices-based platform has been launched by Intellect Design Arena Ltd, launched through IBM public cloud.

1. This platform will enable new digital banks' systems to be tested and run in isolation or in parallel with core legacy systems.

2. ▶ **Bharti Airtel** acquired 10% stake in Voicezen, a Gurgaon based startup focused on conversational AI technologies.

3. ▶ Airtel Payments Bank (APBL) partnered with Payments Firm Mastercard, to develop customized products catering to customers across the underbanked spectrum including farmers, small and medium enterprises and retail customers.
4. ▶ As a relief measure amid COVID-19 Pandemic, RBI Monetary Policy Committee (MPC) announced changes in Policy Rates. New Rates are -
 1. Repo Rate - 4.00 % (-.40 %)
 2. Reverse Repo - 3.35 % (-.40 %)
 3. Bank Rate - 4.25 % (-.40 %)
 4. CRR (Cash Reserve Ratio) - 3 %
 5. SLR(Statutory Liquidity ratio) - 18.00 %
 6. Marginal Standing Facility (MSF) Rate - 4.25 % (-.40 %)
7. Other Measures -
 1. RBI Extended Moratorium on Term Loans by 3 Months, to enable borrowers to avail 3 months deferment on payment of Loan EMIs. It is applicable between repayments due between June 1 - Aug 31, 2020.
 2. In order to enable increased supply of affordable credit to small industries, RBI had announced a special refinance facility of 15000 crore to for 90 days. This facility has now been extended by another 90 days.
 3. Relaxation of Rules for Foreign Portfolio Investment under Voluntary Retention Route. Rules stipulate that at least 75% of allotted investment limit be invested within 3 months. This has now been revised to six months.
 4. RBI announced a line of credit of 15,000 crore to the EXIM Bank, for financing, facilitating and promoting foreign trade.
 5. Maximum credit which banks can extend to a particular corporate group has been increased from 25% to 30% of the bank's eligible capital base.
5. ▶ As per Govt Data, total Foreign Direct Investment (FDI) in India grown by 18% to reach **73 billion** USD in FY 2019-20.
 1. Of this, FDI equity inflows through Foreign Investment Promotion Board (FIPB), RBI's automatic route of through acquisition rose 13 percent to around \$49.98 billion.
6. ▶ Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) reduced annual listing fee by 25% for Small and Medium Enterprises(SMEs) companies, to lower compliance costs for companies during ongoing COVID-19 pandemic.
7. ▶ Capital markets regulator SEBI imposed penalty of Rs 7 lakh on National Highways Authority of India (NHAI) for delay in making timely disclosure about financial results.
8. ▶ Central Board of Direct Taxes exempted Companies engaged in business-to-business (B2B) transactions have been exempted from installing e-payments facilities such as RuPay or UPI.
 1. It is applicable for B2B companies for which min 95% of aggregate of amount received during previous year, are by any mode other than cash.
 2. This came amid representations stating that requirement of mandatory facility for payments through prescribed electronic modes was not applicable to B2B businesses since they don't deal with customers directly. Also, it puts cap on their daily receipts.
9. ▶ Credit Rating Agency CRISIL stated that India's worst recession ever has arrived and economy will shrink by 5 % in current fiscal FY 21 (2020-21).
 1. It will be fourth recession since Independence and first since Liberalisation. India has seen recession only thrice- in fiscals 1958, 1966 and 1980. The reason for the recession in all three of them was the same- a monsoon shock hitting agriculture and then economy.
 2. In real terms there will be a permanent loss of about 10% GDP, which means that going back to the growth rates seen before the pandemic is highly unlikely in the next three fiscals.
10. ▶ Franklin Templeton Trustee Services Pvt. Ltd. appointed Kotak Mahindra Bank as an independent advisor, to assist Trustees in monetizing portfolios of 6 schemes that are being wound up & make payouts to affected investors.
 1. 6 schemes are - *Low Duration Fund, Dynamic Accrual Fund, Credit Risk Fund, Short Term Income Plan, Ultra Short Bond Fund* and *Income Opportunities Fund* of Franklin Templeton Mutual Fund.
11. ▶ Government amended **General Financial Rules 2017** (GFR) to make sure goods and services that are of value less than Rs 200 crores are procured from domestic firms. This was announced under Atma Nirbhar Bharat Abhiyan.
 1. GFR are set of rules that deal with matters that involve public finances, first issued in 1947. GFRs were earlier modified in 1963 and 2005.
 2. GFR were last revised in 2017, to make sure an organization manages its business without compromising its flexibility.

12. ▶ IT Major **Accenture** acquired Ahmedabad-based data analytics company **Byte Prophecy**, to meet growing demand for enterprise-scale AI and digital analytics solutions across the region.
13. ▶ India signed **\$177 Million loan** agreement with **Asian Development Bank** (ADB), to upgrade 450 kilometers of state highways and major district roads in Maharashtra.
14. ▶ Indian GDP Growth Forecasts (May 2020) -
 1. Singapore based DBS bank Projected India's Gross Domestic Product (GDP) growth forecast for FY 21 (2020-21) at 1%.
 2. Moody's has cut down India's Gross Domestic Product(GDP) growth to **0 %** for current fiscal FY 21 (2020-21), down from previous estimate of 2.6%.
 3. Japanese brokerage firm Nomura Holdings Predicted India's FY21 GDP growth forecast at - 5.2%, down from -0.4% earlier.
 4. UN World Economic Situation and Prospects (WESP) mid-2020 report Predicted Indian GDP growth rate for FY 21 (2020-21) to be 1.2%, down from 4.1% in FY 20 (2019-20). Growth of India will raise to 5.5% in FY 22 (2021-22).
 5. American brokerage Goldman Sachs expected Indian economy to contract by 5% in FY21, which means -5% GDP Growth. It will be the deepest compared to all recessions India has ever experienced since 1979.
 6. India's nominal GDP growth rate in 2020-21 could range between -6% and 1%, according to 15th Finance Commission's committee on the fiscal consolidation roadmap, which met via video conferencing, headed by Commission's Chairman N.K. Singh.
 7. As per SBI Ecwrap report, India's GDP is estimated to grow at 1.2% in last quarter(Q4) of FY20
 1. GDP Growth is likely to be 4.2% for FY20, and - 6.8% for FY21
 2. Gross value added (GVA) growth would be nearly - 3.1%. for FY21
 8. Rating agency Fitch Ratings Predicted India's GDP Growth to be -5% in FY 21 (2020-21) (5 % Contraction).
 9. Rating agency S&P Predicted India's GDP Growth to be -5% in FY 21 (2020-21) (5 % Contraction).
 10. Rating Agency ICRA reduced India's FY21 (Fiscal Year 2020-21) growth forecast to - 5 %.
15. ▶ Indian consumer goods Firm **ITC** acquired spices maker Sunrise Foods Private Limited.
16. ▶ India's nominal GDP growth rate in 2020-21 could range between -6% and 1%, according to 15th Finance Commission's committee on the fiscal consolidation roadmap, which met via video conferencing, headed by Commission's Chairman N.K. Singh.
17. ▶ Insurance Regulatory and Development Authority of India (IRDAI) Allowed **Union Bank of India** to continue with its 30% holding in IndiaFirst Life Insurance.
 1. UBI also holds 25.1% stake in Star Union Dai-Chi Life Insurance.
 2. Condition is that bank lender will not exercise management or any control over insurer's management.
 3. RBI permitted UBI and insurers promoted by it a period of 1 year to hold existing shares of Andhra Bank in IndiaFirst Life Insurance for 1 year, following merger of UBI, Corporation bank & Andhra bank.
 4. As per IRDAI's guidelines, a Bank must not own more than 10% stake in two insurance companies.
18. ▶ LIC launched Modified Pradhan Mantri Vaya Vandana Yojana-PMVVY Scheme for those over 60 years.
 1. Sale will be available from May 26 for 3 financial years(up to March 31, 2023).
 2. As per Cabinet's Recent Approval -
 1. Approval Extension of Pradhan Mantri Vaya Vandana Yojana (PMVVY) by 3 years, up to 31st March 2023.
 1. Assured rate of return of 7.40 % per annum for 2020-21 per annum, to be reset every year.
 2. Annual reset of assured rate of interest with effect from April 1st of financial year in line with revised rate of returns of Senior Citizens Saving Scheme (SCSS), upto 7.75%, with fresh appraisal of scheme on breach of this threshold at any point.
 3. Expenditure to be incurred on account of the difference between the market rate of return generated by LIC and guaranteed rate of return under scheme.
 4. Capping Management expenses at 0.5% p.a. of funds of the scheme for first year of scheme in respect of new policies issued and thereafter 0.3% p.a. for second year onwards for next 9 years.
 5. Delegating authority to Finance Minister to approve annual reset rate of return at the beginning of every financial year.
 6. Minimum investment revised to Rs.1,56,658 for pension of 12000 per annum and 162162 for minimum pension of 1000 per month.
 7. Maximum pension - In monthly mode – Rs 9,250; In quarterly mode-Rs. 27,750; In half-yearly mode- Rs 55,500; In yearly mode- Rs. 1,11,000
 8. Loan- After 3 policy years, the policy allows loan up to 75% of purchase price.

