

My Notes...

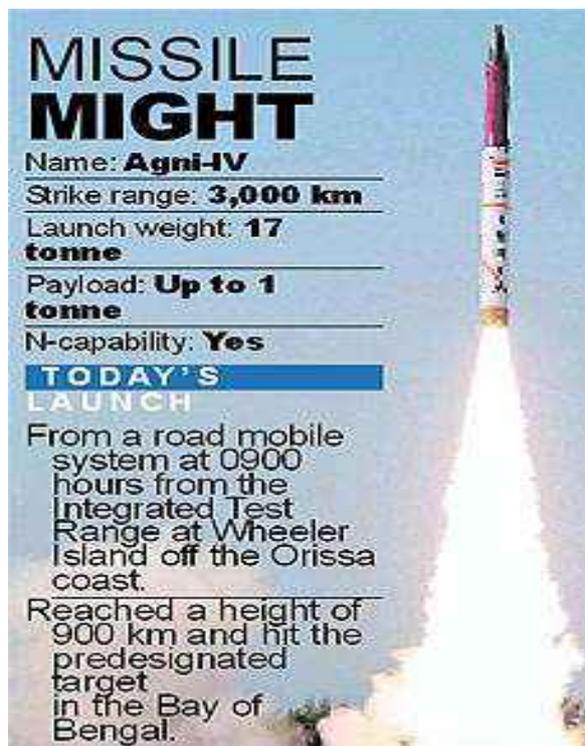
NATIONAL

AGNI-IV SUCCESSFULLY TEST-FIRED

India successfully test-fired its **nuclear-capable strategic ballistic missile Agni-IV** with a strike range of **4000 km** as part of a user trial from a test range off Odisha coast. Supported by a mobile launcher, **the surface-to-surface missile** was flight tested from **launch complex-4** of the **Integrated Test Range (ITR)** at Dr Abdul Kalam Island.

What

1. This was the 6th trial of the **indigenously developed Agni-IV missile** which met the mission objectives. The last trial conducted by the specially formed **strategic force command (SFC)** of Indian Army on November 9, 2015 was also successful.
2. The sleek missile having 4000 km strike range is a two stage missile. It is 20 meter-long weighing 17 tonnes.
3. **Agni-IV missile is equipped with state-of-the-art Avionics**, 5th generation on board computer and distributed architecture. It has the latest features to correct and guide itself for in-flight disturbances.
4. The most accurate **Ring Laser Gyro based Inertial Navigation System (RINS)** and supported by highly reliable redundant Micro Navigation System (MINGS), ensures the vehicle reaches the target within two digit accuracy.
5. Ballistic missiles like **Agni-I, II and III and Prithvi** are already in the arsenal of armed forces, giving India an effective deterrence capability.
6. The **successful trial of Agni IV** came close on the heels of a similar test on December 26, 2016 of long range missile Agni 5 which was successfully carried out from the same launch site.



SUPREME COURT HISTORIC VERDICT

The **Supreme Court of India** upholds the **secular ethos of the Indian Constitution** by saying that **politicians can't use religion, caste, creed or language for seeking votes**. In a 4:3 verdict in the controversial Hindutva case the apex court said election in the country is a secular exercise and thereby its way and processes should be followed.

What

1. The relationship **between man and God is an individual choice** and the state is forbidden to interfere in such an activities.
2. A **seven-judge Constitution bench of the Supreme Court** passed the judgement in the Hindutva case after hearing in detail arguments from various petitioners.
3. The majority view of the Supreme Court upheld that elections will be void if a politician makes an appeal for vote on the basis of his religion or his voters and agents.
4. The **seven-judge bench headed by Chief Justice T S Thakur** passed this order while revisiting its **two-decade-old 'Hindutva' judgement for an authoritative pronouncement on electoral law** categorising misuse of religion for electoral gains as "corrupt practice".

EXTRA SECOND ADDED TO INDIAN TIME

A 'leap second' was added to the Indian clock at **5:29.59 hours** on 1 January 2017 to **synchronise with the Earth's rotational clock**. As the atomic clock at the National Physical Laboratory (NPL) struck 23:59:59 last night, it was programmed to add an extra second to 2017 to compensate for a slowdown in the Earth's rotation.

What

1. Adding a second barely has an impact on the daily life, but it does matter in the fields of satellite navigation, astronomy and communication.
2. **The Earth and rotation around its own axis is not regular**, as sometimes it speeds up and sometimes it slows down, due to various factors including earthquakes and moon's gravitational forces that often results in ocean tides.
3. As a result, **astronomical time (UT1) gradually falls out of sync with atomic time (UTC)**, and as and when the difference between UTC and UT1 approaches 0.9 seconds, a leap second is added to UTC through atomic clocks worldwide.
4. Adding the leap second to the Indian clock is done by the NPL under the Council for Scientific and Industrial Research (CSIR). **The NPL, one of the oldest laboratories in the country, has five atomic clocks** and nearly 300 such pieces exist across the globe.
5. Atomic clocks are so precise that the margin of error in its functioning is just of a second in 100 million years.
6. The Indian atomic clock was also synchronised with the atomic clock of **International Bureau of Weight and Measure (BIPM), France**.
7. Those utilising CSIR-NPL time dissemination services need not worry as they will receive the corrected time post the insertion of the leap second.

Since 1972, 36 leap seconds have been added at intervals varying from six months to seven years and this will be **37th year**.

SUBMARINE KHANDERI LAUNCHED

Khanderi is the second Scorpene class stealth submarine that has superior stealth and the ability to launch a crippling attack with torpedoes as well as tube-launched anti-ship missiles whilst underwater or on surface, was launched at the **Mazagon Dock Shipbuilders Limited** on 12 January 2017.

What

1. The **submarine is designed to operate in all theatres**, including the tropics. All means and communications are provided to ensure interoperability with other components of a Naval task force.
2. It can undertake **multifarious types of missions typically undertaken by any modern submarine**, i.e anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying, area surveillance, etc.
3. **Project 75 Kalvari is a key milestone** in self-reliance and indigenisation for the country.
4. The state-of-the-art features of this Scorpene class submarine include superior stealth and the ability to launch a crippling attack on the enemy using precision guided weapon. The attack can be launched with torpedoes, as well as tube-launched anti-ship missiles, whilst underwater or on surface.
5. The **first of the class submarine, Kalvari is presently undergoing sea trials and likely to be commissioned into Navy by Mid-2017**. These submarines, post induction, would form the core of Navy's conventional submarine arm.
6. **Khanderi is named after the Island fort of Maratha forces**, which played a vital role in ensuring their supremacy at sea in the late 17th century. Khanderi is also the name for Tiger Shark.
7. The construction of **six Scorpene submarines is presently in progress at Mazagon Dock Shipyard Limited (MDL)**, under **Project 75 with Transfer of Technology from M/s DCNS, France** as the collaborator.

SAKSHAM - 2017

Minister of State (Independent Charge) for Petroleum & Natural Gas, Shri Dharmendra Pradhan will inaugurate a **month long awareness programme "Saksham - 2017" on 16th January, 2016** at Siri Fort Auditorium, New Delhi.

