My Notes....

NATIONAL

Country's first unmanned tank

Defence Research and Development Organisation (DRDO) has developed an unmanned, remotely operated **tank which has three variants -** surveillance, mine detection and reconnaissance in areas with nuclear and bio threats. **It is called Muntra**. Though developed and tested for the Army by **Combat Vehicles Research and Development Establishment (CVRDE) in Avadi**, paramilitary has expressed interest to use them at Naxal-hit areas. That will require a few modifications. The two remotely operated vehicles designed like an armoured tank were on display at an exhibition - **Science for Soldiers - organised by DRDO as a tribute to former President APJ Abdul Kalam at CVRDe in Avadi**.

What

1. **Muntra-S is the country's first tracked unmanned ground vehicle** developed for unmanned surveillance missions while **Muntra-M is for detecting mines** and **Muntra-N is for operation in areas** where there is a nuclear radiation or bio weapon risk.

2. The vehicle has been tested and **validated at Mahajan field firing range in Rajasthan under dusty desert conditions** where temperatures touched 52 C.

3. Army comfortably tele-operated the vehicle. It has surveillance radar, an integrated camera along with laser range finder which can be used to spy on ground target 15km away - may be a crawling men or heavy vehicles.

4. DRDO was working on **installing AWAC (Airborne Early Warning and Control System)** on an A330 aircraft. The system is now perfected for use on a smaller Embraer plane.

Flashpoint
1. Muntra-S is the country's first tracked unmanned ground vehicle developed for unmanned surveillance missions
2. Muntra-M is for detecting mines
3. Muntra-N is for operation in areas where there is a nuclear radiation or bio weapon risk

UN nuclear treaty not binding India

India on 18 July 2017 it was not a party to a **treaty recently adopted by 122 countries at a United Nations conference to prohibit nuclear weapons**. The Ministry of External Affairs issued a statement in New Delhi to clarify that India had not participated in the negotiations on a treaty on the **prohibition of nuclear weapons**, which had been concluded at a UN conference in New York on July 7.

What

1. **The treaty was the first multilateral instrument for nuclear disarmament** to have been negotiated in 20 years.

2. India, therefore, **cannot be a party to the treaty**, and so shall not be bound by any of the obligations that may arise from it.

3. India believes that this treaty in no way constitutes or contributes to the development of **any customary international law**.

4. **The treaty was adopted by a vote of 122 in favour to one against with one**. The Netherlands voted against the treaty, while Singapore abstained.

5. India and other nuclear-armed nations, United States, Russia, United Kingdom, China, France, Pakistan, North Korea and Israel, had not participated in the negotiations for the treaty.

6. **The treaty will prohibit a full range of nuclear-weapon-related activities**, such as undertaking to develop, test, produce, manufacture, acquire, possess or stockpile nuclear weapons or other nuclear explosive devices, as well as the use or threat of use of these weapons.

7. **The treaty was negotiated in accordance with the UN General Assembly Resolution 71/258 adopted on December 23, 2016**.

8. India had abstained on the resolution, as it had not been convinced that the proposed UN conference in 2017 convened under UN General Assembly rules of procedure to negotiate a treaty for prohibiting nuclear weapons could "address the longstanding expectation of the international community for a comprehensive instrument on nuclear disarmament".

9. India had argued on March 21 this year that the right place to negotiate such a treaty would be **Geneva-based Confernnce of Disarmament**, which had been set up by the international community in 1979 to negotiate multilateral arms control and disarmament agreements.

10. **India supports the commencement of negotiations on a comprehensive Nuclear Weapons Convention in the Conference on Disarmament**, which is the world's single multilateral disarmament negotiation forum working on the basis of consensus.

11. The Treaty on the Prohibition of Nuclear Weapons will be open for signature to all nations at the UN Headquarters in New York on September 20, and enter into force 90 days after it had been ratified by at least 50 countries.

Flashpoint
1. All nuclear weapons countries skipped the talks
2. India maintained that the Geneva-based Conference on Disarmament is the single multilateral disarmament negotiation forum
3. US, UK and France in a joint statement said the initiative disregards the realities of the international security environment

Report on SDG in UN

India has presented its national review report on the implementation of the **Sustainable Development Goals (SDGs) to the UN**, underscoring that as the fastest growing major economy it is "**uniquely placed**" to deliver on its commitments. India's '**Voluntary National Review Report on Implementation of Sustainable Development Goals**' was presented by NITI Aayog Vice Chairman Arvind Panagariya at the **United Nations high-level political forum on sustainable development in 2017**.

What

1. The Sustainable Development Goals are, thus, **part and parcel of the country's longstanding tradition and heritage**," Panagariya said in the report's opening statement.

2. The **report details various measures and programmes** being implemented across India towards achieving the core objectives of the **17 ambitious global goals**, including poverty eradication, economic growth, ending hunger and achieving food security, gender equality, promoting inclusive and sustainable industrialisation and climate action.

3. The programmes highlighted in the report are the '**Mahatma Gandhi National Rural Employment Guarantee Act**', '**Beti Bachao Beti Padhao**', '**Sagarmala**', '**Clean India**' campaign and the **Aadhaar Act**.

4. As the fastest growing major economy of the world, today, **India is uniquely placed to deliver on its commitments to inclusive and sustainable development**. Externally, the country has played a key role in shaping the SDGs and ensuring the balance among its three pillars – **economic, social and environmental**. Internally, it has launched many programmes to make progress towards these goals, the report said.

5. India said **it will continue to pursue the implementation of the SDG agenda** through close collaboration between the national and sub-national governments as well as active participation of all other relevant stakeholders.

6. Bi-annual reviews will be conducted with the state governments for identifying good practices as well as challenges and undertaking the appropriate course corrections.

7. Apart from integrating the **SDGs into its on-going national and sub-national policies and programmes**, India will continue to focus on nurturing partnerships at the regional and global levels," the country's review report said.

New pension scheme launched

Finance minister Arun Jaitley on 21 July 2017 launched **Pradhan Mantri Vaya Vandana Yojana**, a pension scheme for senior citizens above 60 years of age. The scheme gives a guaranteed **annual return of 8% over a policy tenure of 10 years**.

What

1. **Life Insurance Corporation of India (LIC)** has the sole rights to sell this scheme both online and offline.
2. The scheme will be **favourable for senior citizens** because of its non-fluctuating rate of interest. It is also exempted from **any form of service tax**.
3. One can enroll under this scheme from 4 May 2017 to 3 May 2018.
4. In a soft launch, 58,152 policies have been sold since 4 May so far, while Rs2,705 crore was collected.
5. **Minimum and maximum purchase prices for the pension scheme are Rs150,000 and Rs750,000 respectively**.
6. If a senior citizen is in a liquidity crunch, loans up to 75% of the purchase price after three policy years can be availed.
7. The interest payments will be adjusted against pension instalments while the loan amount will be recovered form claim proceeds.

Panel on panchgavya

The government has set up a 19-member panel, including three members, to carry out scientifically validated research on cow-derivatives including its **urine, and their benefits**, according to an inter-departmental circular and members of the panel. The Panel was headed by **Science and Technology Minister Harsh Vardhan**, the committee will select projects that can help scientifically validate the benefits of panchgavya — the concoction of cow dung, cow urine, milk, curd and ghee — in various spheres such as nutrition, health and agriculture.

What

1. It was named the **National Steering Committee**; the panel includes secretaries of the departments of Science and Technology, Biotechnology, Ministry of New and Renewable Energy, and scientists from the Indian Institute of Technology (IIT), Delhi.
2. It also has three members of Vijnana Bharati and 'Go-Vigyan Anusandhan Kendra', outfits affiliated to the RSS and the VHP.
3. The government circular says former CSIR Director R.A. Mashelkar, known for vigorously campaigning against U.S. patents on turmeric and basmati rice, is also a member of the panel. The others include IIT-Delhi director Prof. V. Ramgopal Rao and Prof. V.K. Vijay of IIT's Centre for Rural Development and Technology.

PANCHGAVYA — Cow's Urine, Cow's Dung, Milk, Curd, Ghee

4. The government has given **the project the acronym SVAROP**, which stands for **Scientific Validation and Research on Panchgavya**, and says it is a "national programme" that's being conducted by the Department of Science and Technology, Department of Biotechnology, and the Council for Scientific and Industrial Research (CSIR) of the Ministry of Science and Technology in collaboration with IIT-Delhi.
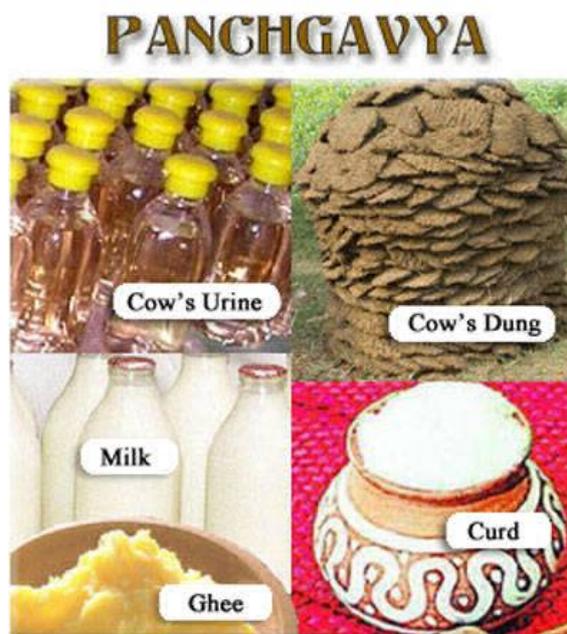
Set up committee for flag

The **Karnataka government** has formed a committee to look into the **legalities of having a separate flag for the state**. The **nine-member panel** was constituted on July 10 by an order of the Kannada and Culture Department following requests from activists for an official state flag — there is already an unofficial yellow and red flag. The committee is tasked with **looking into the design of a new one and the legalities of Karnataka having its own flag**.