9. Surrender Value– There is a provision of premature(early) exit for treatment of any critical/terminal illness of self or spouse. In this case, the surrender value payable shall be 98% of the purchase price.

19. ▶ Maharatna PSUs **NTPC and ONGC** signed MoU to set up a Joint Venture Company for Renewable Energy business.
 1. NTPC and ONGC will explore setting up of offshore wind and other Renewable Energy Projects in India and overseas. They shall also explore opportunities in the fields of sustainability, storage, E-mobility and ESG (Environmental, Social and Governance) compliant projects.
 2. NTPC has 920 MW of installed Renewable power projects in its portfolio and about 2300 MW of RE projects under construction. It aims for 32 GW Renewable Energy Projects by 2032.
 3. ONGC has renewable portfolio of 176 MW comprising of 153 MW wind power and 23 MW of solar. It aims to add 10 GW of renewable power to its portfolio by 2040.
20. ▶ Minister of Finance and Corporate Affairs Nirmala Sitharaman launched facility for instant allotment of PAN (on near to real time basis), available for those PAN applicants who possess a valid Aadhaar number and have a mobile number registered with Aadhaar. An Electronic PAN (e-PAN) is issued to applicants free of cost. It was announced by in Union Budget 2020.
21. ▶ Ministry of Finance released **9th Status Paper on Government Debt**, for year 2018-19 (Being issued since 2010).
 1. Central Govt. Liabilities were 86.7 Lakh Crores (45.7 % of GDP), while General Govt. Liabilities were 130 Lakh Crores (68.6 % of GDP). Both these metrics saw decrease of .1% of GDP, over last year.
 2. External Debt is 5.1 Lakh Crores (2.7 % of GDP).
 3. 94.1 % of Central Government debt at end-March 2019 was domestic. Sovereign external debt constituted 2.7 % cent of GDP at end-March 2019.
22. ▶ Misc. Corporate News / Events (May 2020) -
 1. Karnataka Vikas Grameen Bank (KVGB) launched loan scheme to provide relief to borrowers whose businesses are disrupted amid Covid-19 pandemic, with name *Vikas Abhaya*. It will be for existing MSME customers, enabling them to avail up to 1 lakh, with no collateral security.
 2. Customer engagement technology provider *Ameyo* launched video KYC engagement platform for banking / finance sector. It aims to eliminate requirement of physical KYC in accordance with latest RBI guidelines issued in January 2020.
 3. Kalpataru Power Transmission Limited(KPTL) completed sale of its entire stake in Kalpataru Satpura Transco Private Limited (KSTPL) to CLP India Private Limited.
 4. Federal Bank tied-up with MoneyGram Payment System to offer a cost-effective direct-to-bank account credit option for customers in India.
 5. National Restaurants Association of India (NRAI) partnered with fintech start-up DotPe to build its own tech platform, enabling online payments for digital ordering, bill settlements, and contactless dining.
 6. Canara Bank started a special business vertical dedicated to gold loans, aimed at meeting financial needs of customers amid COVID-19 pandemic. Bank has launched a gold loan campaign till 30th June 2020 with an interest rate as low as 7.85% per annum.
 7. Kotak Mahindra Bank became 1st bank in India to allow video Know your customer (KYC) facility for customers opening savings accounts, on its 811 banking platform.
 8. e-commerce Firm Flipkart and Bajaj Allianz General Insurance Company tied-up to offer a digital motor insurance policy to Flipkart's customers.
 9. ICICI bank introduced a special fixed deposit (FD) scheme for senior citizens called 'Golden Years FD', which offers an interest rate of 6.55% per annum for deposits up to Rs 2 crores with a tenure of more than 5 - 10 years.
 10. Edelweiss General Insurance launched 'SWITCH', an app-based motor insurance own damage (OD) floater policy under IRDAI's sandbox regulations. This allows owners of vehicles to cover multiple vehicles under a single policy.
 11. Maruti Suzuki Partnered with Cholamandalam Investment and Finance Company Limited, to launch 'Buy Now Pay Later' financing scheme to make purchase of its cars even more convenient amid COVID-19 outbreak. Customers will have option to avail a 60-day surcharge on their EMI.
 12. Government notified cessation of 7.75 percent Savings (Taxable) Bonds 2018, for subscription.
 13. Fintech startup Zaggie partnered with payments technology major *Visa*, to launch innovative payment solutions for small and medium enterprises (SMEs) and startups.
 14. E-Commerce Firm Flipkart signed MoU with Karnataka State Mango Department and Marketing Corporation, to empower mango farmers to sell their produce online.

15. Reliance Industries launched a “WhatsApp chatbot” to address rights issue queries of its 2.6 million shareholders on offering.
23. ▶ Mumbai based Tech Firm Vakrangee Limited signed Corporate Agency partnership with Life Insurance Corporation of India (LIC) to distribute LIC’s micro insurance products in unserved and underserved areas through its Nextgen Vakrangee Kendra network spread across India.
24. ▶ National Company Law Tribunal (NCLT) approved to sell 50% stake in Gujarat International Finance Tec-City Co Ltd (GIFT City) held by crisis hit Infrastructure Leasing and Financial Services (IL&FS) to Gujarat government for 32.70 crores.
 1. IL&FS and the state government through Gujarat Urban Development Co Ltd hold 50:50 stake in GIFT City.
 2. IL&FS signed MOU with Gujarat government to develop an International Financial Services City (IFSC) in 2007.
25. ▶ National Payment Corporation of India launched Artificial Intelligence based chatbot called Pai, to increase financial inclusion in India. It provides information about NPCI products, created by Bengaluru based CoRover Private Limited.
26. ▶ National Statistical Office (NSO), Ministry of Statistics and Programme Implementation released Estimates of National Income for financial year 2019-20, both at Constant (2011-12) and Current Prices -
 1. **Quarterly -**
 1. GDP at Constant (2011-12) Prices in Q4 of 2019-20 is estimated at 38.04 lakh crore, as against 36.90 lakh crore in Q4 of 2018-19, showing a growth of **3.1 %**.
 1. Earlier in 2019-20 -
 1. Q3 - 4.7 %
 2. Q2 - 4.5 %
 3. Q1 - 5.0 %
 2. **Annual -**
 1. Real GDP or Gross Domestic Product (GDP) at Constant (2011-12) Prices in 2019-20 estimated to be 145.66 lakh crore, as against the First Revised Estimate of GDP for the year 2018-19 of 139.81 lakh crore. it shows **4.2 % Growth**, compared to 6.1 % in 2018-19. It is India's lowest Growth in 11 Years.
 2. GDP at Current Prices in 2019-20 is estimated to be 203.40 lakh crores, as against First Revised Estimates of 189.71 lakh crore in 2018-19, showing growth rate of 7.2 %, as compared to 11.0 % in 2018-19.
 3. **Per Capita Income -**
 1. In real terms (at 2011-12 Prices) during 2019-20 is estimated to be 94,954, as compared to 92,085 in 2018-19, resulting in growth of 3.1 % during 2019-20, as against 4.8 % in the previous year.
 2. At current prices during 2019-20 is estimated to be 134226, showing rise of 6.1 %, as compared to 1,26,521 during 2018-19.
 27. ▶ Ola Electric acquired Netherlands-based Etergo BV, an innovative electric scooter company for an undisclosed sum. Ola plans to set its own line of premium electric two-wheelers. Ola electric will launch its global electric two-wheeler in India in 2021.
 28. ▶ RBI Imposed Monetary Penalties on Several Banks -
 1. Bharat Co-operative Bank (Mumbai) - 60 Lakh
 2. Citibank - 4 Crores
 3. TJSB Sahakari Bank - 45 Lakh
 4. Nagar Urban Co-operative Bank - 40 lakh
 5. Saraswat Co-operative Bank - 30 Lakh
 6. Bank of India - 5 Crores
 7. Karnataka Bank - 1.2 Crores
 29. ▶ Railways PSU RITES acquired 24% stake in Indian Railway Stations Development Corporation (IRSDC) for 48 crores. IRSDC is joint venture of Rail Land Development Authority (RLDA) and IRCON International.
 30. ▶ Tata Power's Tata Power International Pte Ltd (TPIPL) acquired 10 % stake in Adjaristsqali Netherlands BV (ABV) from International Finance Corporation (IFC) for USD 150000, increasing TPIPL's shareholding in ABV to 50 %.
 31. ▶ US Firm **KKR** invested Approx 11367 crores in Reliance Jio Platforms, for a 2.32% stake. Recent Jio Stake Buy-outs -
 1. US Investor General Atlantic invested Approx 6600 crores in Reliance Jio Platforms, for a 1.34% stake.
 2. US Based Vista Equity Partners invested 11367 crores into Reliance Jio Platforms for a 2.32 % stake.
 3. US Based Silver Lake partners bought 1.15% stake in Reliance Industries subsidiary Jio Platforms, for Rs 5,656 crores (\$750 million).