What

1. **Saksham - 2017 (Sanrakshan Kshamta Mahotsav)** is aimed to create awareness amongst masses towards judicious utilization and conservation of petroleum products along with use of energy efficient appliances and switching to cleaner fuels.
2. The programme is being organized by **PCRA (Petroleum Conservation Research Association)** and other Oil & Gas PSUs under the aegis of Ministry of Petroleum & Natural Gas.
3. During one-month long drive, workshops will be held for drivers of commercial vehicles and housewives, cooks on adopting simple fuel saving measures.
4. Saksham - 2017 is aimed to educate on various steps for fuel conservation through activities like Quiz Show, Saksham Asian Cycling Championship, Walkathons, concerts and other activities across the country.
5. National school winners of essay and painting competitions will also be given awards during the inauguration which includes visit to Japan for children, laptops & cash prizes to encourage children for continuing their efforts and enhancing their knowledge on energy conservation.

INDIA'S FIRST MODEL SMART CITY

According to **the ministry of urban development (MoUD) Gandhinagar** has now become the first city in the country to go smart. From seamless WiFi connectivity (unlike hotspots planned other cities) to smart sensor-enabled traffic lights that brighten or dim, based on vehicular traffic density, the first phase of the smart city project has been rolled out in the capital city of Gujarat, ahead of the **Vibrant Gujarat Global Summit (VGGS) 2017** by the Gandhinagar Municipal Corporation (GMC).

What

1. The **Gandhinagar smart city project** also includes services like internet protocol-based surveillance, environment sensors, digital display, speed and face detection traffic management, automatic numberplate recognition, public address system (PAS), citizens' helpdesk mobile application and a centralised command centre to monitor and control activities on ground.
2. The **project has been created in partnership with Sterlite Technologies**, which has designed, built and is managing the smart city services in Gandhinagar.
3. The smart services project of Gandhinagar will address essential administrative needs of citizens and empower them with easy access to critical information.
4. **Gandhinagar has outdone some of the major cities** which were shortlisted by Ministry of Urban Development under Smart Cities Mission. Prominent among these are cities like Ahmedabad, Pune, Jaipur, Surat, Kochi, Coimbatore, Chennai, Ludhiana, Amritsar, Nagpur, Varanasi and Vadodara, among others who begun work on rolling out smart city services.
5. **GMC has also integrated major civic amenities** and public utilities on a common citizens' helpdesk mobile application that acts as a single destination for availing the same. The system has a 24x7 call centre that addresses citizens' complaints and queries filed via the app, while all the smart services can be controlled and monitored through the central command centre.

SUCCESSFUL TEST FIRING OF GUIDED PINAKA

The **Pinaka Rocket converted to a Guided Pinaka** was successfully test-fired from Launch Complex-III, ITR Chandipur. The **Pinaka Rocket Mark-II**, which evolved from **Pinaka Mark-I** is equipped with a navigation, guidance and control kit and has been transformed to a Guided Pinaka.

What

1. This conversion has considerably enhanced the range and **accuracy of Pinaka**.

2. The test-firing has met all mission objectives. The radars, **electro-optical and telemetry systems** at Chandipur tracked and monitored the vehicle all through the flight-path.
3. The Guided Pinaka is **developed jointly by ARDE Pune, RCI Hyderabad and DRDL Hyderabad**. ITR Chandipur provided the range and launch support.
4. Raksha Mantri, Shri Manohar Parrikar has congratulated the DRDO, industry and the **Armed Forces for the successful flight-test**.

104TH INDIAN SCIENCE CONGRESS-2017

The **Defence Research and Development Organization (DRDO)** is participating in “**Pride of India-Science Expo-2017**” being held from 3-7 January at the Sri Venkateswara University Campus, Tirupati. The five-day event has been organized as part of **104th Indian Science Congress (ISC-2017)** inaugurated by the Prime Minister Shri Narendra Modi.

What

1. A special plenary session titled “**Frontiers of Defense Research**” was organized on 04 January 2017 at the venue.
2. DRDO laboratories are participating at the expo to showcase **state-of-the-art military systems and technologies** at the DRDO Pavilion which narrate the saga of Self-reliance & National Pride with the “**Make in India**” spirit.
3. Star attractions of the outdoor exhibits include the **Long Range Surface-to-Surface Ballistic Missile Agni-5**, Akash Weapon System, Shaurya Missile, the model of the Brahmos missile, Remotely Operated Vehicle Daksh Robot etc.
4. Indoor exhibits include models of AEW&C, LCA Tejas, Rustom UAV, the Advanced light-weight Torpedo (TAL), Multi-mode Hand Grenade, NBC Suit, Anti-mine Boots, Micro Wave Power Module, S-Band MSS Terminal, Integrated Multi Function Sight (IMFS), Preemptor System, various Life Sciences Products including Bukhari-the heating system, Alocal Cream, Ready-to-Eat Packaged Foods, Juices etc.
5. DRDO pavilion has been a major attraction at the Pride of India Expo amongst visitors & students.

FIRST SQUADRON OF RAFALE FIGHTER JETS IN BENGAL

India will base its **first squadron of Rafale fighter jets**, which are also capable of delivering nuclear weapons, in the eastern sector as part of the overall policy to gradually build nuclear as well as conventional deterrence against China.

What

1. **Sukhoi-30MKI fighters already operating from Tezpur and Chabua in Assam**, the IAF has now finalised plans for the first 18 Rafales to be stationed at the Hasimara airbase in Bengal from late-2019.
2. This comes at a time when India is also conducting final trials of the **nuclear-capable Agni-IV and Agni-V ballistic missiles** after the Strategic Forces Command inducted the AgniIII a couple of years ago.
3. Under the Rs 59,000 crore (7.87 billion euro) deal inked with **France in September last year, the IAF** will get 36 Rafales in batches by mid-2022 or so.
4. 14 India-specific requirements, including the capability for “cold start” from high-altitude regions, the Rafale packs quite a punch with its ability to carry 9.3-tonne of weapons and simultaneously perform both air defence and ground attack missions.
5. The IAF also activated the **advance landing ground (ALG) at Tuting**, in Arunachal's Upper Siang district, just 10 days ago.
6. The **Panagarh base in Bengal** is also set to get its six C-130J Super Hercules aircraft. Panagarh, of course, is also going to be the headquarter of the Army's new 17 Mountain Strike Corps being raised with two high-altitude infantry divisions, apart from other armoured, artillery, air defence and engineer brigades spread from Ladakh to Arunachal.

INTERNATIONAL

INDIA, PAKISTAN EXCHANGE NUCLEAR FACILITIES

India and Pakistan exchanged for a list of their nuclear installations under a bilateral agreement that prohibits them from attacking each other's atomic facilities.