What

1. **Back in 2012,** Karnataka began using an unofficial state flag under the B S Yeddyurappa-led BJP government.
2. After the government authorised its use, **it was first hoisted on November 1**, the day the state was formed. However, its use was challenged in the Karnataka High Court forcing the government to withdraw its notification allowing for its use.
3. If the flag is formally introduced in the state, **Karnataka will become the second state after Jammu and Kashmir to have its own flag**.
4. **J&K, which enjoys special powers under Article 370 of the Constitution, adopted its own flag in 2015**.
5. Under the Article 144 of the J&K Constitution, the state flag is "**red in colour** with three equidistant white vertical strips of equal width next to the staff and a white plough in the middle with handle facing the strips".

Constitution bench on right to privacy

A nine-judge constitution bench will decide **whether privacy is a fundamental right or not under the Constitution of India**, the Supreme Court said on 18 July 2017. The bench will assemble on 19 July 2017 to address the limited question: **does privacy as a right exist in the realm of the Constitution**? "It is essential for us to define if the right to privacy is a fundamental right under the Constitution or not," a five-judge bench headed by chief justice J.S. Khehar said.

What

1. **This is in the context of the Centre's 12-digit biometric identification project Aadhaar** becoming the bedrock of government welfare programmes, the tax administration network and online financial transactions.
2. To address the privacy question, **the nine-judge bench would have to examine and determine if past precedents holding that privacy is not a fundamental right under the Constitution are acceptable**.
3. A five-judge bench comprising chief justice Khehar and justices J. Chelameswar, D.Y. Chandrachud, S.A. Bobde and S. Abdul Answer was set up on 12 July to decide whether the privacy issue surrounding Aadhaar should be heard by a larger bench.
4. On 12 July, a total of 22 cases were tagged by the apex court to be heard by the five-judge bench. They challenge several aspects of Aadhaar and the use/sharing of data collected under the project.
5. Apart from grounds of infringement of privacy, activists have challenged the mandatory use of Aadhaar for doling out social welfare benefits, and for filing of income tax returns (ITRs) as well as for obtaining and retaining the personal account number (PAN) necessary for filing tax returns.
6. Under the **Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016**, the unique identity number is mandatory only to receive social welfare benefits.

MoU signed with FIND

THE PUNJAB government signed a memorandum of understanding (MoU) with the **Foundation for Innovative New Diagnostics (FIND)**, a global diagnostic firm, on 28 July 2017 **to help the state diagnose and treat Hepatitis C patients**. Health officials said the firm would provide rapid test kits for screening of high-risk patients, including those afflicted with **HIV, IVDU (Intravenous Drug Users)**. The MoU was signed on the occasion of World Hepatitis Day on 28 July 2017.

What

1. **The state health department** also released the action plan for injection safety programme, which is supported by WHO.
2. **Punjab is also the first state in the country** where the injection safety programme is being implemented in collaboration with WHO.
3. The health department **would be introducing RPS (Reuse Prevention Syringes) in the state** so that blood-borne infections cannot spread from one patient to another.
4. Now onwards, WHO and the health department will together work in sensitising the general public regarding safe injections.
5. **FIND would also provide four Gene Xpert machines**, which would be installed in Sangrur, Bathinda, Tarn Taran and Hoshiarpur for free testing of viral load among these high-risk patients.

High Altitude Cloud Observatory

A **high altitude cloud physics observatory** has been established at Munnar (Kerala), in **Western Ghats**, the region which is **gateway for the monsoon of India**. High altitude cloud physics observatory at Munnar is **used to observe cloud and rain processes over that region** with state of the art observations. Such facility will enable understanding of rainfall distribution and will allow better characterization of rainfall processes in the numerical models used for prediction of monsoon rainfall.

What

1. It is expected that **long term monitoring of cloud and rainfall processes** will enable for accurate representation of cloud micro-physical process in forecast models to improve over all skill of rainfall prediction for severe weather phenomena viz, heavy rainfall, thunderstorm etc., not only over Kerala but for the whole country.
2. High altitude cloud physics laboratories are functional at Mahabaleshwar (Konkan) and Munnar (Kerala) to study the monsoon cloud microphysics process modulated by the Western Ghats only and hence no such additional facility are contemplated.
3. Studies were undertaken in four climate sensitive regions of the country, viz. Himalayan Region, Western Ghats, North Eastern Region, and Coastal Areas to assess the possible impacts on the four sectors viz. agriculture, water, forests and health and associated ecosystem.
4. **A Report entitled, Climate Change & India: A 4X4 Assessment** – A Sectoral and Regional Assessment of Impact of Climate Change in 2030s, has been released by the Government during November, 2010 under the aegis of the Indian Network of Climate Change Assessment (INCCA).

Islands Development Agency (IDA)

The Union Home Minister Shri Rajnath Singh chaired the **first meeting of the newly constituted Islands Development Agency (IDA)**. The **IDA was set up on June 01, 2017** following the Prime Minister's review meeting for the development of islands. The Union Home Minister presented the vision for developing India's maritime economy while preserving the **natural eco-system and addressing the security concerns**. He emphasized upon the need for sustainable development of Islands with people's participation.

What

1. The CEO, NITI Aayog made a detailed presentation on the current status and the way forward for holistic development of identified islands. He informed that Concept Development Plans and Detailed Master Plans are being prepared for **identified islands with principles of sustainability, people's participation, eco-system preservation and determination of carrying capacity as the guiding principles**. Such an exercise is being taken up for the first time in the country.
2. During the meeting, the progress being made for the formulation of integrated master plans and other matters concerning the islands development were reviewed. It was also decided that Lt. Governor of Andaman & Nicobar Islands and Administrator of Lakshadweep Islands will be included as members of IDA.

3. After detailed consultations with key stakeholders, **10 islands namely Smith, Ross, Aves, Long and Little Andaman in Andaman & Nicobar and Minicoy, Bangaram, Suheli, Cherium and Tinnakara in Lakshadweep have been identified for holistic development in the first phase**. With this meeting, the efforts for holistic development of Islands of India received a major boost.

4. Other Members of the IDA including Cabinet Secretary, Home Secretary, Secretary (Environment, Forests and Climate Change), Secretary (Tourism) and Secretary (Tribal Welfare) also participated in the meeting.

First warships by a private sector

Reliance Defence and Engineering Limited (RDEL) launched the **first two Naval Offshore Patrol Vessels (NOPVs)** at their shipyard in **Pipavav, Gujarat**. The ships are part of a five ship project being constructed for the Indian Navy. The two NOPVs, **Shachi and Shruti** were launched at the RDEL Shipyard Pipavav, Gujarat.

What

1. The primary role of NOPVs is to undertake surveillance of the country's vast **Exclusive Economic Zone (EEZ)** besides operational tasks such as anti-piracy patrols, fleet support operations, **maritime security of offshore assets**, coastal security operations, and protection of shipping lanes.

2. The NOPVs would increase the ocean surveillance and patrolling capabilities of the Indian Navy.

3. **The NOPVs being constructed at RDEL are patrol ships** and are armed with **76mm Super Rapid Gun Mount (SRGM) system**along with two 30mm AK-630M guns which provide medium range and short range offensive and defensive capabilities.

4. The armament is remotely controlled through an **electronic Fire Control System**. The ships are fitted with diesel engine driven propulsion systems and can deliver speeds upto 25 knots.

5. All ship operations are controlled by an intelligent Integrated Platform Management System which has interfaces for all operational activities onboard the ship.

6. These two NOPVs are the **first warships to be launched by a private sector shipyard in India**. The opening up of **warship building to the private sector by the Indian Navy** is an opportunity that the private sector must make full use of, and is an enabling factor for increased private sector participation in this key area of national capability.

First InvIT IndiGrid

The power sector's first 'Infrastructure Investment Trust (InvIT)' IndiGrid, which was floated to own transmission assets across the country, would acquire four more projects of its sponsor– **Sterlite Power Grid Ventures Limited**. IndiGrid currently owns two assets of Sterlite– the Jabalpur Transmission Company Limited and the Bhopal Dhule Transmission Company Limited.

What

1. The Sponsor has issued an "**Invitation to Offer**" to IndiGrid for potential acquisition of four of its interstate power transmission projects under **ROFO (Right of First Offer) deed** as disclosed in the Offer Document."

2. It said these assets have a **combined revenue of around Rs 300 crore** and have the same contractual framework as the initial portfolio assets.

3. The Board has authorised the management of IndiGrid to proceed with due diligence on these assets.

4. The four projects are- the **East-North Interconnection Company Limite**, **the Purulia & Kharagpur Transmission Company Limited**, the **RAPP Transmission Company Limited and the Maheshwaram Transmission Limited**. Of these, except Maheshwaram, all other assets are commissioned.