4. Social Network Facebook invested INR 43574 crores in Jio Platforms, for 9.99% stake. It was Largest FDI in India's Tech Industry.
5. Under concerned 5 deals, Jio has divested total 17.12 % Stake to 5 US Firms, since April 2020.
32. ▶ Various measures taken by Department of Food & Public Distribution for current sugar season 2019-20 -
 1. Government reimbursing carrying cost of Rs.1674 crore towards maintenance of buffer stock of 40 LMT of sugar.
 2. Assistance @ Rs 10448/MT being provided to sugar mills to meet expenses on export of 60 LMT of sugar, at approx 6268 crores.
 3. Soft loans of about Rs. 18600 crores are being extended through banks to 362 sugar mills and molasses-based standalone distilleries, for which interest subvention of 4045 crores for 5 years is being borne by Government.
 4. Estimated Production during sugar season 2019-20 is 270 LMT, with 240 LMT expected as Domestic Consumption.
33. ▶ Yes Bank acquired 24.19% stake in direct-to-home (DTH) provider **Dish TV** India, by invoking pledged shares after loan defaults by several companies.

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International

1. ▶ **Facebook** acquired Giphy, a popular website for making and sharing animated images. Cost was not disclosed, although expected at around \$400 million.
2. ▶ **Japan** launched its new space defense unit to monitor and counter threats to country's satellites. Called *Space Operations Squadron*, It is part of Japan's Air Self-Defense Force.
 1. It has 20 members initially, expected to grow to about 100 members once fully operational in 2023.
3. ▶ **US** terminated its relationship with World Health Organisation, amid WHO being criticized for its role in COVID-19 Pandemic and its accused favoring of China. US used to pay approx USD 450 million a year to WHO.
4. ▶ Amphibious transport dock ship, USS Portland (LPD-27) of US Navy destroyed an unmanned aerial vehicle (UAV) with a solid-state laser "Laser Weapon System Demonstrator (LWSD)" from Pacific. It was first system-level implementation of a high-energy class solid-state laser to disable an aerial drone aircraft.
5. ▶ As per World Steel Report by World Steel Association -
 1. Crude steel report of India declined by 65%. During April 2020, the steel output of India was 3.13 million tonnes, compared to 9.02 million tonnes in April 2019.
 2. In March 2020, India faced a decline of 14% steel output as compared to March 2019. Global steel output declined by 13%.
6. ▶ Australian Scientists discovered corals with increased heat tolerance which has potential to reduce impacts of coral reef bleaching due to climatic change.
 1. Bolstering heat tolerance of its microalgal symbionts, tiny cells of algae that live inside the coral tissues, the team made the coral more tolerant to temperature induced leaching.
 2. This will strengthen heat resistance of the coral reef by manipulating microalgae, the key factor of the coral's heat tolerance.
7. ▶ Calling application named **CatchUp** has been launched by Facebook, aiming to coordinate call timings with friends and family members, and will enable users to check availability of time with a group of up to eight people.
8. ▶ European Union proposed 750 billion Euros as COVID-19 recovery fund, to recover from deep recession caused by COVID-19.
 1. France and Germany had earlier agreed to provide 543 billion USD fund to add cash to financial measures of the bloc.
 2. The alliance was led by France and Germany and the model is an outcome of the meet of 25 nations held in April 2020.
 3. Model aims to pull in world organizations in fight against COVID-19, aiming to strengthen UN and especially under financed World Health Organization (WHO) to develop and distribute tests and vaccines.
9. ▶ India handed over war game centre named as "INDIA" to **Uganda** Peoples Defence Forces (UPDF), built at approx \$2,65,000.
10. ▶ Indian PSU IRCON signed MoU with Russia's RZD International L.L.C., to explore opportunities for joint development of railways and other infrastructure projects in Asia, Africa and Latin America.
11. ▶ Indian Twch Firm Infosys partnered with core banking software developer Swiss firm Avaloq, to offer end-to-end (e2e) products and services as Software-as-a-Service (SaaS) across the world to its clients.
12. ▶ Leaders of G7 nations have set up Global Partnership on **Artificial Intelligence**, initiated by France and Canada. US had joined the alliance after initial denial. G7 consists France, Canada, Italy, Germany, Japan, UK and US. The group has more than 46% of global GDP.
13. ▶ Russia constructed its first Stealth Bomber Under its Perspective Aviation Complex for Long Range Aviation (PAKDA) programme.

1. Bomber is second-generation combat aircraft after Sukhoi Su-57 supersonic fighter jet.
14. ▶ UNICEF and Airtel Africa partnered to support children & families affected by COVID-19, to provide children with access to remote learning and enable access to cash assistance for their families through mobile cash transfers.
15. ▶ US President Donald Trump signed an executive order to increase government's ability to regulate social media platforms. The order directs a Commerce Department agency to file a petition with Federal Communications Commission (FCC) to clarify scope of Internet law, Section 230.
 1. Section 230 of Communications Decency Act (CDA) of 1996 is a landmark Internet legislation of US, which helped pave way for social media companies to grow into global giants.
 2. According to Section 230, no provider or user of an interactive computer service shall be treated as publisher or speaker of any information provided by another information content provider.
 3. Section 230 was developed in response to a pair of lawsuits against Internet service providers in early 1990s, which had different interpretations of whether service providers should be treated as publishers or distributors of content created by its users.
16. ▶ US to withdraw from **Open Skies treaty**, which was signed in 2002 as an aerial surveillance system for its 34 participants.
 1. It establishes a region of unarmed aerial observation. It is considered as one of most wide-ranging arms control effort that promotes transparency and openness amongst military forces.
 2. US accused that Russia has not stuck to its part of the deal. This is the third international arms pact the US has pulled out from since Donald Trump became the president. Earlier, US had opted out of *Iran nuclear accord* and *Intermediate-Range Nuclear Forces Treaty*.
 3. India has similar treaty with Japan, signed in 2017.
17. ▶ United Nations listed KHUDOL initiative of Manipur as one of the top 10 global initiatives to fight against COVID-19.
 1. KHUDOL is an initiative of a NGO called Ya_All. Under this, NGO provides food, hygiene and health of LGBTQ community, daily wage workers, people with AIDS.
18. ▶ World Bank announced emergency operations worth **USD 160 billion** to 100 developing countries over a 15-month period to fight COVID-19 Pandemic, which is expected to put over 6 crore into extreme poverty globally.
19. ▶ World Health Organization (WHO) announced the creation of the WHO foundation to support critical health needs. It is an independent grant-making entity that aims at supporting the efforts of WHO to address the global health challenges.

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National

1. ▶ 7 services hosted on IMD Website (<http://mausam.imd.gov.in>) have been onboarded to UMANG Application.
 1. Services are - Current Weather, Nowcas, City Forecast, Rainfall Information, Tourism Forecast, Warnings, Cyclone.
 2. UMANG app (Unified Mobile Application for New-age Governance) is a unified multi-service mobile app launched by govt in 2017. About 660 services from 127 departments & 25 states and about 180 utility bill payment services are live and more are in pipeline.
2. ▶ *Didi Vehicle Service* has been launched by the women of Rural Livelihood Mission in the tribal-dominated Jhabua district of Madhya Pradesh.
3. ▶ **Andhra Pradesh** government has come up with a 1,110-crore 'ReSTART' policy boost, to provide relief at to MSMEs amid the Pandemic TRiggered Slowdown.
 1. ReSTART Policy will include release of 905 crore of pending incentives to MSME units in two months, waive fixed demand charges towards power for a period of three months from April to June for MSMEs (188 crore) and 200-crore working capital loans by creating a fund to meet their liquidity crisis.
 2. It has proposed to defer the payment of fixed power demand charges of 17 crore for same period to all large and mega industries without interest or penal charges.
 3. MSMEs Preferential Market Access Policy will ensure that 25 % of government purchases will be from Micro and small units covering about 364 items.
 4. Government has also constituted a task force with Industries Minister Mekapati Goutham Reddy as chairman to attract investments into State.
4. ▶ **Coronavirus (Covid-19) Updates -**
 1. **India -**
 1. **May 2020 -**