What

1. The agreement, which was signed on **December 31, 1988** and **entered into force on January 27, 1991**.
2. The two countries inform each other of nuclear installations and facilities to be covered under the agreement on **January 1 of every calendar year**.
3. This is the **26th consecutive exchange of such list between the two countries**, the first one having taken place on January 1, 1992.
4. The two countries also exchanged, through diplomatic channels simultaneously at New Delhi and Islamabad, the lists of nationals (including civil prisoners and fishermen) of each country lodged in their respective jails as per provisions of the Agreement on Consular Access.
5. The agreement on consular access, signed between the two countries **on May 21, 2008**, provides for exchanging a comprehensive list of nationals of each country lodged in their jails twice each year—on January 1 and July 1.

INDIA-CERT SIGNS AN MOU WITH US-CERT

India and USA have signed a **Memorandum of Understanding (MoU)** between the **Indian Computer Emergency Response Team (CERT- In)** under the Ministry of Electronics and Information technology of the Government of India and the Department of Homeland Security, Government of the United States of America on cooperation in the field of cyber security. The MoU was signed by Smt. Aruna Sundararajan, Secretary, Ministry of Electronics and Information Technology and Mr. Richard Verma, US Ambassador to India.

What

1. **The MoU intends to promote closer co-operation and the exchange of information pertaining to the Cyber Security** in accordance with the relevant laws, rules and regulations of each economy and this Memorandum of Understanding (MoU) and on the basis of equality, reciprocity and mutual benefit.
2. Earlier **United States and India signed an MoU on 19th July, 2011** to promote a closer cooperation and timely exchange of information between the organizations of their respective Governments responsible for Cyber Security. Since, 19.07.2011 regular interactions between CERTS-In and US CERT are taking place to share the information and discuss cyber security related issues.
3. In continuation to the cooperation in cyber security areas both have renewed the MOU.

CBDT INKS BAPA

The **Central Board of Direct Taxes (CBDT)** has entered into a **Bilateral Advance Pricing Agreement (BAPA)** on the Indian subsidiary of a **Japanese trading company**. Earlier, CBDT also had modified an existing Bilateral APA with another Indian subsidiary of a Japanese company to include rollback provisions. Thus, total **three BAPAs have been signed by CBDT** with Indian subsidiaries of Japanese companies all including rollbacks. With this total number of BAPAs entered into by CBDT are now **eight**.

About APA

1. The APA Scheme was **introduced in the Income Tax (IT) Act, 1961** in 2012 and the provisions related to rollback were introduced in 2014.
2. It strengthens Government's mission of fostering a non-adversarial tax regime.
3. It endeavours to provide certainty to taxpayers in the domain of transfer pricing by specifying the methods of pricing and setting the prices of international transactions in advance.
4. Under BAPA, **certainty in tax treatment is provided for the next 5 years** while rollback provides dispute redressal for a maximum of four past years preceding APA years.

UNSC ENDORSES SYRIA CEASEFIRE

The **United Nations Security Council** welcomed a **ceasefire in the Syrian civil war**, but rebel groups threatened to abandon the two-day-old truce if violations persisted. A resolution welcoming the ceasefire, the third truce this year seeking to end **nearly six years of war**, was adopted unanimously by the **15-member Council**, meeting in New York.

What

1. Factions are belonging to the **Free Syrian Army (FSA)** a loose alliance of militias excluding more radical Islamist groups.
2. The ceasefire deal is the **first not to involve the United States or the United Nations**.
3. The Security Council welcomed the truce despite being urged by the FSA factions not to endorse the deal until the Syrian government and Russia had shown they would respect it.
4. In particular, Turkey is trying to push back Kurdish forces and the jihadist Islamic State, both excluded from the deal, from areas south of its border.
5. The position of other Islamist groups such as Jabhat Fatehal-Sham and Ahrar al-Sham with respect to the ceasefire is unclear; both have criticised it.

PAKISTAN TEST-FIRES FIRST SUB-LAUNCHED CRUISE MISSILE

Pakistan successfully test-fired submarine-launched **cruise missile Babur-III** and claimed the missile has been developed indigenously. The range of the missile is **450 km**. The development came less than a month after Pakistan conducted a successful test of an enhanced version of Babur cruise missile.

Salient features

1. The missile has a range of **450 km**.
2. It has underwater controlled propulsion and advanced guidance and navigation features, duly augmented by **Global Navigation, Terrain and Scene Matching Systems**.
3. The missile features terrain hugging and sea skimming flight capabilities to evade hostile radars and air defenses, in addition to certain stealth technologies, in an emerging regional Ballistic Missile Defence (BMD) environment
4. The missile, in land-attack mode, is capable of delivering various types of payloads and will provide Pakistan with a Credible Second Strike Capability, augmenting deterrence.

MoU FOR COLLABORATION IN THIRD WORLD COUNTRIES

India and the US have signed an MoU to collaborate in the fields of developmental activities and **aid in third world countries**. The MoU has been signed between the **Millennium Challenge Corporation (MCC)**, and **Development Partnership Administration (DPA)** of the Ministry of External Affairs of India. MCC is a US agency providing eligible countries with grants to fund country-led solutions for reducing poverty through **sustainable economic growth**. DPA looks after implementation of India's development cooperation programmes with partner countries.

What

1. As per the MoU signed, the two countries would collaborate on exchange of information and experience in sectors or issues pertaining to project development or implementation in partner countries.
2. India and US might also **provide advisory or technical assistance to third countries** regarding **sector policy reform, project and sector management, project implementation, and economic growth promotion strategies in relevant sectors**.
3. The MoU also facilitates officials of two countries to site visits to cross-border or other relevant projects, and capacity building of partner countries. India and US, the MoU said, share a vision of reducing poverty globally through sustainable economic growth.
4. Based on this shared vision, they intend to cooperate with the goal of advancing their mutual interests to strengthen regional integration and connectivity, particularly in the areas of energy, trade, and investment.

ECONOMY

GUIDANCE ON BOARD EVALUATION ISSUED

Market regulator **Securities and Exchange Board of India (Sebi)** issued detailed guidance note for **listed companies on board evaluation**. Under this, companies have to evaluate the performance of the board as a whole, individual director and various committees of the board.

What

1. The reason for the guidance note is **to create awareness of the concept of board evaluation in India** is at a "nascent stage", Sebi said adding that a large number of listed entities don't have much clarity on the processes.
2. **Board evaluation is voluntary for companies under the new Companies Act** and the Sebi listing regulations.
3. Sebi has delved upon the role and responsibilities of stakeholders and independent directors.

FIRST AUCTION OF WIND POWER PROJECTS

The county would have its **first auction of wind power projects**, but with no surety on power purchase and lack of evacuation infrastructure. Developers are likely to hedge risks by quoting higher tariff. **Projects of 1,000 Mw will go under hammer**, but there is no surety of off-take — the Centre has not tied up with any state for power sale. Some of the leading companies in the sector — **Suzlon, Hero Future Energies, Sembcorp India, ReNew Power, Gamesa India** — are likely to participate in the bidding.

What

1. Till now, **wind power projects were offered under the feed-in tariff model**, with states signing for power procurement with the developer for a singular tariff for 25 years.
2. **Solar Energy Corporation of India (SECI)** has been designated as the nodal agency for implementing this scheme.
3. **Power Trading Corporation of India has been selected by SECI for purchase and sale of wind power** after entering into a power-purchase agreement for 25 years with the successful bidders.
4. The responsibility of getting the **inter-state transmission system (ISTS)** connectivity and **long-term access (LTA)** lie entirely with the wind project developer.