Legislation on DNA profiling

The Law Commission on 27 July 2017 recommended a **new legislation on DNA profiling** which says that the tool would be used exclusively for identification of a

person and not to "extract" any other information. "**DNA profiling** would be undertaken exclusively for identification of a person and would not be used to extract any other information," the panel said in its recommendation to the government.

What

1. Along with the report, the panel has also prepared the '**DNA Based Technology (Use and Regulation) Bill, 2017**' amid fears that health-related data can be "misused by persons having prejudicial interests, adversely affecting the privacy of the person".

2. The report says that there will be a **national DNA data bank**, and **regional DNA data banks for the states**, to be set up by the central government.

3. **These banks will be responsible for storing DNA profiles** received from the accredited laboratories and maintaining certain indices for various categories of data, like crime scene index, suspect's index, offender's index, missing person's index and unknown deceased persons index.

4. It has also recommended setting up of a **DNA profiling board** which would lay down procedures and standards to establish DNA laboratories.

5. The proposed board will also be responsible to frame guidelines for training of the police and other investigating agencies dealing with DNA related matters and advice on all "**ethical and human rights issues**" relating to DNA testing.

EVIDENCE VS. RIGHT TO PRIVACY

Scientists vouch for DNA Bill, but privacy activists fear it will lead to gross violation of human rights

1985: Indian courts **accept DNA as evidence** in criminal investigation

2003: Work begins to draft Bill to regulate use of DNA samples in probes

2005: Code of Criminal Procedure amended, **includes use of DNA profiling**

Government says Bill will be useful in
- Crime scene investigation
- Maintaining database of convicts and

suspects
- Verification of missing persons
- Investigation of unidentified bodies
- Research work

Activists claim that the Bill could lead to
- Racial and communal profiling
- Violation of privacy
- Longer trial period
- Errant testing and conviction

UNPCAP-02 Commences

The **Centre for United Nations Peacekeeping (CUNPK)** is conducting **jointly with the US**, the **second edition of United Nations Peacekeeping Course for African Partners (UNPCAP-02)** in New Delhi from 17 July to 04 Aug 2017. The opening session for this course was conducted on **17 July at the Manekshaw Centre in New Delhi**. Mrs Ruchi Ghanashyam, Secretary (West), Ministry of External Affairs chaired the inaugural session and welcomed the officers while briefing the audience on the commitment of India towards the UN.

What

1. The course is **aimed to build and enhance the capacity of the African Troop** Contributing Countries to the UN and to further train the trainers from these countries.

2. The course, which revolves around the concept of training the trainers, as stated by the UN, is one of the many steps that India has initiated towards active contribution to peace support activities.

3. **Course is being attended by officers from 19 countries including India**. The students include officers who are currently employed in their respective peacekeeping training centres in African peacekeeping training institutions.

4. The training incorporates topics on **operational and logistical matters**, **humanitarian issues**, **thematic topics**, Blackboard and table Top exercises and mission briefs.

5. The course is also targeted to assist the student officers to further train officers in their respective countries on the nuances of peacekeeping. Internationally the course is already being seen as a milestone in many ways.

INTERNATIONAL

UN 90-90-90 targets report

   India, China and Pakistan are among the 10 countries that accounted for **more than 95 per cent of all new HIV infections** in the Asia and the Pacific region in 2016, according to a UN report. The report by the **Joint UN Programme on HIV/AIDS, UNAIDS, 'Ending AIDS: Progress towards the 90-90-90 targets**', gives a comprehensive analysis of the 2014 targets to accelerate progress so that by 2020, 90 per cent of all HIV-infected people know their status, **90 per cent of all HIV-diagnosed people** are accessing antiretroviral therapy (ART) and 90 per cent of those taking ART are virally suppressed.

What

1. For the first time in the fight against AIDS as more than half of all people living with the HIV virus now have access to treatment, while AIDS-related deaths have nearly halved since 2005.

2. In the **Asia and the Pacific region**, the majority of new infections are occurring in 10 countries led by India, China, Indonesia, Pakistan, Vietmnam, Myanmar, Papua New Guinea, the Philippines, Thailand and Malaysia. These 10 countries together accounted for more than **95 per cent of all new HIV infections in the region in 2016**.

3. The region's HIV epidemic remains largely concentrated among key populations, including sex workers and their clients, gay men and other men who have sex with men, people who inject drugs, and transgender people.

4. The annual number of new HIV infections in Asia and the Pacific has declined 13 per cent over the last six years, from 310,000 in 2010 to 270,000 in 2016.

5. The report added that in India, a respondent-driven sampling survey across 26 cities found that knowledge of HIV status was 41 per cent among people living with HIV who inject drugs.

6. Of those who knew their HIV status, **only 52 per cent were accessing antiretroviral therapy** and **83 per cent of those accessing treatment were virally suppressed (55)**. Among gay men and other men who have sex with men living with HIV who also were surveyed, 30 per cent knew their HIV status, 68 per cent of those who knew their HIV status were accessing treatment, and 78 per cent of those on treatment were virally suppressed.

7. The report added that last year, 19.5 million of the 36.7 million people living with HIV globally had access to treatment and AIDS-related deaths have fallen from 1.9 million in 2005 to one million.

8. With continued scale-up, this progress puts the world on track to reach the global target of 30 million people on treatment by 2020, according to the report.

Data hub for MENASA region

   The **UN has selected Dubai** as the data hub for the Middle East North Africa and South Asia (MENASA) region for the city's integrated initiatives to mine and manage its data, according to a media report. The **work is already under way to prepare Dubai as the regional city data hub**.

What

1. The **designation will be part of a portfolio of local and regional data portals**, analytics and reports to engage stakeholders and help accelerate progress.

2. It will also serve as a dedicated **platform for city-to-city learning and 'solutions transfer'** across metropolitan, national and global contexts.

3. This **accolade will help us spread our success to the rest of the MENASA region**, hopefully leading them by example to achieve their own smart transformation.

4. Dubai has launched a series of comprehensive and integrated initiatives to mine and manage the city's data.

5. The **Middle East, North Africa and South Asia (MENASA) Area** encompasses **31 countries** and a very diverse range of higher education systems.

"Flammable ice" under SCS

China has successfully produced natural gas from **methane hydrate, also known as "flammable ice"**, in an experimental project in the **South China Sea (SCS)**, the land and resources ministry said. A drilling platform deployed off the coast of the southeastern Chinese city of Zhuhai for 60 days produced a total of 309,000 cubic metres of natural gas, a record extraction volume from gas hydrate.

What

1. **After nearly 20 years of unremitting efforts**, China has achieved theoretical, technological, engineering and equipment innovations and has made a historical breakthrough.

2. **Flammable ice consists of methane trapped within water crystals**, and has been identified as a **potential new gas source for China**, with the South China Sea thought to contain some of the **world's most promising deposits**.

3. The government has promised to "actively develop" natural gas hydrate over the 2016-2020 five-year plan period.

4. The land and resources ministry said earlier this year that two gas hydrate deposits with about 100 billion cubic metres of reserves have been discovered following seismic surveys and drilling programmes in the northern section of the South China Sea.

5. **Japan reported a similar successful production test in May**. **India, Canada and the United States** is also believed to be looking at hydrates as an alternative energy source.

World's first floating wind farm

The **world's first full-scale floating wind farm** – with **turbines taller than the Britain's Big Ben** – is being built off the **coast of Scotland**. The technology will allow wind power to be harvested in waters that are too deep for the existing bottom-standing turbines. The wind farm, **known as Hywind**, is a trial project which will bring power to **20,000 homes**.

What

1. **The output from the turbines** is expected to surpass generation from current ones, according to the **Norway-based manufacturer Statoil**.

2. This is a tech development project to ensure it's working in open sea conditions. It's a game-changer for floating wind power and we are sure it will help bring costs down.

3. The huge turbines are currently being moved into place. **One giant turbine has already placed**, while four more wait in a Norwegian fjord. By the end of the month all the turbines will be towed to 25 kilometers off the shore.

4. **The turbines can operate in water up to a kilometer deep**. The tower, including the blades, measure 175 meters in height, dwarfing Big Ben. Each tower weighs 11,500 tonnes.

5. **Each blade is 75 meters long** – almost the wing span of an Airbus, the manufacturers said. The blades harness breakthrough software – which holds the tower upright by twisting the blades to dampen motions from wind, waves and currents.

6. The operation to **begin shifting the first of the 11,500 tonne giants** involved the crew securing thick cables to tug boats and using remote-controlled submarines to check for obstacles.

7. Floating on a sealed vase-like tube 78 meters deep, the turbine's bottom filled with iron ore to weight the base and keep it upright in the water.

US successfully tests THAAD

American forces successfully tried out on 30 July 2017 a **missile interception system the United Stataes (US)** hopes to set up on the Korean peninsula, military officials said following trial just days after **North Korea's second test of an ICBM (Intercontinental ballistic missile)**. In the American test of the **so-called THAAD (Terminal High Altitude Area Defence) system**, a medium-range missile was launched from a **US Air Force C-17 aircraft** flying over the Pacific and a THAAD unit in Alaska "detected, tracked and intercepted the target," the US Missile Defense Agency said.