1. Kerala Based Sree Chitra Triunal Institute for Medical Sciences and Technology (SCTIMST) developed two types of nasal and oral swabs and viral transport medium for COVID-19 testing - *Chitra EmBed flocked nylon swabs* and Chitra EnMesh polymeric foam-tipped lint-free swabs.
2. Government raised Minimum Support Price (MSP) for Minor Forest Produce (MFP) of 49 items, amid Covid-19. Increase across various items of minor forest produce ranges from 16% to 66%.
3. *Compendium of Indian Technologies for Combating COVID-19* (Tracing, Testing and Treating) has been prepared by National Research Development Corporation (NRDC). It carries information about 200 COVID-19-related Indian technologies / research / initiatives taken by Government, categorised under 3Ts of Tracking, Testing and Treating.
4. Centre for Cellular and Molecular Biology Hyderabad tied up with a Bengaluru-based Eyestem Research Pte Ltd, to take up research activities on COVID-19.
 1. Attempt will be made to grow novel coronavirus in human cell lines, which will enable *in vitro* testing of potential drugs and vaccines against COVID-19. It will use Eyestem's human lung epithelial cell culture system.
5. CSIR Institute of Genomics and Integrative Biology (CSIR-IGIB) and TATA Sons signed a MoU for licensing of knowhow for FNCAS9 Editor Linked Uniform Detection Assay (FELUDA) for rapid diagnosis of COVID-19.
6. Uttar Pradesh Government launched Ayush Kavach application to help people access prescriptions, which will help the people to strengthen their resistance through ancient practices Ayurveda and Yoga.
7. Arogya Setu Mitri Initiative has been launched under public-private partnership, to be available in the Arogya Setu application. It will offer free online consultation to COVID-19 with the data provided by the three private sector firms and government entities.
8. Health Minister Harsh Vardhan launched 'COVID Katha', as a multimedia guide on COVID-19 disease.
9. National Institute of Animal Biotechnology Hyderabad (NIAB) Researchers developed a biosensor called eCovSens, which can detect COVID-19 virus in saliva samples. The lens can help detect COVID-19 virus within 10 to 30 seconds of testing.
10. Chandigarh government launched mobile app named "CHDCOVID" to provide COVID-19 related information.
11. West Bengal government rolled out *Exit App* for people from other states who are stucked in West Bengal amid lockdown.
12. HDFC Bank released song titled *#HumHaarNahiMaanenge*, to keep hopes up amid Covid-19 pandemic. It has been penned by Prasoon Joshi composed by AR Rahman. HDFC Bank will contribute INR 500 towards PM-CARES Fund, each time this song is shared via social media.
13. Scientists at SN Bose National Centre for Basic Sciences Kolkata (SNBNCBS) developed cost-effective nanomedicine that can treat several diseases by altering oxidative stress in body. It provides hope in India's fight against COVID-19.
14. Personal Protective Equipment (PPE) produced by Indian Navy has been certified by DRDO's INMAS (Institute of Nuclear Medicine and Allied Sciences) Delhi.
15. IIT Delhi incubated Startup Nanosafe Solutions developed first antimicrobial face mask that can be washed and reused for 50 times, to fight against COVID-19. Called NSAFE, it provides 99.2% bacterial filtration.
16. CSIR, through its flagship New Millennium Indian Technology Leadership Initiative (NMITLI) program, has approved a project towards development of human monoclonal antibodies (hmAbs) that can neutralize SARS-CoV-2 (COVID-19).
17. MoU has been signed by PNB Housing Finance with IIT Delhi, to support Research & Development for reusable Personal Protective Equipment (PPE) to be supplied to government hospitals.
18. Bharat Dynamics Limited (BDL) signed MoU with IIT Kanpur for large-scale manufacture of ventilators developed by NOCCA Robotics (incubated start-up of IIT Kanpur).
19. CSIR National Aerospace Laboratories (NAL) Bangalore developed a Non Invasive BiPAP Ventilator named *SwasthVayu*, to treat COVID-19 patients.
 1. Its a microcontroller-based precise closed-loop adaptive control system with a built-in biocompatible "3D printed manifold & coupler" with HEPA filter (Highly Efficient Particulate Air Filter).
 2. These features help alleviate fear of virus spread.

20. Indian Council of Medical Research (ICMR) and Pune-based National Institute of Virology Pune (NIV) developed Elisa based antibody testing kit for coronavirus COVID-19.
 1. ELISA test can process 90 samples together in a single run of two-and-a-half hours, and testing is easily possible even at the district level as the ELISA kit has an inactivated virus.
 2. There are also minimal biosafety requirements as compared to real-time RT-PCR test.
21. Hyderabad Based DRDO Lab Research Centre Imarat (RCI) developed Defence Research Ultraviolet Sanitizer (DHRUVS), to sanitize mobile phones, laptops, iPads, passbooks, challans and paper (including currency notes). It provides 360-degree exposure to UV rays to the objects placed inside the cabinet.
22. Indian Council of Medical Research (ICMR) and NCDC (National Centre for Disease Control) are to conduct a sero survey, which will help to learn about the prevalence of COVID-19 infection.
 1. A Sero Survey is testing of blood serum of individuals and determine the presence of antibodies against COVID-19.
23. DRDO Lab Defence Food Research Laboratory (DFRL) handed over Mobile Microbial Containment (BSL-3) Laboratory 'PARAKH' to Mysuru Medical College and Research Institute (MMCRI) to test samples of coronavirus (Covid-19).
24. Chhattisgarh topped among states in terms of providing jobs under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) amid nationwide lockdown due to COVID-19 pandemic, with 18.52 lakh labourers employed in Chhattisgarh.
25. CSIR received approval from Drug Controller General of India (DCGI) for its two clinical trial drugs- "favipiravir" and "phytopharmaceutical", to combat coronavirus.
26. Indian Council of Medical Research (ICMR) tied-up with Bharat Biotech International Ltd(BBIL), to develop 1st fully indigenous COVID-19 vaccine by using virus strain isolated at National Institute of Virology (NIV) Pune.
27. Indian Council for Medical Research began participation in Global Solidarity Trial of COVID-19 launched by the World Health Organization (WHO).
 1. WHO has launched four mega trials to test the efficiency and accuracy of four treatments - Hydroxychloroquine, Remdesivir, Lopinavir-Ritonavir.
28. CSIR and Ministry of AYUSH began clinical trials of four Ayurvedic drugs - Ashwagandha, Guduchi + Pippali, Yashtimadhu and AYUSH-64 (an ayurvedic anti-malarial drug).
29. Delhi Police launched *Thermal Corona Combat Headgear*, in collaboration with Indian Robotics Solution (IRS). It can protect Police personnel from COVID-19, by detecting temperature from distance of 10-15 metres.
30. Gujarat Based Macpower CNC Machines made India's 1st indigenous hot air seam sealing machine used to manufacture personal protective equipment (PPE) kits. It is used to seal seam of PPEs so that viruses cannot penetrate from the small pores and infect COVID-19 warriors.
31. Under corona studies series published by NBT, HRD Minister Ramesh Pokhriyal 'Nishank' e-launched 7 titles as print and e-edition, based on *Psycho-Social impact of pandemic & lockdown and how to Cope With*. Titles -
 1. Vulnerable in Autumn: Understanding the Elderly
 2. The Future of Social Distancing: New Cardinals for Children, Adolescents and Youth
 3. The Ordeal of Being Corona Warriors: An Approach to Medical and Essential Service Providers
 4. New Frontiers At Home: An Approach to Women, Mothers and Parents
 5. Caught in Corona Conflict: An Approach to the Working Population
 6. Making Sense of It All: Understanding the Concerns of Persons With Disabilities
 7. Alienation And Resilience: Understanding Corona Affected Families
32. Interactive COVID-19 dashboard named as *MIR AHD Covid-19 Dashboard* has been developed by IIT Gandhinagar, which aims to provide key information to stakeholders and public in order to make research-backed decisions during crisis.
33. US President Donald Trump announced that US will donate 200 ventilators to India, to help fight COVID-19.
34. National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G) developed 2 products to help fight COVID-19.
 1. First is a 3D-printed hands-free object that can enable contactless operation of doors, windows, drawers etc.
 2. Second product is a 3D-printed antimicrobial face-shield to control the spread of novel coronavirus.