AXIS BANK RETAINS TOP SLOT

Axis Bank has left behind large foreign banks, known for **their investment banking skills**, as it has retained the top investment banking rank in the past 10 consecutive years. With its market share surging to **20.4%**, the private sector lender has cut 327 deals worth 81,100 crore that companies raised by selling bonds in 2016, according to Bloomberg debt market league table.

What

1. **HDFC Bank, State Bank of India** were other top two banks in the Bloomberg 2016 league table beating global biggies.
2. Both the institutions have collectively done deals, which are marginally higher than Axis Bank alone.
3. **India bond market is gradually emerging as a potential source of long-term funding** for domestic companies seeking long-term funds.
4. One of the innovative deals was the **Oriental Nagpur Betul Highway deal**.
5. The company, a subsidiary of Oriental Structural Engineers Private, has raised 2,786 crore through its maiden bond sales, offering 8.28% and 8.78% in two tranches. **National Highway Authority of India has awarded them the project with 20 years of concession period**.
6. Maturities range from six months to 13.5 years with fixed annuity repayments. Axis Bank was the sole arranger.

7. **Barclays, HSBC, Standard Chartered and Deutsche Bank ranked 13th, 15th, 18th and 23rd respectively**, with all of them losing market share in the range of 1.6-4%.
8. All the top three arrangers including Axis Bank, HDFC Bank and SBI have increased their market share by 3-5%.
9. Axis Bank clenched nearly 5% market over the year, the sharpest rise.

FIRST CSO NATIONAL INCOME

India's per capita income, a gauge for measuring living standard, is estimated to cross Rs 1 lakh in 2016-17, up from Rs 93,293 in the previous financial year. As per the '**First Advance Estimates of National Income, 2016-17**' released by the **Central Statistics Office (CSO)**, the per capita net national income during 2016-17 is "estimated to be Rs 1,03,007" at current prices.

What

1. This is higher by **10.4 per cent compared to Rs 93,293 during 2015-16**.
2. The per capita income in real terms (at 2011-12 prices) during 2016-17 is likely to attain a level of Rs 81,805 as compared to Rs 77,435 for the year 2015-16.
3. The growth rate in per capita income is estimated at 5.6 per cent during 2016-17, as against 6.2 per cent in the previous year.
4. The Central Statistics Office said India's GDP is expected to slowdown to 7.1 per cent during 2016-17 from 7.6 per cent in the previous fiscal mainly due to slump in manufacturing, mining and construction activities.
5. The CSO projections on national income are in line with the Reserve Bank's estimates, which too had lowered the GDP growth prospects to 7.1 per cent.

GOVT RELAXES COMPANIES ACT NORMS FOR IFSC

The central government has granted certain exemptions to private companies being set up in **international financial services centres (IFSC)** from the norms of the Companies Act 2013. An IFSC caters to customers outside the jurisdiction of the domestic economy. IFSCs are set up in special economic zones, and deal with flows of finance, financial products and services across borders.

Some of the rules relaxed or modified for IFSC firms are:

1. A specified **IFSC private company will only be limited by shares**, according to the notification.
2. All such companies have to suffix International Financial Services Centres or IFSC in their names.
3. Companies also have relaxation for filing their documents under the exemptions—the time given for submitting verification for registered addresses to the registrar of companies (ROC) for IFSC companies will be sixty days instead of thirty, filing copies of every resolution and agreement with the ROC can be done in sixty days.
4. For IFSC companies, an officer or any other person authorized by the company can authenticate documents and other contracts (under the Companies Act, for all other companies, only an officer of the company can do so).
5. IFSC companies can make private placement offers and will not be restricted by earlier offers which haven't been completed or withdrawn.
6. An extract of the annual return of the company will not have to be included in the board's report. IFSC companies will not have to comply with the secretarial standards prescribed by the Institute of Company Secretaries of India.
7. IFSC companies only need internal audit if their articles of association provide for the same.
8. IFSC firms can make investments through more than two investment companies.

INDIAN FIRMS IN GLOBAL RANKING

The upheaval in stock market has taken a toll on the global rankings of Indian companies, with **14 of them present in a new list of world's 500 most valued firms** together seeing an erosion of about \$150 billion in their market value in the first three months of this year. While **13 of the 14 present in the latest list have taken a dip in their rankings**, four

companies -- Mukesh Ambani-led Reliance Petroleum, state-run Indian Oil Corp (IOC), realty major Unitech and housing loan giant HDFC -- have completely moved out of the league.

What

1. The **latest FT Global 500 list was published by the UK business daily Financial Times over this weekend**, is based on the companies' market capitalisation as on March 31, 2008. The previous rankings were based on December 2007-end figures.
2. **Reliance Industries, flagship company of India's biggest corporate house Mukesh Ambani group**, is top ranked 80th in the latest list, topped by the US energy giant ExxonMobil.
3. Except for tobacco-to-consumer goods major ITC, ranked 484th, all other Indian companies have seen their rankings decline from the previous list.
4. Together, the market value of these 14 firms has dropped by about \$ 150 billion since December last year and currently stands at about \$ 440 billion.
5. **There were 17 Indian companies in the previous list** and had a total market capitalisation of about \$ 590 billion.
6. In the country-wise ranking based on total market cap of all their companies present in the list, India has been placed 15th. The US is at the top with 169 companies worth a total \$ 9.6 trillion, followed by UK, China, France and Japan.
7. Other countries ranked ahead of India include Germany, Canada, Switzerland, Russia, Spain, Brazil, Hong Kong, Italy and Australia.
8. In terms of the number of companies present in the list, India and Russia are jointly ranked ninth after the US (169), the UK (35), Japan (39), France (31), China (25), Canada (24) and Germany (22).
9. Among the Indian firms, RIL is followed by two state-run firms ONGC and NTPC at 148th and 206th positions respectively.
10. **While RIL has slipped 15 positions from its 65th rank in the previous list, ONGC and NTPC have also moved down from their 115th and 163rd ranks previously.**
11. Other Indian firms include Sunil Mittal-led telecom giant Bharti Airtel at 218th (down from 193), realty major DLF at 329th (down from 195) and Anil Ambani-led Reliance Comm at 350th position (down from 252).

ANTI-AVOIDANCE TAX RULE TO KICK IN

Tax anti-avoidance rule GAAR will kick in from April 1, 2017, the tax department said. In its 2016 year-end review, the Central Board of Direct Taxes, which is the apex policy making body of the I-T department, listed its major achievements.