What

1. It said **this was the 15th successful intercept in 15 tests for the weapons system known as THAAD**.
2. South Korea said on 29 July 2017 **it will speed up deployment of a THAAD battery on its territory because of the latest North Korean test** of an intercontinental ballistic missile.
3. Parts of the THAAD defense system were brought into South Korea under the government of ousted president Park Geun-Hye.
4. But new leader Moon Jae-In suspended deployment of the programme last month, citing the need for a new environmental impact assessment.
5. However, South Korean Defense Minister Song Young-Moo said on Saturday that Seoul will now begin consultations on the "tentative deployment" parts of the THAAD battery in response to the latest North Korean test.
6. The THAAD deployment has infuriated China, which has long argued it will destabilise the region.

ECONOMY

Fourth payments bank

Fino Payments Bank started operations on 17 July 2017 with **410 branches**, becoming the **fourth payments bank in India** after Airtel Payments Bank, India Post Payments Bank and Paytm Payments Bank.

What

1. **Fino, which was a remittance service provider,** has converted most of its Fino Money Mart outlets into bank branches.
2. These branches will also provide remittance services. "Currently offering 4% interest rate on savings accounts.
3. Among payments banks, Airtel Payments Bank offers the highest interest rate at 7.25%. India Post Payments Bank and Paytm Payments Bank offer 5.5% and 4%, respectively. Fino has raised Rs400 crore so far, of which Rs251 crore was from Bharat Petroleum Corp. Ltd.

First Wind Auction

Union Minister of State (IC) for Power, Coal, New & Renewable Energy and Mines, Shri Piyush Goyal presided over the signing of **Power Purchase Agreements (PPAs)** for purchase of 1050 MW of wind power under Ministry of New and Renewable Energy **(MNRE)'s first Wind Auction Scheme**. **The PPAs were signed between PTC India Ltd**., the trading company, and the successful wind power developers.

What

1. As per the PPAs signed, **Mytrah Energy**, **Inox Wind** and **Ostro Kutch Wind Pvt. Ltd**. would supply **wind power of capacity 250 MW each**.
2. Further, Green Infra would supply 249.9 MW and Adani Green Energy 50 MW from their wind power projects through inter-state transmission system at a tariff

Background

1. Earlier, **MNRE had sanctioned a scheme for setting up of 1000 MW inter-state transmission system (ISTS)** connected Wind Power Projects on 14th June 2016 with the objective to encourage competitiveness through scaling up of project sizes and introduction of efficient and transparent e-bidding and e-auctioning processes.

of Rs. 3.46 per kWh discovered through the open and transparent competitive bidding process.

3. **PTC India has tied-up this wind power for sale to DISCOMS of a number of States**.

4. Under this, **Uttar Pradesh would get 449.9 MW**, **Bihar 200 MW**, Jharkhand 200 MW, Delhi 100 MW, Assam 50 MW and Odisha 50MW for meeting their Non-Solar Renewable Purchase Obligation (RPO).

5. For these projects **Solar Energy Corporation of India (SECI)** conducted e-reverse auction on 23rd February 2017 and issued **Letter of Award (LoA)** to the successful wind power developers on 5th April 2017. The wind power projects under first wind auction are likely to be commissioned by September 2018.

Hambantota port deal

Sri Lanka was finally sign a $1.1 billion deal on 29 July 2017 **to lease the southern Hambantota port to China**, after several months of delay caused by local protests and claims by opposing politicians that **this would threaten national security**. Located near **the main shipping route from Asia to Europe and likely to play a key role in China's "Belt and Road" initiative**, the Hambantota port has been mired in controversy since state-run China Merchants Port Holdings, that built it for $1.5 billion, signed an agreement taking an 80 per cent stake.

What

1. The pact signed last year sparked widespread public anger as Chinese control of the port, which included **a plan for a 99-year lease of 15,000 acres (23 sq miles)** to develop an **industrial zone next door**, raised fears the port could be used for Chinese naval vessels.

2. To help ease these concerns, Sri Lanka's cabinet approved earlier this week a revised deal to cut the Chinese firm's stake to 70 per cent and assured the port would not be used for military purposes.

3. **The deal will also help Sri Lanka manage its foreign debt better**. Sri Lanka's total external debts stood at 4.08 trillion rupees ($26.52 billion) as of end-March. The previous government led by Mahinda Rajapaksa had borrowed more than $6 billion from China.

4. **India's concerns come after increased outreach by Beijing to India's neighbours, including Nepal and Bangladesh**, and China's ongoing development of the Port of Gwadar in Pakistan.

5. However, the revised deal approved by Colombo seeks to allay these concerns by providing for the formation of **two companies to split the operations of the port**.

6. Sri Lanka will have a major stake in the firm dealing with security, while China will run the other company that will be in charge of business.

Anti-profiteering lens

The proposed **anti-profiteering authority under the new GST regime** will take up for scrutiny only those cases that have mass impact and those where undue profit of more than Rs 1 crore has been earned. A **five member National Anti-Profiteering Authority**, headed by a secretary-level officer, will be set up soon to keep a tab on

businesses that have not passed on to consumers the **benefit of lower tax rates under the Goods and Services Tax (GST) regime**.

What

1. It will take two-three months time to gauge whether the **benefits of GST are being passed on to consumers**. By then, the authority would be put in place.

2. As per the three tier structure -- the **GST Implementation Committee (GIC)** will receive complaints and those which are state specific and involving smaller amounts will be transferred to the state screening committee.

3. Other cases will be referred to the Directorate General of Safeguards who will finish investigation within 3 months and send the findings to the anti-profiteering authority, which will pass an order in another 3-months time.

4. The issues which have a national or mass impact will be taken up by the authority. There may be many small cases which would be coming to the GIC, but only those cases where the financial implication is **more than Rs 1 crore would be taken up by the authority**. Rest would be transferred to the state screening committee.

5. ADG Safeguards will act as Secretary to the **National Anti-Profiteering Authority** and will coordinate between the authority and the DG Safeguards office.

6. The Central Board of Excise and Customs (CBEC) last week appointed Samanjasa Das as the Additional Director General (ADG) Safeguards in the Directorate General of Safeguards.

7. In the **three-tier structure for monitoring anti- profiteering**, the GST implementation committee, including four officers each from the Centre and states and one officer from the GST Council, will first receive the complaints.

8. The anti-profiteering authority, if it finds that a **company has not passed on the GST benefits**, will either direct it to pass on the benefits to consumers or if the beneficiary cannot be identified will ask the company to transfer the amount to the 'consumer welfare fund' within a specified timeline.

9. The authority will have **the power to cancel registration of any entity or business** if it fails to pass on to consumers the benefit of lower taxes under the GST regime, but it would probably be the last step against any violator.

10. According to the anti-profiteering rules, the authority will suggest return of the undue profit earned from not passing on the reduction in incidence of tax to consumers along with an 18 per cent interest, as also impose penalty.

JITSIC Tackling Global Tax Risks

India participated in the **fourth Joint International Taskforce on Shared Intelligence and Collaboration (JITSIC)** meeting reconvened in Paris to pursue the work on the **Panama Papers** in June 2017. Based on **legal instruments under the OECD and Council of Europe Multilateral Convention and tax treaties**, a number of countries shared information in confidential Competent Authorities sessions, on structures that facilitate, enable and promote tax avoidance / evasion. India also shared its experience in this regard.

What

1. **Demonstrating the value and strength of JITSIC**, 30 project participant countries have continued to exchange, analyse and act on information about taxpayers and intermediaries connected to Mossack Fonseca.

2. In the past six months, **more than 570 requests for information have been sent to 32 countries**. India has also sent several requests for information to various jurisdictions in the Panama Paper cases since the last meeting in January 2017.

3. **JITSIC members have established the capability to allow for fast, effective and coordinated multilateral responses** to any future data leaks and are sharing the same. JITSIC will continue to identify more arrangements as countries continue their investigations and share intelligence and new data comes to light.

4. Collaboration with JITSIC has been useful for India in its **fight against offshore tax evasion**.

Most competitive state

Gujarat, Delhi, Andhra Pradesh, Haryana, Telangana and Tamil Nadu are the top six states in India for business investment potential, finds a new study by the **National Council for Applied Economic Research (NCAER)**. The study, which estimates statewise investment potential, ranks their competitiveness on six pillars, namely — land, labour, infrastructure, economic climate, political stability and governance, and business perception.

What

1. Among these six states, **Haryana and Telangana have made the most gains on the index over the past year**, moving up 12 and 8 spots, respectively.
2. On the other hand, West Bengal, Chhattisgarh, Rajasthan and Uttarakhand have fallen the most, finds the study.
3. **West Bengal ranking last on the index**, followed by Uttar Pradesh and Bihar, these states do fare better on sub-indices. Bihar, for example, does better on labour; Uttar Pradesh on land and West Bengal on economic climate.
4. Economic power house **Maharashtra ranks eighth on the index**, down three ranks from last year. Karnataka, the start-up hub, ranks ninth on the index. Delhi fares poorly on governance and political stability.
5. On the infrastructure pillar, Maharashtra, Karnataka and Odisha moved closer to the frontier, while Uttarakhand and Assam moved further away.
6. **West Bengal made the most gains on the economic climate** and governance pillars, while Telangana, Punjab, Haryana and Kerala made significant gains under the perception pillar.

First Indian digital media firm to enter China

Pocket Aces, which creates **long- and short-format content for digital consumption**, will be the **first Indian digital media company to have a presence in China**. The company — **co-founded by Aditi Srivastava, Ashwin Suresh and Anirudh Pandita** — has entered into a partnership with WebTV Asia, a multi-platform digital media entertainment company. Its content will be available on one of China's biggest websites, Youku Tudou, which is owned by **e-commerce giant Alibaba**.