35. Scientists at CSIR-Central Mechanical Engineering Research Institute Durgapur (CMERI) developed 2 mobile indoor Disinfection Sprayer units - Battery Powered Disinfectant Sprayer (BPDS) and Pneumatically Operated Mobile Indoor Disinfection (POMID).
36. CSIR Partnered with Intel India and International Institute of Information Technology (IIIT) Hyderabad to help achieve faster and less expensive COVID-19 testing and coronavirus genome sequencing to understand epidemiology and AI-based risk stratification for patients with comorbidities.
37. University of Hyderabad (UOH) and CSIR Centre for Cellular and Molecular Biology (CCMB) tied up with UOH-incubated Vins Bioproducts Limited, to develop antibody-based immunotherapy for immediate treatment for Covid-19 pandemic.
38. Textiles Committee Mumbai has been named as 9th approved laboratory to certify Personal Protection Equipment (PPE) body coveralls produced in country for healthcare workers and other COVID-19 warriors. Textiles Committee has developed testing equipment namely *Synthetic Blood Penetration Testing equipment*.
39. Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) commercially launched Agappe Chitra Magna, a magnetic nanoparticle-based RNA extraction kit.
40. Madhya Pradesh Police Initiated Charan Paduka Campaign, for migrant workers passing through the state. Migrant workers are provided with shoes and slippers to reduce their pain.
41. India Post released a Special Postal Cover dedicated to the migrant workers with an objective of paying tribute to them. Five migrant workers were called upon from different sectors to release Special Postal Cover.
42. South Central Railway zone developed a robotic device, "RAIL-BOT" (R-BOT) to assist in the functions of hospital management to provide better health care to the COVID patients.
43. J&K Department of Information and Public Relations has started an initiative "SUKOON – COVID-19 Beat the Stress" programme.
44. Ranchi district launched *Tatpar* program to help the migrant workers to get back to their native places on bus instead of tiresome travel by foot.
45. India became second largest producer of Personal Protective Equipment (PPE), with China at top. India is now producing 2.06 lakh PPE kits every day.
 1. Also, Textiles Committee recently launched Synthetic Blood Penetration Testing Equipment. This will help increase PPE testing potential of country.
46. CSIR-Indian Institute of Integrative Medicine (Jammu) partnered with Reliance Industries Limited (RIL) to develop a new Reverse Transcriptase-Loop Mediated Isothermal Amplification (RT-LAMP) based COVID-19 diagnostic kit.
 1. COVID-19 RT-LAMP test is a nucleic acid based test carried out from nasal/throat swab sample from patients. It is rapid (45-60 min), cost effective and accurate test.
47. Power Ministry PSU REC Limited's CSR wing REC Foundation, partnered with TajSATS (a joint venture of IHCL and SATS Ltd) to distribute specially-made nutritious meal packets for medical staff in Safdarjung Hospital, New Delhi.
 1. REC Limited is a Navratna NBFC focusing on Power Sector Financing and Development across India.
48. Indian Navy formed "NavRakshak" PPE kit with innovative breathable fabric material.
49. Domestic flights resumed operations from May 25, after temporary pause due to COVID-19 Pandemic. Airports and Carriers will be following Standard Operating Procedures (SOPs) issued by Ministry of Civil Aviation.
50. Hyderabad based Research Centre Imarat (RCI) of DRDO developed an Artificial Intelligence based Attendance application (AINA) which allows non-contact based personnel verification, using facial features of person in the wake of COVID-19 pandemic.
51. Naval Dockyard Mumbai manufactured a UV sanitisation bay for sanitisation of worker's coveralls, tools, personal gadgets and masks, to control spread of coronavirus. It utilises UV-C light source for Germicidal Irradiation towards sterilising items.
52. Goa Made COVID-19 negative certificate mandatory for entry into state.
53. Mumbai based start-up has come up with world's first contactless Visitor Management Software called VAMS SafeGuard, with temperature scanner and mask detection.
 1. It uses AI, to allow entry of visitors, only who are only complying to all COVID protection measures.

54. To prevent COVID-19 breakout within a healthcare facility, Kochi Based Devaditek Innovations Private Limited developed a multi-purpose decontamination device called 'Lumos' that can sanitize items ranging from N95 masks to vegetables by using UVGI (ultraviolet germicidal irradiation) technology.

2. Global -

1. May 2020 -

1. Fédération Internationale de Football Association (FIFA) launched a campaign called "#WeWillWin", as a tribute to health workers / professionals working amid COVID-19 pandemic.
 2. Israel Institute for Biological Research (IIBR) isolated a key coronavirus antibody, as a significant breakthrough towards a possible treatment for Covid-19. It claimed that *monoclonal neutralising antibody* attacks and neutralizes the virus.
 1. Italy also claimed to have developed first COVID-19 vaccine.
 2. China completed successful trials of Its COVID-19 Vaccine on Monkeys, preparing for human Trials.
 3. US food and drug regulatory body allowed emergency use of *Remdesivir*, an investigational anti-viral vaccine to treat Covid-19 patients.
 4. US Treasury department plans to borrow USD 2.9 trillion during April-June quarter to deal with coronavirus pandemic. This is 5 times of what US borrowed at peak of the 2008 financial crisis.
 5. United Nations launched 6.7 billion USD global appeal in order to fight against COVID-19, under *Global Humanitarian Response Plan*.
 6. Italian Institute of Technology (IIT) developed 'iFeel-You' bracelet for social distancing. It will help users respect social distancing rules.
 7. Slovenia becomes 1st nation in Europe to declare an official end to COVID-19 pandemic.
 8. World Health Organization will initiate independent review in handling COVID-19 pandemic, launching *Resolution on COVID-19 response*. Aim is to put an end to international blame game about origin of COVID-19. Approx 116 countries backed the resolution of independent review. India supported the Australia initiated resolution, while China opposed it.
 9. WHO also informed that spraying disinfectant on streets does not eliminate COVID-19 Virus, and can pose a health risk.
 10. Italian Institute of Technology (IIT) developed "i-Feel you", an intelligent bracelet which will help users respect social distancing rules.
 11. Japan's economy officially entered a recession, with two consecutive quarters of negative economic growth, due to COVID-19 pandemic slowdown.
 12. World Health Organization suspended trials on the efficacy of drug Hydroxychloroquine in treating COVID-19, due to possible serious side effects in affected patients.
5. ▶ **Kerala** Government project K-FON (Kerala Fibre Optic Network) will be implemented by December 2020, to link all houses / offices with optical fibre network. Cost is approx 1548 Crores.
 6. ▶ **Mizoram** Govt granted *industry* status to sports, to invest more in sports in order to generate employment and increase value.
 7. ▶ Central Institute of Plastics Engineering & Technology (CIPET) has been renamed as Central Institute of **Petrochemicals** Engineering & Technology (CIPET), a premier national institution under Ministry of Chemicals and Fertilizers.
 8. ▶ Chhattisgarh presented their Annual Action Plan for 2020-21 for consideration of Ministry of Jal Shakti, under Jal Jeevan Mission.
 1. It aims to provide adequate potable drinking water to every rural household of country by 2024, with budget 3.60 lakh Crores.
 2. Chhattisgarh has planned to have 100% Functional Tap Water Connection (FHTC) by 2023-24, with budget of 445 Crore for Chhattisgarh for 2020-21.
 3. Under JJM, Bihar plans to provide tap connections to every household in 2020-21 itself, with budget of 1832 Crores.
 9. ▶ Department of Science and Technology (DST) initiated a COVID -19 Indian National Supermodel to help monitor future transmission of infection.
 1. As part of this initiative, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) and IISc, Bangalore will co-ordinate to connect and work with all COVID-19 modeling projects and programs in the country.
 10. ▶ General Conferences (May 21 - 31, 2020) -

1. In Ladakh, first Solar Lift Irrigation Plant of Kargil has been launched, with 5 KW Solar Plant and three HP Submersible Pump at Yak Breeding Farm. It aims to solve shortage of water to irrigate and drinking water.
2. Ministry of Labour and Employment under its National Career Service (NCS) project started offering free online "Career Skills Training" in partnership with TCS ION for its registered job-seekers.
3. Flagship programme of Ministry of Minority Affairs 'Hunar Haat' will restart with theme of "Local to Global" from September 2020. It is a platform for artisans and craftsmen from various parts of the country to showcase their art and craft.
4. Governor of Maharashtra Bhagat Singh Koshiyari made certain modifications in Section 6 of Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006.
 1. Aim to provide justice to tribals whose b Forest rights have been rejected by District Level Committee(DLC) constituted under FRA. Provision has been incorporated to enable rightful claimants of forest rights to appeal against Order of the DLC.
5. National Gallery of Modern Art (NGMA) organised a virtual tour to commemorate the 115th Birth Anniversary of iconic artist Ramkinkar Baij. He was honoured with the Padma Bhushan Award by Government in 1970.
6. Song titled 'Jayatu Jayatu Bharatam – Vasudev Kutumbakkam' has been released, penned by Prasoon Joshi and composed by Shankar Mahadevan. It includes 211 singers including legendary singer Lata Mangeshkar.
7. Uttar Pradesh Government will implement Herbal Roads Project in a stretch of 800 km in state. State government is to plant trees that have medicinal values on either sides of the roads.
8. Department of Posts, Department of Horticulture, Government of Bihar partnered to supply "Shahi Lichi" & "Zardalu Mango" to people at doorstep.
9. Finance Minister Nirmala Sitaraman attended Special Board of Governors meet of BRICS New Development bank through video conference. Heads of Tax authorities of BRICS Nations also met through video conference.
10. 6 States that form western ghats (Kerala, Karnataka, Goa, Maharashtra, Gujarat and Tamil Nadu) urged central govt to expedite notification of Ecologically Sensitive Area (ESA) pertaining to Western Ghats.
 1. Government had formed a high-level working group under Dr. Kasturirangan to converse and protect the bio diversity of Western Ghats.
 2. Committee recommended declaring identified geographical areas falling under six states as Ecologically Sensitive Areas.
11. An accelerator programme *H.A.C.K* has been launched by Karnataka's Centre of Excellence in cyber security (CySecK), comprising of 21 start-ups on board across three cohorts - 10x cohort, 0-1 cohort and virtual cohort.
11. ▶ Govt. released code for Android version of contact tracing app **Aarogya Setu**, on open-source code repository Github.
 1. Government also rolled out a bug bounty programme, promising a reward of 1 lakh for those who discover bugs or loopholes in app.
 2. Aarogya setu has approx 11.5 Crore users, most for any contact tracing app anywhere in world.
12. ▶ India Observatory launched a GIS-enabled dashboard, **CoAST India** (Collaboration/Covid Action Support Group) in collaboration with Anand-based Forest Ecological Security(FES), to help plan urgent steps to get stranded migrant population to safety & care.
13. ▶ Karnataka Government will launch a "State Health Register" to collect data of all its citizens, as first of its kind in India. The project is to be launched from Chikkaballapur district.
14. ▶ Madhya Pradesh CM Shivraj Singh Chouhan started *Shram Siddhi* campaign in every Panchayat of State. Under this, labourers of rural areas will be provided job cards, who do not have them.
 1. Madhya Pradesh Government also launched Rojgar Setu Yojana to help migrant workers.
15. ▶ Madhya Pradesh Govt inaugurated *Everybody will get employment* scheme. Under this, MNREGA job cards will be distributed to labourers.
16. ▶ Minister for Electronics and IT, Law and Justice and Communications Ravi Shankar Prasad launched India's national Artificial Intelligence Portal at URL **www.ai.gov.in**. It portal shall work as a one stop digital platform for AI related developments in India.
 1. A National Program for the youth, *Responsible AI for Youth* was also launched, to equip young students with appropriate new age tech mind-set, relevant AI skill-sets and access to required AI tool-sets to make them digitally ready for the future. It is open to students of classes 8 - 12 from Central and State government-run schools from across country.
17. ▶ Minister for Fisheries, Animal Husbandry and Dairying, Giriraj Singh Launched **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**, which aims to enhance fish production to 220 lakh metric tons by 2024-25 from 137.58 lakh metric tons in 2018-19 at