What

1. **Major achievements of CBDT in the current financial year 2016-17 so far include**, among others, Enactment of the **Benami Transactions (Prohibition) Amendment Act, 2016**, Implementation of The Direct Tax Dispute Resolution Scheme, 2016 and of GAAR from Assessment Year 2018-19.
2. In May last year, CBDT had started consultation with stakeholders asking them to give their views where they require clarity before GAAR is implemented.
3. **General Anti-Avoidance Rule (GAAR) was part of the 2012-13 Budget speech** of the then Finance Minister Pranab Mukherjee to check tax evasion and avoidance.
4. However, its implementation was repeatedly postponed because of the apprehensions expressed by foreign investors.
5. **GAAR, which was originally to be implemented from April 1, 2014**, will now come into effect from April 1, 2017 (Assessment Year 2018-19).
6. It contains provision allowing the government to prospectively tax overseas deals involving local assets.
7. There have been fears that the government may use it to target P-Notes. Through the use of GAAR, government may try to tax P-Notes as indirect investments, which could attract a tax rate of up to 15 per cent, experts say.
8. **To avoid tax altogether under GAAR, an investor may have to prove that P-Notes were not set up specifically to avoid paying taxes.**

INDIA'S FIRST STUDENT STARTUP AND INNOVATION POLICY

Gujarat government launched **India's first student startup and innovation policy** with an aim to provide Rs 200 crore in the form of grants to ideas developed by students. The policy aims to support over 1,000 innovations per year in the state and create pre-incubation support in all universities of the state.

What

1. The policy will encourage the students from the state to undertake innovative projects related to **society, industries, and community** instead of conventional academic projects.
2. It will support **student-led startups and innovations** as well as create an Innovation and Pre-incubation Ecosystem Support (IPIES) across all universities of the state.
3. Under the pre-incubation support, help will be provided to students to convert their ideas from **proof of concept (PoC)** upto minimum viable proto-type (MVP) and also providing support for patent filing.
4. Earlier in 2015, Gujarat Government had unveiled startup-assistant scheme, as part of Gujarat Industrial Policy and in 2016 also had launched Information Technology Startup Policy.

UN FAO REPORT ON WORLD FOOD PRICES

World food prices fell for a fifth straight year in 2016 as losses in cereals, meat and dairy outweighed rises in sugar and vegetable oils, the United Nations food agency said on 12 January 2017. Prices remained stable in December from the month before, according to the **Food and Agriculture Organisation's (FAO)** main food price index, which has edged up steadily after hitting a seven-year low in January.

What

1. The **full year 2016 logged a 1.5 per cent annual drop in the index**, which measures monthly changes for a basket of **cereals, oilseeds, dairy products, meat and sugar**.
2. December's reading of 171.8 points versus 171.9 points in November resulted from strong gains in vegetable oils and dairy largely offsetting falls; in sugar and meat, the FAO said.
3. **Sugar prices rose by about a third across the year**, despite an 8.6 per cent dip in December that mainly stemmed from a weaker Brazilian real against the dollar and an expected jump in production in Brazil's main sugarcane-growing region.
4. Cereal prices steadily declined during the year, ending **39 per cent below their 2011 peak**.
5. Vegetable oil prices reached their highest since July 2014 in December. Palm oil rose on low global inventory levels and tight supplies, while soy oil quotations were boosted by the prospect of rising use for biodiesel in North and South America.

INDIA'S FIRST INTERNATIONAL EXCHANGE

Prime Minister Narendra Modi inaugurated India's first international exchange **India INX** at the International Financial Service Centre (IFSC) of GIFT (Gujarat International Financial Tech) City **Gandhinagar, Gujarat**. India INX is a wholly-owned subsidiary of the **Bombay Stock Exchange (BSE)**. It will enable Indian firms to compete on equal footing with offshore firms.

What

1. India INX will **initially trade in equity derivatives, currency derivatives, commodity derivatives** including index and Stocks.
2. Subsequently, it will offer depository receipts and bonds once required infrastructure is ready.
3. **It will work for 22 hours in a day** working from sunrise to sunset i.e. starting when Japan exchanges begin and close when US markets end.
4. It will have **250 trading members including commodity** and overseas brokers.
5. India INX is one of the most advanced technology platforms with turnaround time of 4 seconds.

MSEI INTRODUCES TRADING IN SGB

Metropolitan Stock Exchange of India Ltd (MSEI) has introduced new contracts in **interest rate futures (IRF)** and trading in **sovereign gold bonds (SGB)**. The move is consistent with MSEI's approach of providing a rich and diversified product bouquet to market participants. The SGB will be available **under the equity capital market segment**. These are spot contracts with delivery based settlement and coupon of 2.75 per cent with tenure of eight years.

What

1. All six tranches of Sovereign Gold Bonds issued by **Reserve Bank of India (RBI) till date** are available for trading on MSEI platform for all categories of market participants.
2. These bonds provide an opportunity for retail investors to buy gold in small quantities of **1 gram in dematerialised form** and shall also aid in hedging against price fluctuations of gold.
3. The new (IRF) contracts are introduced for underlying **6.79 per cent** government of India bond maturing on December 2029 (under thirteen years maturity bucket) with effect from January 10, 2017.
4. MSEI is implementing business revival plan under which apart from product launches, the experience of trading on the exchange platform is being revamped. Recently, the exchange has introduced policies which make capital utilisation most efficient on MSEI platform for its members.
5. The transaction charges of the exchange for various segments have been re-calibrated to aid greater participation from members for improved liquidity and trade efficiency.

SCIENCE AND TECHNOLOGY

INDIA TO FINALLY GET E-EVIDENCE AUTHENTICATORS

From a case such as **Mumbai terror attack (Kasab video)** to **Bengaluru's New Year Eve fiasco** or the **Nira Radia tapes**, changing investigation techniques and increasing prevalence of technology has seen **electronic evidence (e-Evidence) become a crucial part of prosecution?** But probe agencies have for long had to battle defence arguments against veracity of such evidence, which has proved costly in many cases.

What

1. The decision comes **17 years after the Information Technology (IT) Act, 2000** came into existence and nine years after it was amended to mandate appointment of such examiners, in 2008. And notwithstanding the delay, experts say such examiners will aid in prosecution as it will now become easier to convince the court of the veracity of evidence.
2. The **Ministry of Electronics and Information Technology (MeitY)** has now put in place a scheme for notifying **"Examiners of Electronic Evidence"**.
3. Only Central government or state government agencies competent in the field of forensics can apply to be assessed and certified and the Centre will appoint these examiners after a three-stage assessment. No individual will be certified as an examiner.
4. The agencies will adhere to **international standards such as ISOIEC 1705** (a standard on general requirements for competence in testing and calibration) and **ISO IEC 27037** (a standard on IT security techniques, guidelines for identification, collection, acquisition and preservation of digital evidence).

NATIONAL CONFERENCE FOR E-GOVERNANCE BEGINS

The **20th Edition of the National Conference for e-Governance 2016-17** has started in Visakhapatnam, Andhra Pradesh. The theme of this year's conference is **'Internet of Things and e-Governance'** and will be covering newly evolving areas of e-Governance across five plenary sessions.

What

1. The conference has been organised by **Department of Electronics and Information Technology (DeitY)** and Department of Administrative Reforms and Public Grievances

(DARPG) in partnership with Information Technology, Electronics and Communication (ITE&C) Department, Andhra Pradesh Government.