What

1. Pocket Aces creates content across 3 channels — **Dice Media (premium web series)**, **FilterCopy (snackable and sharable content)** and **Gobble (all things food)** — and reaches over 40 million people weekly on its own properties.
2. This partnership will be kicked off with FilterCopy and Gobble, each having a dedicated section on the Youku Tudou platform. The content will have **subtitles in English and Mandarin**, and in some instances, will be dubbed as well to localise it to the Chinese market.
3. The Chinese market is a tough one to crack for foreign content creators. While digital is a new medium, even traditional media like films struggle to get over the Great Wall.
4. **The country allows only 34 foreign films to be released each year**, and that too after some significant gatekeeping on the content front. Many Hollywood films are known to delete or alter scenes to be released in China.
5. The content firewall refers to regulations that don't allow a lot of global digital media companies like **YouTube and Facebook to operate in China**.

Guidelines of SGB Scheme

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has given approval **for revision of guidelines of Sovereign Gold Bonds (SGB) Scheme** with a view to achieve its intended objectives. **Two sets of changes have been made in the scheme**:

1. Specific changes have been made in the attributes of the scheme **to make it more attractive**, **mobilise finances as per the target** and reduce the economic strains caused by imports of gold and reduce the **Current Account Deficit (CAD)**.
2. **Flexibility has been given to Ministry of Finance to design and introduce variants of SGBs** with different interest rates and risk protection / pay-offs that would offer investment alternatives to different category of investors.

3. Ministry of Finance (the issuer) has been delegated **this power to amend / add to the features of the Scheme** with approval of the Finance Minister to reduce the time lag between finalizing the attributes of a **particular tranche and its notification**.

4. **Such flexibility will be effective in addressing the elements of competition with new products of investment**, to deal with very dynamic and sometimes volatile market, macro-economic and other conditions such as gold price.

Following specific changes in the scheme have been approved:

1. The investment limit per fiscal year has been increased to **4 kg for individuals, 4 Kg for Hindu Undivided Family (HUF)** and **20 Kg for Trusts and similar entities** notified by the Government from time to time.

2. The ceiling will be counted on **Financial year basis and will include the SGBs purchased** during the trading in the secondary market.

3. The ceiling on investment will not include the holdings as collateral by Banks and Financial institutions.

4. **SGBs will be available 'on tap'. Based on the consultation with NSE, BSE, Banks and Department of Post**, features of product to emulate 'On Tap' sale would be finalised by Ministry of Finance.

5. To improve liquidity and tradability of SGBs, appropriate market making initiatives will be devised. Market makers, could be commercial banks or any other public sector entity, such as MMTC or any other entity as decided by GoI.

Background
1. **Sovereign Gold Bond (SGB) Scheme** was notified by the Government of India on November 05, 2015 after due approval of the Cabinet.
2. The main objective of the scheme was **to develop a financial asset as an alternative to purchasing metal gold**.
3. The target was to shift part of the estimated 300 tons of physical bars and coins purchased every year for **Investment into 'demat' gold bonds**.
4. The target mobilisation under the scheme at Rs. 15,000 crore in 2015-16 and at Rs.10,000 crore in 2016-17. The amount so far credited in Government account is Rs. 4,769 crore.
5. In view of less than expected response of the investors to the scheme, and **considering its bearing on CAD** and consequently on overall macro-economic health of the country, it was felt necessary to make changes in this scheme to make it a success.

6. The Government may, if so felt necessary, allow higher commission to agents.

Axis Bank to acquire Freecharge

In a deal that marks the **first such acquisition of a digital payments company by a bank in India**, Axis Bank has decided to **acquire 100% in FreeCharge Payment Technologies and Accelyst Solutions** for Rs 385 crore ($60 million). The transaction is **subject to regulatory approvals** and is expected to conclude in by end of September 2017.

What

1. **FreeCharge is a leading pan-India digital payments company** with over 50 million registered wallet users and over 2 lakh merchants.

2. **FreeCharge wallet is used extensively to make payments** for telecom, DTH and broadband recharge and for utility payments including electricity, gas and water bills.

3. The acquisition of FreeCharge re-affirms Axis Bank's determination to lead the journey of digitisation of financial services.

4. **The Axis-FreeCharge combination** is a potent one that has the potential to make a large impact on the digital payments and banking space.

Rise in transactions via cards

Transactions through debit and credit cards **rose by merely 7% post-demonetisation**, as against a **surge of over 23% in overall digital transactions**, top government officials told a parliamentary panel. Officials from various ministries gave a presentation to the Parliamentary Standing Committee on Finance on '**Demonetisation and Transformation towards Digital Economy**'.

What

1. **The digital transactions in all modes increased by 23%** to 27.5 million in May 2017 from 22.4 million in November 2016, according to the presentation, a copy of which is with PTI.
2. The highest jump was witnessed in transactions through **Unified Payments Interface (UPI)**, from one million per day in November 2016 to 30 million in May 2017.
3. UPI is a system that powers multiple bank accounts into a single mobile application for seamless fund routing and merchant payments into one hood.
4. Transactions through IMPS (Immediate Payment Service), which is an electronic fund transfer service, **almost doubled** to 2.2 million from 1.2 million during the period under purview, according to the data shared by government officials.
5. The least rise in digital transactions was witnessed in the case of plastic cards, as the rise was only 7% — from 6.8 million in November 2016 to 7.3 million in May this year.

SCIENCE AND TECHNOLOGY

'SHe-box' portal launched

Women employees of the Central Government can now lodge complaints of **sexual harassment at workplace online**. Women and Child Development Minister Maneka Gandhi on 24 July 2017 launched a **web portal, 'SHe-Box**,' for this, saying its scope will "soon" be widened to enable women employees in private sector as well lodge their complaints against **sexual harassment at work place**.

What

1. To begin with, Central Government women employees can file complaints (at the portal).
2. The Ministry will also soon set in motion a **nation-wide survey to assess and understand the extent and magnitude of the sexual harassment of women at the workplace**.
3. The '**SHe-Box,' which stands for sexual harassment electronic box**, is hosted on the website of the WCD Ministry.
4. The Ministry decide to host an online complaint registration portal for women employees to ensure "effective implementation" of **the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013**.
5. The complaints to be lodged at 'SHe-Box' will immediately be forwarded to the **internal complaints committee (ICC)** of the respective departments of the Central Government for action as prescribed under the Act. The complainant can track the status of her complaint on the portal.
6. The idea behind hosting 'SHe-Box' is to ensure a speedy disposal of the complaints of sexual harassment by the ICC of the respective departments.

Made in India for Global Health

The indigenously developed **newborn hearing screening device – SOHUM** was formally launched by the Minister of State for Science and Technology & Earth Sciences, Shri Y.S. Chowdary, in New Delhi. The newborn hearing screening device developed by **School of International Biodesign (SIB)** startup **M/s Sohum Innovation Labs India Pvt. Ltd**.

What

1. This innovative medical device has been **developed under Department of Biotechnology (DBT)**, Ministry of Science and Technology, Government of India supported (SIB).
2. **SIB is a flagship Program of the DBT** aimed to develop innovative and affordable medical devices as per unmet clinical needs of India and to train the next generation of medical technology innovators in India, it is a valuable contribution to the **Make in India campaign of the Government**.
3. This Program is **implemented jointly at AIIMS and IIT Delhi in collaboration with International partners**. Biotech Consortium India Limited manages techno-legal activities of the Program.
4. **Sohum is a low cost and unique device** which uses brainstem auditory evoked response, the gold standard in auditory testing to check for hearing response in a newborn.
5. As of now, **this technology is prohibitively expensive and inaccessible to many**. Start-up Sohum has made the technology appropriate for the resource constrained settings and aims to cater to nearly 26 million babies born every year in India.
6. One of the most common birth disorders – **congenital hearing loss** – is a result of **both genetic and non-genetic factors**.
7. These factors are mostly associated with resource-poor economies such as India where, unlike advanced healthcare systems, hearing impairment goes undiagnosed.
8. Globally, 8,00,000 hearing impaired babies are born annually of which, **nearly 1,00,000 are in India**. And all this preventable damage needs is early screening, which can facilitate timely treatment and rehabilitation.
9. Sohum team has come up with a screening device to facilitate the routine screening of newborn babies – with the potential to help children at a key stage of their development.
10. The portable Sohum Hearing Screening measures **auditory brain waves via three electrodes placed on the baby's head**. When stimulated, they detect electrical responses generated by the brain's auditory system.
11. If there is no response, the child cannot hear. **The battery-operated device is non-invasive**, which means babies do not need to be sedated, which is the current, and risky, testing in process at present.
12. Another key advantage over other **testing systems is the patented, in-built algorithm that filters out ambient noise from the test signal**. This is important because health clinics can be incredibly crowded and noisy.

New ways of star formation

Scientists have discovered new evidence of stars forming in our Milky Way galaxy, by using a telescope equipped to detect infrared light invisible to our eyes. The "exciting" finding reveals how stars, including our Sun, grow up within clusters and groups. **The team led by Grace Wolf-Chase, astronomer at Adler Planetarium in the US**, found huge gas clouds moving outward from areas where "**baby**" stars are forming, using a new way of disentangling these outflows from other processes in **densely-populated stellar nurseries**. These stellar nurseries can produce dozens or even hundreds of stars with different sizes and masses.