an average annual growth rate of about 9%.

1. It will result in doubling export earnings to Rs.1,00,000 crore and generate about 55 lakhs direct and indirect employment opportunities in fisheries sector over 5 years.
2. Earlier on May 20, Cabinet Approved implementation of *PMMSY*, aimed at bringing about Blue Revolution through sustainable and responsible development of fisheries sector
 1. Components Central Sector Scheme (CS) and Centrally Sponsored Scheme (CSS) have estimated investment of 20050 crores, with Central share of 9407 crores. It will be implemented for 5 years (FY 2020-21 to FY 2024-25).
 2. Central Sector Scheme -
 1. Entire cost will be borne by Central government.
 2. Wherever direct beneficiary oriented activities are undertaken by entities of central government, central assistance will be up to 40% of project cost for General and 60% for SC/ST/Women category.
 3. For Centrally Sponsored Scheme (CSS), Project/unit cost will be shared between Centre and State as -
 1. North Eastern & Himalayan States - 90% Central share and 10% State share.
 2. Other States - 60% Central share and 40% State share.
 3. Union Territories - 100% Central share.
 4. Benefits Include -
 1. Address critical gaps in the fisheries sector and realize its potential.
 2. Augmenting fish production and productivity at a sustained average annual growth rate of about 9% to achieve a target of 22 million metric tons by 2024-25.
 3. Creation of critical infrastructure including modernisation and strengthening of value chain.
 4. Doubling of fishers, fish farmers and fish workers incomes by 2024
18. ▶ Minister for Road Transport & Highways and MSMEs, Nitin Gadkari inaugurated Chamba Tunnel under Chardham Pariyojana through video conference, built by Border Roads Organisation.
 1. Its a 440 m long Tunnel below busy Chamba town on Rishikesh-Dharasu road Highway (NH 94). Tunnel will ease out congestion though Chamba town and reduce distance by 1 kilometer and journey through town will take 10 minutes, compared to 30 minutes earlier.
 2. Tunnel is Horse shoe type, with 10 mtr carriage way width and 5.5 mtr vertical clearance. Sanctioned cost is 107 Crores.
 3. Under Chardham Project costing around Rs 12,000 Crore with approximate length of 889 Km, BRO is constructing 250 Km of National Highways leading to holy shrine Gangotri and Badrinath.
19. ▶ Ministry of Home Affairs (MHA) issued new guidelines to fight COVID-19 and for phased re-opening of areas outside the Containment Zones, effective from June 1, 2020.
 1. Current phase of re-opening, **Unlock 1**, will have an economic focus. Major parts of economy will be opened for trade activities.
 2. Lockdown measures would continue to be implemented strictly in the containment zones.
 3. **Phase I** (permitted to open from June 8, 2020)
 1. Religious places and places of worship for public;
 2. Hotels, restaurants and other hospitality services; and
 3. Shopping malls.
 4. **Phase II** -
 1. Schools, colleges, educational/ training/ coaching institutions etc., will be opened after consultations with States and UTs.
 5. Activities to remain prohibited throughout the country -
 1. International air travel of passengers;
 2. Operation of Metro Rail;
 3. Cinema halls, gymnasiums, swimming pools, entertainment parks, theatres, bars and auditoriums, assembly halls and similar places; and,
 4. Social/ political/ sports/ entertainment/ academic/ cultural/ religious functions/ and other large congregations.
 5. Dates for the opening of above activities would be decided in **Phase III**, based on assessment of the situation.
 6. No restriction on inter-State and intra-State movement of persons and goods. Night curfew would continue to remain in force, on the movement of individuals, for all non-essential activities. However, the revised timings of the curfew will be from 9 pm to 5 am.

7. States and UTs, based on their assessment of the situation, may prohibit certain activities outside the Containment zones or impose such restrictions, as deemed necessary.
20. ▶ Ministry of New and Renewable energy (MNRE) proposed *One Sun One World One Grid (OSOWOG)* to interconnect renewable energy by sharing solar resources with more than 140 countries of West Asia and SouthEast Asia. Its aim is to provide solar power to nations which lack sunlight, by building a common transmission system.
21. ▶ Ministry of Road Transport and Highways notified emission norms for L7 category for BS VI. These emission norms will encourage the production of quadricycles.
 1. Quadricycle segment in India was introduced in less than 2 years, with full-fledged production yet to begin.
 2. Quadricycle are of size of a three wheeler but runs with four wheels. The Quadricycle was inserted as “Non-Transport” under Motor Vehicles Act, 1988.
 3. Vehicles with four wheels with mass more than 400 kg are placed under L7 category.
22. ▶ Ministry of Tribal Affairs Included 23 additional Minor Forest Produce (MFP) items and stipulation of their Minimum Support Price (MSP) under Centrally Sponsored Scheme titled "Mechanism for Marketing of Minor Forest Produce (MFP) through Minimum Support Price (MSP) and development of value chain of MFP". It enhances coverage from 50 to 73 items.
 1. Earlier on May 1, 2020, MSP revisions for existing 50 MFPs were announced, with increase in range 16% to 66%.
23. ▶ Power Ministry PSU Power Finance Corporation (PFC) signed agreement with Madhya Pradesh Govt. PSU Narmada Basin Projects Company Ltd. (NBPCL), to fund projects worth Rs.22,000 crore for 225 MW hydro-electric projects & multipurpose projects in Madhya Pradesh.
24. ▶ Punjab Government promulgated *Good Conduct Prisoners (Temporary Release) Amendment Ordinance 2020*. Under it, temporary release of the prisoners has been allowed beyond the maximum period of 16 weeks in a calendar year.
25. ▶ Supreme Court took suo motu cognisance of migrant workers issue and noted that there have been “inadequacies and certain lapses” on the part of the Central and State governments in dealing with the migrant workers crisis during lockdown.
 1. *Suo motu* is a latin phrase which means “on its own”. This means that the court has taken the matter into cognisance on its own and without any plaintiff. A plaintiff is a person or entity which files a case or petition in the court.
 2. SC seeks response by May 28, 2020 on this matter.
26. ▶ Tamil Nadu Government started works on Solar Fence Farmland Protection Programme, under Central Agriculture Improvement Scheme.
 1. It aims to protect agricultural lands of districts which have western ghats as their boundaries and are at risk of animal(Elephant) attacks.
 2. 50% of construction cost of the electric fence and setting up the solar panels for power generation will be provided under the Central Agriculture Improvement Scheme as a subsidy to farmers, up to INR 2.18 Lakhs.
27. ▶ Uttar Pradesh Government announced to set up a Migration Commission for welfare of migrants, to ensure job and social security of the migrant workers through skill mapping.
28. ▶ Uttar Pradesh government has set up ‘UP Start-up Fund’ under UP Information Technology and Start-up Policy 2017, signing an MOU with Small Industries Development Bank of India (SIDBI) for the same, with Initial contribution of 15 crore.
29. ▶ Uttarakhand Govt inaugurated *Mukhyamantri Swarozgar Yojana* for returnee migrants, to give self-employment opportunities to youth and a boost to reverse migration, especially entrepreneurs returning to Uttarakhand and encourage skilled and unskilled artisans.
30. ▶ Uttarakhand became 1st state to release a report highlighting its conservation efforts to save 1145 rare plants from extinction -
 1. Project aims at Germplasm conservation so that species remain conserved and also to promote conservation of plant species among general public so as to end plant blindness.
 2. According to the red list of International Union for Conservation of Nature (IUCN), under this project, 46 species are endemic to Uttarakhand and 68 species are rare, endangered or threatened.
31. ▶ Zoological Survey of India updated list of Indian amphibians, listing 20 species as critically endangered and 35 species as endangered. Number of amphibian species recorded in checklist of ZSI has increased from 284 (2009) to 447(2020).