2. It is being held on the premise of “**Minimum Government, Maximum Governance**”.
3. It will provide an opportunity for the public and private sector to discuss best practices and explore new areas of partnership in areas related to e-Governance by leveraging various technology initiatives.
4. It will conduct plenary session include ‘**Cyber Security policy for the future**’, ‘IoT and Data Analytics’, ‘Digital Connectivity to the last mile’ and ‘Andhra Pradesh – Leading 4.0 which refers to the 4th Industrial Revolution.

MEASLES-RUBELLA VACCINE TO ROLL OUT

Three years after the **national vaccine advisory body** recommended the introduction of the **measles-rubella vaccine (MR)** in the **Universal Immunisation Programme (UIP)**, the vaccine is all set to be introduced from next month in five states and Union territories as a part of the basket of preventive medications that every child born in India is entitled to.

What

1. From March, **Pneumococcal conjugate (pneumococcal pneumonia) vaccine** will also become a part of the UIP basket in three other states.
2. The UIP basket already has ten vaccines of which measles is one; once MR is introduced, monovalent measles will be discontinued. Both the new vaccines will be launched by Health Minister J P Nadda in separate programmes.
3. The MR vaccine will be **introduced in Goa, Karnataka, Lakshadweep, Puducherry and Tamil Nadu between February 3 and 4**; the pneumonia vaccine will be introduced in Himachal Pradesh and parts of Uttar Pradesh and Bihar from March 17.
4. **Commonly known as German Measles**, congenital rubella infection is believed to affect approximately 25,000 children born in India every year. Symptoms of the infection can include cataracts and deafness. It can also affect the heart and the brain.

ABOUT MEASLES-RUBELLA (MR)

1. The disease commonly known as **German measles** and is symptomatically similar to measles.
2. It can have devastating consequences if a pregnant mother is infected with it and the foetus may be born with incurable congenital anomalies. Symptoms of the infection can include cataracts and deafness.
3. It can also affect the **heart and the brain**. The congenital rubella infection is believed to affect approximately 25,000 children born in India every year.

About Universal Immunization Programme

1. It is a free vaccination program launched by the Union Government in **1985 against vaccine preventable diseases**.
2. It is currently one of the key areas under **National Rural Health Mission (NRHM)** since 2005.
3. The program consists of vaccination for 10 diseases- Tuberculosis, Diphtheria, Tetanus, Pertussis (whooping cough), Poliomyelitis, measles, Hepatitis B, Diarrhoea, Japanese Encephalitis and Pneumonia.

'SEZ INDIA' APP LAUNCHED

A Mobile app named “**SEZ India**” has been launched by the Commerce Secretary on 06.1.2017. SEZ Division, Department of Commerce under its broader e-Governance initiative i.e. **SEZ Online System**, has developed mobile app for **Special Economic Zones (SEZs)**. The App would help the SEZ Units and Developers to find information easily and track their transactions on SEZ Online System. Now the SEZ Developers & Units can file all their transactions digitally through SEZ Online system and track the status on the go through the SEZ India mobile app. The **app has four sections** i.e. **SEZ Information, SEZ Online Transaction, Trade Information, and Contact details**.

Salient Features

1. **SEZ information:** This is a **compendium of the SEZ Act, 2005**, SEZ Rules, 2006, MOCI Circulars, details of SEZs and Units etc. It gives up to date comprehensive details on all the above aspects.

2. **TRADE Information:** This provision gives access to important information / tools such as Foreign Trade Policy, Hand Book of procedure, Duty Calculator, Customs & Excise Notification and MEIS Rates.
3. **Contact Details:** We see that the contact details of all Development Commissioners Office, DGFT, DG System, DGCI & S and SEZ online.
4. **SEZ online Transaction:** This is a dynamic submenu that tracks the Bill of Entry / Shipping Bill processing status and also does verification. The app also helps the Importers / Exporters to track the status of 'Bill of Entry / Shipping Bill' integration and processing in the EDI system of the ICEGATE.

NEW WASP SPECIES DISCOVERED

A new species of wasp has been discovered from the **Western Ghats**, one of the **biodiversity hotspots of the country**. Muhamed Jafer Palot of Western Ghats Regional Centre (WGRC) of the **Zoological Survey of India (ZSI), Kozhikode**, said this wasp belonged to the sub-family of Eumeninae of the family Vespidae.

What

1. **They were harmless and made mud nests**, he said, adding the size of this new species of wasp was about 6 mm only.
2. This new species was so far recorded from **Malabar Wildlife Sanctuary, Aralam Wildlife Sanctuary**, Nilambur forests, and also from Muthappanpuzha of Kozhikode district.
3. Along with this new species, two other new species were spotted in the forests of Assam and Meghalaya, he said, adding with these discoveries, the total number of species of genus '**Parancistrocerus**' has been increased to three in Kerala and 11 in India.

Miscellaneous

JUSTICE JS KHEHAR SWORN IN AS CJI

Justice **Jagdish Singh Khehar** was sworn in as the **Chief Justice of India (CJI)**. Khehar was administered the oath of office by President Pranab Mukherjee at Rashtrapati Bhavan in New Delhi. He succeeded Justice Tirath Singh Thakur. He is the **44th CJI** and the first Sikh to hold the apex office. He would have tenure of little over seven months. He was the author of the judgment by a **five-judge constitution bench** that held "unconstitutional" the Constitution's 99th amendment paving way for the National Judicial Appointment Commission and **the National Judicial Appointment Commission Act, 2014**.

KEN-BETWA RIVER PROJECT RECEIVES ENVIRONMENT CLEARANCES

The **Ken-Betwa River** linking project has received formal environment, forest and tribal clearances. The project aims at **addressing water needs of dry swathes in Madhya Pradesh and Uttar Pradesh**. The Union Ministry of Water Resources, River Development & Ganga Rejuvenation is working out the funding pattern with NITI Aayog. The Ministry is pursuing NITI Aayog to change its funding pattern of Centre state share from **60:40** to 90:10 for the project as it is a special project.

What

1. It is **India's first river interlinking project** that will connect Ken River in Madhya Pradesh with the Betwa in Uttar Pradesh.
2. The project was **envisaged first in 1980** to transfer surplus river water to dry and arid areas of Bundelkhand region.
3. It will help irrigate an area of 6.35 lakh hectares annually in Bundelkhand region.

FORBES' SUPER ACHIEVERS LIST

Over 30 Indian origin **innovators, entrepreneurs and leaders** have been featured in the **2017 edition of Forbes' list of super achievers** under the age of 30 who seek to break

the status quo and transform the world. **The Forbes list has 30 game changers in 20 industries** including **healthcare, manufacturing, sports and finance**. The 600 in the list are “challenging the conventional wisdom and rewriting the rules for the next generation of entrepreneurs, entertainers, educators and more. They are passionate and formidable bunch, and for good reason. Their goal is nothing short of breaking the status quo and transforming the world.