What

1. The Sun, though isolated from other stars today, is thought to **have formed in a cluster with many other stars**, so the environments we are studying can tell us a lot about the origin of our own solar system.
2. **Stars form when cold, rotating clouds of gas and dust in space are pulled together by gravity into flattened "disks"** that spin faster as they shrink, similar to what happens when twirling figure skaters pull their outstretched arms in towards their bodies.
3. In order for a star to form at the centere of a spinning disk, the rotation of the disk must slow down.

4. This happens through powerful outflows of gas that are channeled into tight streams, known as "jets."
5. **Jets can span more than 10 trillion miles**, even though the disks that launch them are "mere" billions of miles across (comparable to the size of our solar system).
6. The researchers used an instrument called **NICFPS (Near- Infrared Camera and Fabry-Perot Spectrometer)** on the **Astrophysical Research Consortium (ARC)** 3.5-metre telescope at the **Apache Point Observatory (APO)** in New Mexico.
7. NICFPS peered into 26 dusty clouds thought to be forming clusters containing massive stars.

Deep space habitat for NASA

Scientists are developing a **deep space habitat for NASA that would keep astronauts safe during long-duration missions** by providing **critical communications, life support and autonomous navigation**. Refurbishing an old cargo container used to transfer essentials to the **International Space Station (ISS)**, US-based aerospace company Lockheed Martin is prototyping a deep space habitat for NASA at the Kennedy Space Center. **The prototype will integrate evolving technologies to keep astronauts safe while onboard** and operate the spacecraft autonomously when unoccupied.

What

1. **NASA recently awarded Lockheed Martin a Phase II contract for the Next Space Technologies for Exploration Partnerships (NextSTEP) habitat study**. As part of Phase II, the team will continue to refine the design concept developed in Phase I and work with NASA to identify key system requirements for the Deep Space Gateway.
2. The team will build a full-scale habitat prototype in the Space Station Processing Facility at NASA's Kennedy Space Center and a next-generation deep space avionics integration lab near Johnson Space Center.
3. **A full-scale prototype of the deep space habitat** will be built by **refurbishing the Donatello Multi-Purpose Logistics Module (MPLM)**. Donatello was one of three large modules, flown in the space shuttle payload bay, that were used to transfer cargo to the ISS.
4. The team will also rely heavily on mixed reality prototyping using virtual and augmented reality. Through this approach, the team can reduce cost and schedule, as well as identify and solve issues early in the design phase.
5. **The work will occur over 18 months and will build upon the concept study performed in Phase I**. Phase II will also focus on mixed reality and rapid prototyping, and working on concept refinement and risk reduction.
6. The results will further the understanding of the systems, standards and common interfaces needed to make living in deep space possible.

Strange signals detected

Astronomers have detected **mysterious radio signals coming from the direction of a small**, dim star located about 11 light-years from Earth. The signals came from a **red dwarf star - Ross 128 (GJ 447)** - which is around 2,800 times dimmer than the Sun and is not yet known to have any planets. The **"strange" radio signals** were detected by astronomers at the University of Puerto Rico, using the **Arecibo Observatory**, which is a massive radio telescope built inside of a Puerto Rican sinkhole.

What

1. The possibility that **signals came from intelligent extra terrestrial life** cannot be ruled out yet.
2. The signals may have come from some kind of man-made object in space, such as a satellite.
3. The **field of view of (Arecibo) is wide enough**, so there is the possibility that the signals were caused not by the star but another object in the line of sight.

Early life on Earth began on land not sea

A paradigm-shifting hypothesis has pushed back the time for the emergence of **microbial life on Earth by 580 million years**, suggesting that life began not in the sea but on land. **The new model is based on stromatolites** — round, multi-layered mineral structures that range from the size of golf balls to weather balloons and represent the oldest evidence that there were living organisms on Earth 3.5 billion years ago.

What

1. The team from University of California-Santa Cruz and University of New South Wales in Sydney scoured the for **bidding landscape of the Pilbara region of Western Australia** looking for clues to how ancient microbes could have produced the **abundant stromatolites** that were discovered there in the 1970s.

2. Scientists who believed life began in the ocean thought these mineral formations had formed in shallow, salty seawater, just like living stromatolites in the **World Heritage-listed area of Shark Bay**, which is a **two-day drive from the Pilbara**.

3. The **oldest fossil evidence for life was in fresh water**. It's a logical continuation to life beginning in a freshwater environment.

4. Some of the **key building blocks of life**, created during the formation of our solar system, would have fallen to Earth and gathered in these pools, becoming concentrated enough to form more complex organic compounds. The edges of the pools would go through periods of wetting and drying as water levels rose and fell.

5. The **membranes would act like incubators for the functions of life**. Deamer and his team believe the first life emerged from the natural production of vast numbers of such membrane-encased "protocells".

MISCELLANEOUS

Right to privacy not absolute: SC

Revisiting the question of privacy, a nine-judge bench of the Supreme Court on 19 July 2017 observed that **right to privacy was not absolute**. This comes **55 years after the apex court decided that privacy is not a basic right for citizens**. The decision of the judges is pivotal to petitions that challenge making the **Aadhaar scheme mandatory for millions of Indians**. The bench will continue hearing matter tomorrow.

What

1. Senior counsel Gopal Subramanium told the Supreme Court that the **right to privacy is a pre-existing natural right** which is inherent in the Constitution though not explicitly mentioned.

2. Subramanium is leading the argument on behalf of the petitioners who have **challenged the Aadhaar scheme on the grounds of its being violative of the right to privacy**.

3. The right to privacy is recognised as a **fundamental right under Article 21 of the Constitution**. The concept of privacy is embedded in liberty as well as honour of a person.

4. His arguments came as the apex court commenced hearing on the question whether right to privacy was a fundamental right.

5. A nine-judge constitution bench headed by Chief Justice Jagdish Singh Khehar is examining the nature of privacy as a right in **context of two judgments of 1954 and other in 1962** which had held that right to privacy was not a fundamental right.

6. Taking forward the argument that privacy is a fundamental right, senior counsel Shyam Divan told the bench that even Union Finance Minister Arun Jaitley during a debate on the Aadhaar Bill in the Rajya Sabha had asserted that **privacy was a fundamental right linked to right of liberty under Article 21 of the Constitution**.

'I have space' programme

With success of its '**I Have Space' programme** across the country, **Amazon has decided to expand it** by adding thousands of store owners for delivering its packages, an official spokesperson said. **The programme currently covers 12,500 stores in 180 cities**, including 1,000 in Tamil Nadu and 50 in Coimbatore and a significant proportion of Amazon logistics' volume in cities where it present.

What

1. Under this programme, **Amazon India partners with local store owners to provide pickup and delivery services to customers across different cities** within a two to four km radius of their stores.

2. The company has successfully **unlocked the potential of such store owners**, allowing them to supplement their regular income and generate more footballs in their stores, it started with **2,500 stores in 2015** and has grown to 12,500 now.

3. Store partners delivered between 30 to 40 packages a day, earning a

M.P Sharma vs Satish Chandra (1954)
1. This **post-independence case** involved a challenge to the constitutionality of search and seizure of documents from a person against whom a **first information report (FIR)** has been lodged.
2. The main issue that came up for consideration was whether such **procedures were violative of Article 19 (1) (f) (right to property)**and **Article 20 (3) (right against self- incrimination) of the Constitution**.
3. The judges were to ascertain if there were any constitutional limitations to the government's right to search and seizure and if this would in any way breach the right to privacy.
4. A majority decision by an **eight-judge Constitution bench** held that **the right to privacy was not a fundamental right under the Indian Constitution**.

Kharak Singh vs State of Uttar Pradesh (1962)
1. The issue of **state surveillance as against the right to privacy** was bought to the court when **Kharak Singh, who was let off in a dacoity case due to lack of evidence challenged regular surveillance by police authorities** on the grounds of infringement of his constitutionally guaranteed fundamental rights.
2. Provisions of the Uttar Pradesh police regulations allowed **secret picketing of Singh's house**, domiciliary visits at night, periodic inquiries by officers and tracking/verifying his movement. Claiming that this was an infringement of his fundamental rights, Singh filed a **writ petition before the Supreme Court**.
3. A **six-judge Constitution bench examined the issue of surveillance and validity of regulations** governing the Uttar Pradesh police in the context of the scope of such powers being in violation of the freedoms guaranteed to citizens under the Constitution.
4. The fundamental rights referred to in the challenge were **Article 19(1)(d) (Right to move freely through the territory of India)** and **21 (Right to life and personal liberty)** of the Constitution.
5. In a majority judgment, the court ruled that "**privacy was not a guaranteed constitutional right**". It however, held that **Article 21 (right to life) was the repository of residuary personal rights** and **recognized the common law right to privacy**.

fixed amount per delivery and the program is open to all store owners who have the ability to service on foot or a two wheeler.

4. The larger expansion will happen during Diwali, when sales of Amazon would be really higher in volume.

Rate of Cybercrime increase

The **rate of cybercrime has increased in 2017**, as one case of cybercrime was reported in **every 10 minutes in the first six months**, said a report in The Economic Times. According to **Indian Computer Emergency Response Team (CERT-In)**, 27,482 cases of cybercrime were reported from January to June. This is higher than 2016 when a cybercrime was reported in every 12 minutes, added the report.