Top

Persons

1. ▶ Obituaries (May 2020) -
 1. K S Nisar Ahmed - Noted Kannada poet and Padma Shri awardee.
 2. RV Smith - Noted historian & author.

3. Chuni Goswami - Former India football captain.
4. Hema Bharali - Freedom fighter & Padma Shri awardee.
5. Denis Goldberg - Noted South African Activist, who was active in struggle against Apartheid (रंगभेद).
6. Dalit Ezhilmalai - Former union minister. He served as State, Health and Family Welfare (IC) during BJP government in 1998–99.
7. Gerald Isaac Stiller - Noted American comedian.
8. Richard Wayne Penniman (Little Richard) - Noted American singer, songwriter, and musician. He was Known as Founding Father of Rock 'n' Roll.
9. Bessie Regina Norris (Known as Betty Wright) - Noted American singer, and a grammy awardee.
10. Manmeet Singh - Former TT national champion.
11. Notable Deaths due to COVID-19 -
 1. Hari Shankar Vasudevan - Noted historian.
 2. Noted Musician Wajid passed away. He was part of noted Musician-duo Brothers Sajid–Wajid.
12. Anisuzzaman - Noted Bangladeshi Activist, literary personality. He was called national Professor of Bangladesh. He was honored by Padma Bhushan award by India.
13. Debesh Roy - Noted Sahitya Akademi winning Bengali author.
14. Sai Gundewar - Bollywood actor.
15. Basu Chatterjee - Noted film director and screenwriter.
16. Ratnakar Matkari - Noted Marathi writer and playwright.
17. Ashley Cooper - Noted Australian tennis Player. He had won 4 Grand Slam Titles.
18. Balbir Singh Dosanjh - Noted Indian hockey player. He was a three-time Olympic gold medallist, having played a key role in India's wins in London, Helsinki, and Melbourne Olympics.
19. Shyamala G Bhawe - Noted classical vocalist and Musician.
20. Luigi "Gigi" Simoni - Italian footballer and manager.
21. Mohit Baghel - Bollywood Actor.
22. Hana Kimura - Noted Japanese female professional wrestler.
23. Ajit Jogi - First chief minister of Chhattisgarh.
24. Bejan Daruwala - Noted Astrologer.
25. Yogesh Gaur - Noted lyricist.
26. M. P. Veerendra Kumar - Politician, writer and journalist. He was incumbent member of Lok Sabha, from Kerala.
27. R. Shanmugam -Former Tamil Nadu footballer.
28. Mujtaba Hussain -Noted Urdu author and Padma Shri Awardee.
2. ▶ Persons Resigned / Retired (May 2020) -
 1. Noted English snooker player Peter Ebdon announced his retirement.
 2. Noted Indian Para-athlete Deepa Malik announced her retirement. She is the first Indian woman to earn a medal at the Paralympic Games. She won Silver medal at 2016 Summer Paralympics in shot put.
 3. World Trade Organization chief Roberto Azevedo announced to step down on August 31, a year before his term ends, amid COVID-19 pandemic ravaging global economy.
 4. Alibaba co-founder Jack Ma stepped down from Softbank Group's board of directors, after serving for 13 years.
 5. Spanish Footballer Aritz Aduriz announced his retirement from football.
 6. Noted American tennis player Jamie Lee Hampton announced her retirement.

Top

Science

1. ▶ Scientists from Institute of Advanced Study in Science and Technology (IASST) developed a pH-responsive smart bandage that can deliver medicine applied in wound at pH that is suitable for the wound.
 1. It is developed by fabricating a nanotechnology-based cotton patch that uses cheap and sustainable materials like cotton and jute.
 2. Jute has been used for first time as a precursor in synthesizing fluorescent carbon dots, and water was used as dispersion medium.

3. Stimuli-responsive nature of fabricated hybrid cotton patch acts as an advantage as in case of growth of bacterial infections in a wound, and this induces release of drug at lower pH which is favourable under these conditions.
 4. This pH-responsive behaviour of the fabricated cotton patch lies in the unique behaviour of the jute carbon dots incorporated in the system because of the different molecular linkages formed during the carbon dot preparation.
 5. Use of cheap and sustainable material like cotton and jute to fabricate patch makes whole process biocompatible, non-toxic, low cost and sustainable.
2. ▶ **SpaceX** became first private rocket company to send astronauts to space, launching NASA Astronauts Doug Hurley and Bob Behnken. It will end reliance of NASA on Russian space rockets for sending NASA astronauts to space. As part of mission, Astronauts in SpaceX's Crew Dragon Capsule entered International Space Station (ISS).
 3. ▶ A new trough collector equipped with enhanced energy to serve industries has been developed by IIT Madras.
 1. The *Parabolic Trough Collector* is a lightweight and low-cost system with high energy efficiency and can operate under the country's varied climatic conditions. It can pave way for sustainable energy solutions in agriculture and industrial process heat sectors.
 2. *Trough Collector* focuses sunlight on a small area where it is absorbed and then utilised for heating and subsequently into energy generation.
 4. ▶ Astronomers developed a model that can predict which of many types of clouds, from smoggy methane haze to sapphire, can be expected on hot Planets of different temperatures (Jupiter like Exoplanets), which can be up to thousands of degrees kelvin.
 1. This will help astronomers in studying gases in atmospheres of distant worlds as clouds interfere in getting measurement of atmospheric composition. It will also be helpful in understanding atmospheres of cooler giant planets and their moons, such as Saturn and Jupiter's moon Titan.
 2. Most common type of cloud that can be expected over a large range of temperatures must consist of solid or liquid droplets of Oxygen and Silicon, like melted quartz or molten sand. Skies on cooler hot Jupiters that (950 kelvin) are dominated by a hydrocarbon haze, essentially smog.
 5. ▶ Centre for Cellular and Molecular Biology (CCMB) established stable cultures of coronavirus (SARS-CoV-2) from patients' samples. It enables CCMB to work towards vaccine development and testing of potential drugs to fight COVID-19.
 1. Novel coronavirus enters human cell by binding with the ACE-2 receptor on the cell surface. Not all cells have ACE-2 receptors. Human epithelial cells in the respiratory tract copiously express ACE-2 receptors, causing respiratory disease in the infected patient. However, epithelial cells can not be grown in lab.
 2. Researchers use Vero cells (kidney epithelial cell lines from green African monkey), which express ACE-2 proteins.
 3. Culturing a large amount of virus and inactivating it can be used as inactivated virus vaccine.
 6. ▶ IIT Madras and University of North Texas and United States Army lab, have developed a magnesium alloy to replace steel and aluminium in the automobile industry to reduce carbon footprint and increase fuel efficiency.
 7. ▶ In order to meet demand of growing Demand of rice, its production needs to increase by about 50% of current productivity.
 1. In this direction, Under a Joint study by National Institute of Plant Genome Research, National Rice Research Institute and University of Delhi, Researchers identified a region in genome of rice, which seems to have potential for improving productivity.
 2. Scientists sequenced genomes of four Indian genotypes (LGR, PB 1121, Sonasal & Bindli), and found that Indian rice germplasms had much more genomic diversity than that estimated so far.
 3. They studied DNA from 3000 rice accessions from across world, identifying a long (~6 Mb) genomic region, which had an unusually suppressed nucleotide diversity region across centromere of chromosome 5. They named it as 'low diversity region'.
 4. This region played important role during domestication of rice varieties, as it was present in most cultivated rice genotypes and absent in wild varieties.
 5. Most of modern cultivated rice varieties belong to *japonica* and *indica* genotypes. They had this region prominently.
 6. The study assumes importance as in addition to genome-wide exploration, it has highlighted an important and a long domestication-related genomic region, which was found to be evolutionarily crafted to carry multiple agronomic traits associations.
 8. ▶ Indian Space Research Organisation (ISRO) received patent for its method of manufacturing highland lunar soil simulant or moon soil which was prepared to create an artificial moon surface as a part of 2019's Moon landing mission Chandrayaan-2 so that Vikram lander and Pragyaan rover could be tested.