What

1. The **list includes 27-year-old Vivek Kopparthi, co-founder of NeoLight** that has developed a phototherapy device that is portable for use at home for jaundice. The company is also working on a second tool to treat infant hypothermia.
2. **Prarthna Desai, 27**, left her Harvard graduate school programmes to use drones to get medication to people in the developing world. In her operations role at the healthcare company Zipline, she is leading efforts to integrate the medicine-delivery-by-drone service with the healthcare system in Rwanda.
3. **Shaun Patel, 28**, is the orthopaedic surgery chief resident at Harvard Medical School and has dozens of scientific publications in surgery journals. His company, OrthoNinja, aims to streamline communication between doctors by creating a mobile app that allows doctors to consult with one another.
4. **Rohan Suri, 17**, is the founder of Averia Health Solutions and has developed an improved concussion test.

UN REPORT ON E-WASTE

Electronic waste is rising sharply across Asia as higher incomes allow hundreds of millions of people to buy smartphones and other gadgets, with serious consequences for human health and the environment, according to a United Nations (UN) study released on 15 January 2017. So-called **e-waste in Asia has jumped 63 per cent in five years**, the report by the UN University said, as it warned of a need for most nations across the region to improve recycling and disposal methods.

What

1. For many countries that already **lack the infrastructure for environmentally sound e-waste management**, the increasing volumes are a cause for concern, the report's co-author and head of the UN University's Sustainable Cycles Programme.
2. For many years, China and some other parts of Asia have been a dumping ground for discarded electronics from the developed world, recycling the waste in often unsafe but ultracheap backyard factories.
3. **Asia has rapidly emerged as a major source of electronic waste**, due to increasingly affluent consumers buying items such as phones, tablets, refrigerators, personal computers and televisions.
4. Per capita, the worst-offending economy in the region was Hong Kong, with each person in the Chinese territory generating an average of 21.7 kilograms (47.8 pounds) of e-waste in 2015.
5. **Singapore and Taiwan were also big e-waste dumpers**, with just over 19 kilograms per person generated in 2015, according to the study.
6. **Cambodia, Vietnam and the Philippines were among the lowest e-waste generators** with an average of about one kilogram for each person.
7. Acids that are used to separate the metals in the electronic products are a particular concern, with inhalation or exposure to them causing serious health problems.

IEEFA REPORT

China's overseas investment in renewable energy projects jumped last year by 60 per cent to a record USD 32 billion, marking its leadership in the global market for clean energy, a report said. In 2016, **China finalised 11 foreign deals worth more than a billion dollars each**, and is expected to pick up the pace this year, according to the **Institute for Energy Economics and Financial Analysis (IEEFA)**.

What

1. It would sink at least USD 361 billion into renewables by 2020, key to the country's transition away from polluting coal power.
2. **Overseas investments last year ranged from lithium battery makers** in Australia and Chile to an electricity distribution deal in Brazil and the building of a solar cell factory in Vietnam.
3. **China now owns five of the six largest solar module manufacturing firms in the world**, according to the report.
4. The **US is already slipping well behind China in the race to secure a larger share of the booming clean energy market**.
5. In 2016, China boosted its overseas influence by establishing the Asia Infrastructure Investment Bank. It is also funnelling billions into the New Development Bank, set up by the BRICS nations Brazil, Russia, India, China and South Africa.

WORLD HINDI DAY

The **World Hindi Day is observed annually on 10 January**. On this occasion, Union Ministry of External Affairs (MEA) has conducted special events to spread the greatness of the language through its missions abroad. Besides, the Department of Official Language (Rajbhasha) also organises several events to mark this day.

Background

1. The **World Hindi Day was first observed on 10 January 2006**.
2. It is in addition to present National Hindi Divas which is being observed annually on 14 September. It should be noted that World Hindi Day is the promotion of the language at the global stage.
3. National Hindi Divas is being observed across the country at national level. The National Hindi Divas is observed to mark adaptation of **Hindi written in Devanagari script as the Official Language of the Union by the Constituent Assembly on 14 September 1949**.

About Hindi

1. It is the **fourth most spoken language of the world**.
2. It is mother tongue of around 258 million people across the world.
3. The provision of Hindi as official Language of the Union has been mentioned in Article 120, Article 210 and Article 343, 344 and from 348 to 351.
4. The Pacific island country, Fiji also has adopted Hindi as an official language.

H1B VISA REFORM TO INCREASE IT FIRMS

IT firms' margins will come under more pressure if the US government clears the H1B visa reform Bill — '**Protect and Grow American Jobs Act**', rating agency **India Ratings and Research (Ind-Ra)** said. The employee cost of IT companies has increased over the past eight quarters and impacted margins negatively. The passage of the Bill would **impact IT companies operations and might lead to further increase in the onshore efforts** and subcontracting expenses.

What

1. The key proposal in the Bill is **to increase the salary of H1B visa holder to USD 100,000** (Rs 66 lakh) from USD 60,000 per annum and the cessation of an exemption of having a master's degree.
2. The cash cushion and low debt levels that IT companies enjoy however will mean the squeeze on margins will be credit neutral.
3. The **salary level that has been proposed is significantly higher** than the average employee cost of Indian IT companies of under Rs 1 million (ranges between Rs 3 lakh to Rs 5 million).
4. **Indian IT companies generate around 55-60 per cent of the revenue from the US**. The onsite proportion of revenue exceeds the offshore portion and the subcontracting expenses as a percentage of revenue has increased by around 50-100 bps over the last eight quarters for the top IT companies.

5. **The US starts accepting the visa application under H1B typically from 1 April every year** and issues around 65,000 visas to highly skilled professionals.

TATAS MOVE OUT OF WORLD'S TOP-50 INNOVATIVE LIST

Apple, Google and Tesla on 12 January 2017 retained their positions as the **world's most innovative companies** on an annual top-50 list, even as Tatas have moved out after being the only Indian entity there for two years.

What

1. The **latest list for 2016**, released on 12 January 2017 by the Boston Consulting Group, has Apple, Google, Tesla, Microsoft and Amazon in the top five positions.
2. Among these, the top-four have retained their positions while Amazon has replaced Samsung on the fifth slot.
3. There is no Indian entity on the latest list, though the **ranking for 2015 had Tata Motors at 26th place**.
4. Before that, another Tata group firm TCS was **ranked 43rd in 2014 list**.
5. The 2016 list has 34 companies from the US, 10 from Europe and 6 from Asia.
6. The top 10 most innovative companies for 2016 include, **Netflix at the 6th place, Samsung Group (7th), Toyota (8th), Facebook (9th) and IBM (10th)**.
7. **General Electric was ranked in the 15th place** followed by **Daimler (16th), Uber 17th** and Airbnb was placed at the 21st rank.
8. The coveted list revealed the 50 companies that global innovation executives ranked as the most innovative and explores the increasing imperative for companies to bring in innovations from outside.

COMMITTEE TO FRAME NATIONAL SPORTS CODE

The Union Sports Ministry has constituted committee to frame **comprehensive National Sports Development Code** across sports disciplines. It will be headed by **Injeti Srinivas**, Sports Secretary. The committee will study the existing sports governance frame work, issues relating to sports governance in the country, recent developments related to sports governance. It will also study court judgments and international best practices and make recommendations on bringing out a comprehensive code across sports disciplines.