What

1. **Analysis of data from 2013 - 2016** shows that network scanning and probing, which is seen as the **first step to detect vulnerabilities in systems** so that sensitive data can be stolen, **constituted 6.7% of all cases** while virus or malware attack accounted for 17.2%, added the report.
2. The **cybercrime includes global ransomware attacks** that hit hundreds of systems, to phishing and scanning rackets.
3. While **India has been dealing with crimes such as phishing and defacement**, ransomware attacks have come as a surprise.
4. Other crimes in the cyberspace include phishing, scanning or probing, site intrusions, defacements, virus or malicious code, ransomware and denial-of-service attacks.
5. **India has seen a total of 1.71 lakh cases of cybercrime in the past three-and-a-half years** and the CERT claims that the number is likely to cross 50,000 by December.

'Vande Mataram' must in schools

In a significant ruling, the Madras High Court on 25 July 2017 said that "**Vande Mataram" should be played or sung in schools, colleges, government offices and even in private organisation in Tamil Nadu**. However, the court also issued order that the **national song should be sung at least once a week in the schools and in offices** the Vande Matram should be crooned once in a month.

What

1. When a **writ petition, filed by K Veeramani**, who faced an issue while took part in **government's Teacher Eligibility Test in 2013**, Justice M V Muralidharan also said that "Vande Mataram" could be translated in Tamil if it is difficult to sing.
2. The Justice also made it clear that **the schools and organisation should not force or compel anyone to sing the national song if they find it difficult in warbling that**.
3. In his petition, Veeramani said that he could not get through the eligibility test as he lost by single mark of the total 90 after he answered the "Vande Mataram" was written in Bengali.
4. Claiming that the song was scripted in Bengali, the petitioner alleged that evaluaters of Teacher's Recruitment Board have committed mistake in the answer key to the test by mentioning that the correct answer as Sanskrit.
5. The plea also claimed that **due to the mistake by the board**, the petioner lost his opportunity of being included in the teacher's recruitment procedure.
6. Though the government lawyer claimed that the song was originally written in Sanskrit and was translated later in Bengali, Justice ordered the Advocate General (AG) to find the correct answer to clear the confusion.
7. When the plea came up for hearing the AG stated that the **original language of "Vande Mataram" was Sanskrit but written in Bengali script**.
8. The judge then ordered the authorities to include Veeramani in the teacher selection process besides making compulsory to play or sing the national song in schools and offices.

Three Codex standards for spices adopted

In a major recognition of India's efforts to benchmark global spices trade, **the Codex Alimentarius Commission (CAC)** has adopted **three Codex standards for black**, white and green pepper, cumin and thyme, paving the way for universal agreement on identifying quality spices in various countries. **The member-countries of CAC**, the international food standards-setting body which met in Geneva for its 40th session during July 17-22, unanimously approved the **adoption of Codex standards for the three spices**, which would facilitate evolving a **common standardization process for their global trade and availability**.

What

1. The Codex standards were adopted in the wake of India conducting three sessions of **Codex Committee on Spices and Culinary Herbs (CCSCH) at Kochi (2014)**, Goa (2015) and Chennai (2017).

2. The Chennai session succeeded in achieving this consensus. Subsequently, **these drafts were placed before the CAC**, and it was adopted by consensus with an overwhelming support from the member-countries.

3. With the adoption of **the Codex standards on pepper, cumin and thyme, spices have been included for the first time** as commodities that will have such universal standards.

4. **The adoption of the Codex standards** would imply that there are now reference points and benchmarks for the member-countries to align their national standards for spices with Codex.

5. **This triumph of CCSCH is the harbinger of a lot of hard work ahead**. The number of spices and culinary herbs is very large – although only 109 spices are notified in the ISO list, their actual number, as used in various countries, would be much higher.

6. **It was in 2013 that the need for Codex standards for spices and herbs became a matter of concern**, owing to the increased level of issues in spice trade.

7. At that time, **there was no Codex committee exclusively for spices and culinary herbs**. Thus, the first step in development of Codex standards was the establishment of a dedicated Codex committee for spices and herbs.

8. With the approval of the Central government, **Spices Board India submitted to CAC a proposal for such an exclusive committee for spices and culinary herbs**.

9. After completing the background work, it sent delegates to a series of Codex committee meetings all over the world, making a forceful plea for the need for a committee on spices and herbs.

10. **The 36th session of CAC, which met in Rome from July 1-5, 2013**, deliberated on this proposal from India, and later approved it with unanimous support of the member-countries.

11. **It heralded the creation of CSCH, with India as the host country** and Spices Board as the Secretariat. This was the first new Codex commodity committee to be approved in the past 25 years.

12. Spices Board India, **the flagship organization of the Central Government for export and promotion of spices from the country**, has always been concerned about this aspect, and hence has taken keen interest in harmonizing the disparate standards for spices which exist all over the world.

First GM human embryos

For the first time, scientists in the US have successfully used **gene-editing tools on human embryos to correct defective DNA that cause inherited diseases**. The effort, led by Shoukhrat Mitalipov of Oregon Health and Science University in the US, involved **changing the DNA of a large number of one-cell embryos** with the controversial gene-editing **technique CRISPR**. Previous reports of **editing human embryos were all by scientists in China**. For ethical reasons, the embryos were not allowed to develop for more than a few days.

What

1. **The experiments are a milestone in journey** towards the **birth of the first genetically modified humans**, according to the 'MIT Technology Review'.
2. Scientists wanted to show that **they can eradicate or correct genes that cause inherited disease, like thalassemia**.
3. The genetically modified child would then pass the changes on to subsequent generations.
4. Critics say that such experiments may open the gates to a world of "**designer babies**" engineered with genetic enhancements – a prospect opposed by religious organisations, civil society groups, and biotech companies.

14th President of India

   Ram Nath Kovind swore in as the **14th President of India** on 25 July 2017 at Rashtrapati Bhawan in a glittering ceremony. Kovind was administered the oath of office and secrecy by **Chief Justice of India J S Khehar**. He exchanged seats with Pranab Mukherjee and a 21-gun salute followed as the new President Kovind made his first address.

What

1. The **NDA candidate received 65.65 per cent of the votes in the Electoral College** and defeating Opposition candidate **Meira Kumar**.
2. The outgoing President Pranab Mukherjee along with Kovind proceeded to the Parliament in a six-horse carriage. Army, Navy and Air Force personnel flanked the Raisina Hill road.
3. The **buggy was brought out for the first time** after 1984 by Mukherjee for **Beating Retreat ceremony in 2014**.
4. Ram Nath Kovind, who served as the 35th Governor of Bihar was born on October 1, 1945 in Paraukh village in the Kanpur Dehat district, Uttar Pradesh. Kovind did his graduation in law from a Kanpur college.

What is a debt instrument?

   A **debt instrument is a paper or electronic legal obligation** that enables the issuer (or taker) **to raise funds by promising to repay a lender (or giver) the borrowed sum along with interest on a timely basis**. It allows the lender (or giver) to earn a fixed interest on it besides getting the principal back. Types of debt instruments include **bonds, debentures, leases, certificates, bills of exchange, promissory notes**etc. These instruments provide option for market participants to easily transfer the ownership of debt obligations from one party to another. The lender receives a fixed amount of interest along with repayment of principal amount during the lifetime of the instrument. **It is a kind of IOU (I owe you)** between the issuer and the purchaser.

The debt instrument is important because:

(a)   It makes the repayment of debt legally enforceable
(b)   It increases the transferability of the obligation

1. Depending on the duration, debt instruments can be classified as - **long-term obligations or short-term obligations**.
2. The **Short-term debt instruments**, be it personal or corporate, are expected to be repaid within one year, for example - **credit card bills, payday loans, or treasury notes**.
3. The **Long-term debt instruments are paid over a year or more**, and are being repaid through periodic installment payments, for example - long-term loans or mortgages.
4. Debt instruments, such as loans, bonds and debentures, are used by individuals, businesses and governments to raise capital or generate investment income. Here are some of the common debt instruments:

Treasury Bills

1. **Treasury bills are short-term debt obligations that are issued for less than one year**.
2. They can be redeemed only at maturity.
3. These are issued to meet short-term mismatches in receipts and expenditure.

4. Bonds of longer maturity are called dated securities.

Debentures

1. **Debentures have no asset backing**.
2. These are mostly issued by the company as a means of **raising medium or short-term capital to fund specific projects**.
3. The lenders' money is expected to be repaid with the revenue generated by the project.

Mortgage

1. **A mortgage is a loan against a residential property**.
2. It is secured by an associated property.
3. In a case of failure of payment, the property can be seized and sold to recover the loaned amount.

Bonds

1. **Bonds are issued generally by the government, central bank or businesses and are backed by the assets of the issuing entity**.
2. If a company issues bonds to raise debt capital and subsequently declares bankruptcy, the bondholders are entitled to repayment of their investments from the company's assets.

Foundation Day of MoES

The **Foundation Day of Ministry of Earth Sciences** was celebrated on **27th July every year**. The Ministry of Earth Sciences (MoES) is mandated to provide the nation with the best possible services in forecasting the monsoons and other weather/climate parameters, ocean state, earthquakes, tsunamis and other phenomena related to earth systems, for the Public Safety and **socio-economic benefits**. The Ministry also deals with science and technology for exploration and exploitation of ocean resources (**living and non-living**), and play nodal role for Antarctic/Arctic/Himalayas and Southern Ocean research.