1. This soil simulant represents the regolith (loose unconsolidated rock and dust that sits atop a layer of bedrock) of lunar highland region.
2. It is made in bulk from anorthosite rocks, a sample similar to regolith identified and picked out from Sittampundi Anorthosite Complex, almost 67 km from Salem, in Tamil Nadu.
9. ▶ Institute of Advanced Study in Science and Technology Guwahati (IASST) developed an electrochemical sensing platform for detecting carcinogenic or mutagenic compound *N*-nitrosodimethylamine (NDMA) and *N*-nitrosodiethanolamine (NDEA) sometimes found in food items like cured meat, bacon, some cheese, and low-fat milk.
 1. It was achieved by developing a modified electrode by immobilizing carbon nanomaterials (carbon dots) in DNA.
 2. Electrochemical biosensor platform was developed using ability of NDMA and NDEA, to alter the DNA. Electrode was developed by depositing carbon dots (carbon nanoparticles) and then immobilizing bacterial DNA on them.
10. ▶ NASA renamed its next-generation space telescope *Wide-Field Infrared Survey Telescope (WFIRST)*, after NASA's first chief astronomer Nancy Grace Roman, set for launch in 2025.
 1. She paved the way for space telescopes focused on broader universe. She is considered as **mother** of Hubble Space Telescope, which was launched 30 years ago.
 2. Roman Space Telescope is expected to help NASA better understand space and help unravel long-standing astronomical mysteries, such as force behind the universe's expansion and also boost its search for distant planets beyond our solar system.
11. ▶ NASA researchers found high energy particles erupting from ice in Antarctic region. Researchers believe that these particles are proof to parallel universe.
 1. **ANTIA** is high-energy cosmic neutrino that detect radio pulses that are being emitted by Antarctic ice sheet. The neutrinos in the ice produce radio pulses due to Askaryan effect.
 2. ANTIA succeeded in detecting 'fountain' of high-energy particles in 2006 and 2014 but the researchers initially thought them as background noise or glitches. Neutrinos are only particle that reach earth unattenuated.
 3. Askaryan Effect is the phenomenon where a particle travelling at a velocity faster than light in a dense electric medium, produces shower of secondary charged particles.
12. ▶ New astronomical transient that is faster, brighter, and heavier at radio wavelengths than its predecessors has been identified by astrophysicists.
 1. After a bright burst was captured in 2016, in a tiny galaxy 500 million lightyears away, Researchers determined that anomaly is third fast blue optical transient (FBOT) ever captured in X-ray and radio wavelengths.
 2. FBOTs are highly luminous cosmic explosions. The most famous FBOT is AT2018COW ("The Cow")- a rare event that appeared to be birth of a neutron star or black hole.
 3. Newly identified FBOT, called **CSS161010** in short has vastly overshadowed the previously discovered FBOT "The Cow" with the heaviness and sheer speed of its material outflows. It produced some kind of fastest outflows in nature launching particles and gas at more than 55% speed of the light.
 4. CSS161010 launched 1 to 10 percent mass of sun, at more than half the speed of light which shows that this is a new class of transient.
13. ▶ New fresh water fish called Punitus Sanctus found in Velankanni, Tamil Nadu. Punitus is a species of fish that are commonly found in drains of western and eastern ghats and also in Eastern Himalayas.
14. ▶ Researchers at Institute of Nano Science and Technology Mohali found a unique route to fabricate precisely controlled nanostructures of desired geometry and location on 2D materials, through a rapid one-step low power laser writing process.
 1. Approaches used so far to achieve controllability over hotspots distribution, limits their potential to be used for large area substrates.
 2. To overcome this, INST developed a hybrid Surface-enhanced Raman spectroscopy (SERS) platform of Molybdenum disulfide (MoS₂) nanostructure decorated with gold nanoparticles, where direct laser writing is used to engineer artificial edges on surface of MoS₂.
 3. This created localized hotspots with remarkable precision and control. SERS is a technique for molecular detection and characterization that relies on enhanced Raman scattering of molecules that are adsorbed on SERS-active surfaces, such as nanostructured gold or silver.
15. ▶ Researchers confirmed existence of **Proxima b**, an Earth-like planet that's orbiting the closest star to our Solar System, Proxima Centauri.
 1. Proxima b is 1.17 times the mass of Earth, smaller than older estimate of 1.3 times. It orbits its star in just 11.2 days.

2. Proxima b was first discovered in 2016 using HARPS (High Accuracy Radial Velocity Planet Searcher) planet-hunting spectrograph at European Southern Observatory in Chile. Now, ESPRESSO spectrograph on Very Large Telescope (VLT) in Chile has provided detailed confirmation.
3. It is approx 4.24 Light years away from earth, making it the nearest exoplanet.
16. ▶ SPHERE instrument of Very Large Telescope in Chile has captured birth of new planet in the AB Aurigae star system, as first time in human history the birth of a star is being witnessed.
 1. The image depicts orange mass of gas. The mass showing the cosmic matter of the universe at gravitational tipping point is exactly the sign for a star system to be born.
17. ▶ Scientists at Kolkata based Botanical Survey of India (BSI) discovered 3 new plant species namely- *Eugenia sphaerocarpa*, *Goniothalamus sericeus* and *Memecylon nervosum* at the Western Ghats in Kerala and Tamil Nadu (TN).
 1. *Eugenia sphaerocarpa* is Found primarily in the Kakkayam area of the Malabar wildlife sanctuary in Kerala at an altitude of 800 m, it belongs to the Myrtaceae or Rose apple family.
 2. *Goniothalamus sericeus* was Discovered in Kanyakumari wildlife sanctuary in Tamil Nadu (TN) at an altitude of 1400m, this species belongs to the Annonaceae family of custard apple.
 3. *Memecylon nervosum* is Found at an altitude between 700-900m at the Kanyakumari wildlife sanctuary in Tamil Nadu (TN), this species belongs to the Melastomataceae (Kayambo or Kaasavu in local parlance) family.
18. ▶ Scientists from Raman Research Institute along with IISER Pune and Paris Diderot University (France), have found out that spectrin, which are flexible rod-shaped molecules present in axons, act as 'shock absorbers' to protect axons from stretch-induced damage.
 1. Axons are long tubular extensions of nerve cells that transmit electrical signals across long distances and can be up to a meter long in case of humans. At such lengths, they are subjected to large stretch deformations during limb or other bodily movements. Axons undergo significant deformations even during normal activities like jumping.
 2. Probing into what strategies axons adopt to protect themselves from damage during deformations, scientists showed that neuronal cells may have evolved a clever strategy using an etched optical fiber attached to a piezo drive as a force-sensing cantilever to stretch live axons and to measure resultant tension.
 3. Brain undergoes significant deformations (up to 5% of strain) even under normal activities such as jumping. In contact sports, brain concussion occurs and is a leading cause of injuries.

Top

Sports

1. ▶ Japanese tennis star Naomi Osaka became highest-paid female athlete in sporting history, raking in \$37.4 million in prize money and endorsements in past 12 months, according to Forbes. However, Osaka ranks only 29th overall among sports stars in terms of total earnings in past year.
 1. Swiss Tennis Star Roger Federer is top earner athlete (106 Million USD), Followed by Portuguese Footballer Cristiano Ronaldo (105 Million USD).
 2. Indian Cricketer Virat Kohli is top ranked Cricketer in List (66th), with earnings of 26 Million USD.
2. ▶ Misc. Sports News (May 2020) -
 1. India lost its top spot to Australia in ICC test rankings, dropping to third.
 2. Sania Mirza became first Indian to win Fed Cup Heart Award for her successful return to court post motherhood. Sania won the award for Asia/Oceania zone.
 3. Commonwealth Games Federation (CGF) postponed 7th season of Commonwealth Youth Games from 2021 to 2023, following a clash with Tokyo Olympics, which were earlier postponed due to Covid-19 pandemic. Other major events postponed -
 1. Badminton World Championships (2020 to November 2021).
 2. Swimming world governing body Federation Internationale de Natation (FINA) rescheduled 2021 Fukuoka aquatics world championships to May 2022.
 4. World Anti-Doping Agency (WADA) banned Indian discus thrower Sandeep Kumari for 4 years after failing a drug test.
 5. Tennis Integrity Unit banned Egypt's tennis player Youssef Hossam from professional tennis for life.
 6. China won inaugural \$180,000 FIDE Chess.com Online Nations Cup, following a 2-2 draw against USA.
 7. French cyclist Remy Di Gregorio has been banned for 4 years by International Cycling Union (UCI).
 8. All India Football Federation (AIFF) nominated N Bala Devi and Sandesh Jhingan for Arjuna Award 2020.

9. Germany's Football league Bundesliga became world's first major sports competition to resume, post nationwide lockdown imposed to contain coronavirus pandemic.
10. ICC Cricket Committee (Headed by Anil Kumble) banned use of saliva to shine the ball. The practice meant for swing bowling is now primarily held as health risk due to threats of COVID-19.
11. Powerlifters Savita Kumari & Ankit Shishodia have been provisionally suspended by National Anti Doping Agency (NADA), for violating anti-doping rules.
12. World Health Organization (WHO) and International Olympic Committee (IOC) signed an agreement to work together to promote health through sport and physical activity.
13. India's long-distance runner Kiranjeet Kaur has been handed a four-year ban by World Athletics' anti-doping body for testing positive for a banned substance (Enobosarm).
14. 36th National Games, planned for October-November in Goa, have been deferred indefinitely due to the COVID-19 pandemic.
15. Sri Lankan Cricketer Shehan Madushanka has been suspended from all forms of cricket, for alleged possession of heroin.
16. Sports Authority of India (SAI) deposited NR 30,000 each to 2,749 Khelo India athletes as out of pocket allowance (OPA) amid COVID-19 lockdown.
17. Cricketer Rohit Sharma has been nominated by Board of Control for Cricket in India (BCCI) for Top sports Honour Rajiv Gandhi Khel Ratna Award 2020. BCCI Also nominated Shikhar Dhawan, Deepti Sharma and Ishant Sharma for Arjuna Awards.

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