INDIA'S FIRST MADAME TUSSAUDS MUSEUM

World famous wax museum Madame Tussauds is set to debut in India in June, with Prime Minister Narendra Modi, Bollywood megastar Amitabh Bachchan and American pop star Lady Gaga's statues as some of the star attractions.

What

1. The **first India branch of the museum will be in the capital New Delhi**.
2. The museum, renowned for the creation of detailed and lifelike wax figures, will house statues of prominent figures from the world of sports, Bollywood, politics.
3. Amitabh is likely to attend the launch of the museum, which will be spread across the **first and second floors of the Regal Cinema complex in Connaught Place**.
4. This is the **23rd branch of Madame Tussauds across the world**, and Merlin Entertainment is looking forward to a red carpet welcome.

NATIONAL YOUTH DAY

The **National Youth Day is observed every year on 12 January** to mark the birth anniversary of social reformer, philosopher and thinker **Swami Vivekananda**. This day seeks to propagate the philosophy and the ideals of **Swami Vivekananda** for which he lived and worked.

What

1. Swami Vivekananda was born as **Narendranath Dutta** on 12 January 1863 and died on 4 July 1902.
2. He and was chief disciple of the **19th century saint Ramakrishna Paramhansa**.

3. He was one of the most prominent figures of India who introduced Indian philosophies of Vedanta and Yoga to the “**Western**” World.
4. He is credited with raising interfaith awareness, bringing Hinduism to the status of a major world religion during the late 19th century.
5. He is also considered as the major force in the revival of Hinduism in India, and contributed to the concept of nationalism in colonial India.

SPACEX ROCKET EXPLOSION

SpaceX plans to blast off a rocket for the first time since a **launch pad explosion** in the fall sidetracked the ambitious flight plans of company founder and entrepreneur Elon Musk. A **20-story tall Falcon 9 rocket** is slated to launch from California’s Vandenberg Air Force Base to put into orbit **10 satellites for Iridium Communications Inc**, which will use them to enhance mobile voice and data relay capabilities.

What

1. The mission will test changes implemented by **Space Exploration Technologies Corp, known as SpaceX**, after another Falcon 9 exploded on a launch pad in Florida in September during a routine preflight test.
2. Accident investigators determined that a canister of helium burst inside the rocket’s second-stage liquid oxygen tank, triggering the explosion. The canister is being redesigned, but until then SpaceX is addressing the issue by modifying its fueling procedures.
3. The explosion destroyed a \$62 million SpaceX booster and a \$200 million Israeli communications satellite that it was to put into orbit two days later. The accident clouded the company’s aggressive agenda, which includes beginning to ferry U.S. astronauts into space next year, when it also plans to make its first voyage to Mars.
4. The flight would begin to clear a logjam of **more than 70 missions**, worth more than \$10 billion, awaiting flights on SpaceX Falcon rockets, which last flew in August, SpaceX said.
5. **The launch is the first in a seven-flight contract** with Iridium worth \$468.1 million.
6. **SpaceX aims to launch 27 rockets in 2017**, more than triple the eight flights the privately held firm managed in 2016.

MOON IS OLDER THAN THOUGHT

The **Moon is at least 4.51 billion years old - up to 140 million years** older than previously thought, according to a **new study of minerals called zircons** brought back from the lunar body to the Earth by the **Apollo 14 mission in 1971**. The Moon’s age has been a hotly debated topic, even though scientists have tried to settle the question over many years and using a wide range of scientific techniques.

What

1. The Moon was formed by a violent, head-on collision between the early Earth and a “**planetary embryo**” called **Theia**.
2. The new study would mean that Moon formed “only” **about 60 million years after the birth of the solar system**, providing critical information for astronomers and planetary scientists who seek to understand the early evolution of the Earth and our solar system.
3. “**Zircons are nature’s best clocks**. They are the best mineral in preserving geological history and revealing where they originated.
4. The **Earth’s collision with Theia** created a liquefied Moon, which then solidified.
5. Scientists believe most of the Moon’s surface was covered with magma right after its formation.
6. The **uranium-lead measurements reveal** when the zircons first appeared in the Moon’s initial magma ocean, which later cooled down and formed the Moon’s mantle and crust; the lutetium-hafnium measurements reveal when its magma formed, which happened earlier.

7. Previous studies concluded the Moon's age based on Moon rocks that had been contaminated by multiple collisions.

FOUR NEW BATTALIONS IN NDRF

Country's premier disaster response and rescue force **National Disaster Response Force (NDRF)** is likely to raise **four new battalions with around 4,000 personnel** as the Home Ministry is finalising a plan to this effect. The four new battalions of the National Disaster Response Force (NDRF) will be stationed in **Delhi, Jammu and Kashmir, Uttarakhand and Himachal Pradesh.**

What

1. The Home Ministry is **finalising the plan for raising the new battalions** and a proposal is expected to be sent to the Union Cabinet for its approval soon, a Home Ministry official said.
2. The NDRF will start the process of hiring around 4,000 personnel (1,000 personnel in each battalion).
3. **The disaster response force currently has 12 battalions stationed** in different parts of the country for easy deployment during natural disasters and other emergencies.
4. The force is specially **trained to deal with calamities like earthquakes, floods, cyclones and man-made disasters.**
5. The NDRF had earned laurels for its services during floods in Uttarakhand, Jammu and Kashmir, Assam, Tamil Nadu; cyclone in Odisha and Andhra Pradesh and earthquake in Nepal.
6. **A team of NDRF was even sent to Japan to help authorities there in handling the Tsunami a few years ago.**

ARMY DAY CELEBRATED

Every year Indian Army celebrates **15th January as 'Army Day'** to commemorate the day when General (later Field Marshal) **K.M Carriappa** took over the command of Army from **General Sir F.R.R Bucher, the last British Commander-in-Chief in 1949** and became the **first Commander-in-Chief of Indian Army post Independence.**

What

1. **The Indian Army is regarded as one of the most credible institutions and Instrument of National Power.**
2. Indian Army operates in the most inhospitable conditions with resolve and pride. It has acquitted itself extremely creditably in internal security and counter-insurgency operations and has extended invaluable aid to civil authorities in disaster management and maintenance of law and order.
3. Earlier in the day, wreaths were laid at Amar Jawan Jyoti, India Gate by the three Service Chiefs to commemorate the Army Day.

DELHI DECLARED FREE OF BIRD FLU

National Capital Territory (NCT) of Delhi was declared free from **bird flu (H5N8 avian influenza)** after consecutive samples collected at 15 days' intervals from the last positive results tested negative. In October 2016, cases of mortality among the birds due to H5N8 avian influenza were reported in **National Zoological Park, Delhi NCR.**

What

1. Avian influenza, commonly called bird flu is an infectious viral disease of birds caused by strains of the influenza virus that have evolved to be specially adapted to enter avian cells.
2. It is an **infectious viral disease of birds** and can sometimes spread to domestic poultry and cause large-scale outbreaks of serious disease.
3. There are three main types of influenza: A, B, and C. Influenza viruses are further classified by analyzing two proteins on surface of virus, hemagglutinin (H) and neuraminidase (N).