What

1. This year too, the Foundation Day was celebrated on 27th July 2017 at the Vigyan Bhavan, New Delhi. The foundation day lecture was given by **Dr. Michael McPhaden** an eminent scientist from USA.
2. In order to provide due recognition and platform to major scientific contributions made by eminent scientists/engineers in various fields of Earth System Science and also considering the need to encourage young researchers for coming into the **mainstream of Earth System Science**, the ESSO has instituted the Life Time Excellence Award and National Earth System Sciences Awards.
3. This year the **Life Time Excellence Award** was awarded to **Professor K. Gopalan** for his significant contribution in the field of isotope geoscience.
4. The National Awards for Ocean Science & technology, Atmospheric Science & technology and Geoscience & technology was presented to **Prof. P. N. Vinayachandran**, **Dr. K. Krishnamoorthy** and **Professsor K. S. Krishna** respectively.
5. The Young Researcher Awards was presented to Dr. Dhanya C. T. and Dr. Vikram Vishal for their outstanding work in Earth Science & Technology. In addition, certificates of merit were also be presented to the scientists from MoES.

India largest provider of 'online labour'

India is the largest supplier of online labour, says a recent report, analysing data from e-platforms connecting freelancers with employers. **India is followed by Bangladesh, US, Pakistan, Philippines and the UK** in what is being termed "**digital gig work**" or freelance work offered online. Over half of the online work supplied out of India is dominated by software development and technology sector.

What

1. **Oxford Internet Institute of the University of Oxford** published the report. It hosts the "**iLabour project**" as part of which the **Online Labour Index** is produced. This report analysed data for the first week of July.

2. The largest overall supplier of online labour according to the data is the **traditional outsourcing destination India**, which is home to **24% of the workers observed**.
3. **India is followed by Bangladesh (16%) and US (12%)**. Different countries' workers focus on different occupations.
4. The software development and technology category is dominated by workers from the Indian subcontinent, who command a 55% market share.
5. The professional services category, which consists of services such as accounting, legal services, and business consulting, is led by UK-based workers with a 22% market share.
6. While **software and technology services was the top sector for India**, creative and multimedia services came second, and sales and marketing support was the third most popular online labour sector for the country.
7. The report analyses data from four online platforms - Fiverr, Freelancer, Guru, and PeoplePerHour. "Based on traffic statistics, It estimate that these four sites represent at least 40% of the global market for platform-based online work.

India's most quake-prone cities

Twenty-nine Indian cities and towns, including Delhi and capitals of nine states, fall under "**severe" to "very severe" seismic zones**, according to the **National Centre for Seismology (NCS)**. A majority of these places are in the Himalayas, one of the most seismically active regions in the world. Delhi, Patna (Bihar), Srinagar (Jammu and Kashmir), Kohima (Nagaland), Puducherry, Guwahati (Assam), Gangtok (Sikkim), Shimla (Himachal Pradesh), Dehradun (Uttarakhand), Imphal (Manipur) and Chandigarh fall under seismic zones IV and V. **These cities have a combined population of over 30 million**.

What

1. The **Bureau of Indian Standards (BIS) has classified different regions in the country into zones II to V**, taking into consideration earthquake records, tectonic activities and damage caused, the director of the NCS, Vineet Gauhlat, said.
2. The NCS, which records earthquakes and carries out studies pertaining to **micro-zonation of cities**, comes under the **India Meteorological Department (IMD)**.
3. Seismic micro-zonation is the process of subdividing a region into smaller areas having different potential for hazardous earthquake effects.
4. **Zone II is considered the least seismically active**, while Zone V is the most active. Zone IV and V fall under "severe" to "very severe" categories respectively.
5. Zone V includes the entire northeastern region, parts of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, the Rann of Kutch in Gujarat, parts of north Bihar and the Andaman and Nicobar archipelago.
6. Parts of Jammu and Kashmir, Delhi, Sikkim, northern Uttar Pradesh, West Bengal, Gujarat and a small part of Maharashtra fall under Zone IV.
7. Bhuj, which was struck by a massive earthquake in 2001 in which 20,000 people were killed, Chandigarh, Ambala, Amritsar, Ludhiana and Roorkee fall under zones IV and V.
8. **The Himalayan arc**, stretching from the upper Assam region to Jammu and Kashmir, is known to be a high seismic zone and these cities in the Indo-Gangetic belt fall within reasonable limits of the Himalayas. So repercussions are bound to be felt there.
9. The NCS has also carried out micro-zonation of cities like Delhi and Kolkata to study the possible impact of earthquake in these mega cities.

Flexible bio-glue

Scientists have developed a **super strong, flexible adhesive material inspired by the glue secreted by slugs that sticks to biological tissues** – even when wet – without causing toxicity. The "**tough adhesive**" is biocompatible and binds to tissues with strength comparable to the **body's own resilient cartilage**, researchers said. "The key feature of our material is **the combination of a very strong adhesive force**and the ability to transfer and dissipate stress, which have historically not been integrated into a single adhesive.

Page 24

What

1. **Slugs secrete a special kind of mucus** when threatened that glue it in place, making it difficult for a predator to pry it off its surface.

2. This glue was previously determined to be composed of a tough matrix peppered with **positively charged proteins**, which inspired Jianyu Li, an assistant professor at McGill University in Canada and colleagues to create a **double-layered hydrogel consisting of an alginate-polyacrylamide matrix** supporting an adhesive layer that has positively-charged polymers protruding from its surface.

3. The **polymers bond to biological tissues via three mechanisms** – electrostatic attraction to negatively charged cell surfaces, covalent bonds between neighbouring atoms, and physical interpenetration – making the adhesive extremely strong.

4. The **team's design for the matrix layer includes calcium ions** that are bound to the alginate hydrogel via ionic bonds. When stress is applied to the adhesive, those "sacrificial" ionic bonds break first, allowing the matrix to absorb a large amount of energy before its structure becomes compromised.

5. In experimental tests, **more than three times the energy was needed to disrupt the tough adhesive's bonding** compared with other medical-grade adhesives. When it did break, what failed was the hydrogel itself, not the bond between the adhesive and the tissue, demonstrating an unprecedented level of simultaneous high adhesion strength and matrix toughness.

6. The researchers **tested their adhesive on a variety of both dry** and wet pig tissues including skin, cartilage, heart, artery, and liver, and found that it bound to all of them with significantly greater strength than other medical adhesives.

7. The tough adhesive also maintained its stability and bonding when implanted into rats for two weeks, or when used to seal a hole in a pig heart that was mechanically inflated and deflated and then subjected to tens of thousands of cycles of stretching.

8. **It also caused no tissue damage or adhesions to surrounding tissues when applied to a liver hemorrhage in mice** – side effects that were observed with both super glue and a commercial thrombin-based adhesive.

New material to convert CO2 into fuel

Scientists have developed a **material that can help convert carbon dioxide into fuel** and other **energy-rich products using light without generating unwanted byproducts**. The achievement marks a significant step forward in developing technology that can generate fuel, while **mitigating levels of a potent greenhouse gas** using solar power. When exposed to visible light, the material, a "**spongy" nickel organic crystalline structure**, **converted carbon dioxide (CO2) into carbon monoxide (CO) gas**, which can be further turned into liquid fuels, solvents, and other useful products.

What

1. **We show a near 100 per cent selectivity of CO production**, with no detection of competing gas products like hydrogen or methane," said scientist at US Department of Energy's Lawrence **Berkeley National Laboratory (Berkeley Lab)**.

2. In chemistry, reduction refers to the gain of electrons in a reaction, while oxidation is when an atom loses electrons.

3. Among the well-known examples of carbon dioxide reduction is in photosynthesis, when plants transfer electrons from water to carbon dioxide while creating carbohydrates and oxygen. **Carbon dioxide reduction needs catalysts to help break the molecule's stable bonds**.

4. Interest in developing catalysts for solar-powered reduction of carbon dioxide to generate fuels has increased with the rapid consumption of fossil fuels over the past century, and with the desire for renewable sources of energy.

5. Researchers have been **particularly keen on eliminating competing chemical reactions in the reduction of carbon dioxide**. Complete suppression of the competing hydrogen evolution during a **photocatalytic CO2-to-CO conversion** had not been achieved before our work.

Maryam Mirzakhani dies

Maryam Mirzakhani, an Iranian-born mathematician who was the **first woman to win the coveted Fields Medal,** has died in a US after a battle with cancer. She was 40. Mirzakhani, **a professor at Stanford University in California**, died after cancer she had been battling for four years spread to her bone marrow.

What

1. **In 2014 Mirzakhani won the Fields Medal**, the equivalent of the Nobel Prize for Mathematics, which is awarded by the **International Congress of Mathematicians**.

2. The award recognized her sophisticated and highly original contributions to the fields of geometry and dynamical systems, particularly in understanding the symmetry of curved surfaces such as spheres.

3. In 2008 she became a professor of mathematics at Stanford. She is survived by her husband and young daughter.

4. Mirzakhani became known on the international mathematics scene as a teenager, winning gold medals at both the 1994 and 1995 International Math Olympiads — and finished with a perfect score in the latter competition.

5. **The Fields Medal, which she won in 2014**, is given out every four years, often to multiple winners aged 40 or younger.