

My Notes....

NATIONAL

INDIA NOW HAS A WITNESS PROTECTION PROGRAMME

The Supreme Court 5 December 2018 approved a Witness Protection Scheme drawn up by the government and asked the Centre, states and Union Territories to **“enforce” it “in letter and spirit”**. The court held that the right to life would include the right of witnesses to testify freely in courts. Approving the Scheme, a bench of Justices A K Sikri and S Abdul Nazeer said: “The right to testify in courts in a free and fair manner without any pressure and threat whatsoever is under serious attack today. If one is unable to testify in courts due to threats or other pressures, then it is a clear violation of Article 21 of the Constitution. The right to life guaranteed to the people of this country also includes in its fold the right to live in a society, which is free from crime and fear, and the right of witnesses to testify in courts without fear or pressure.”

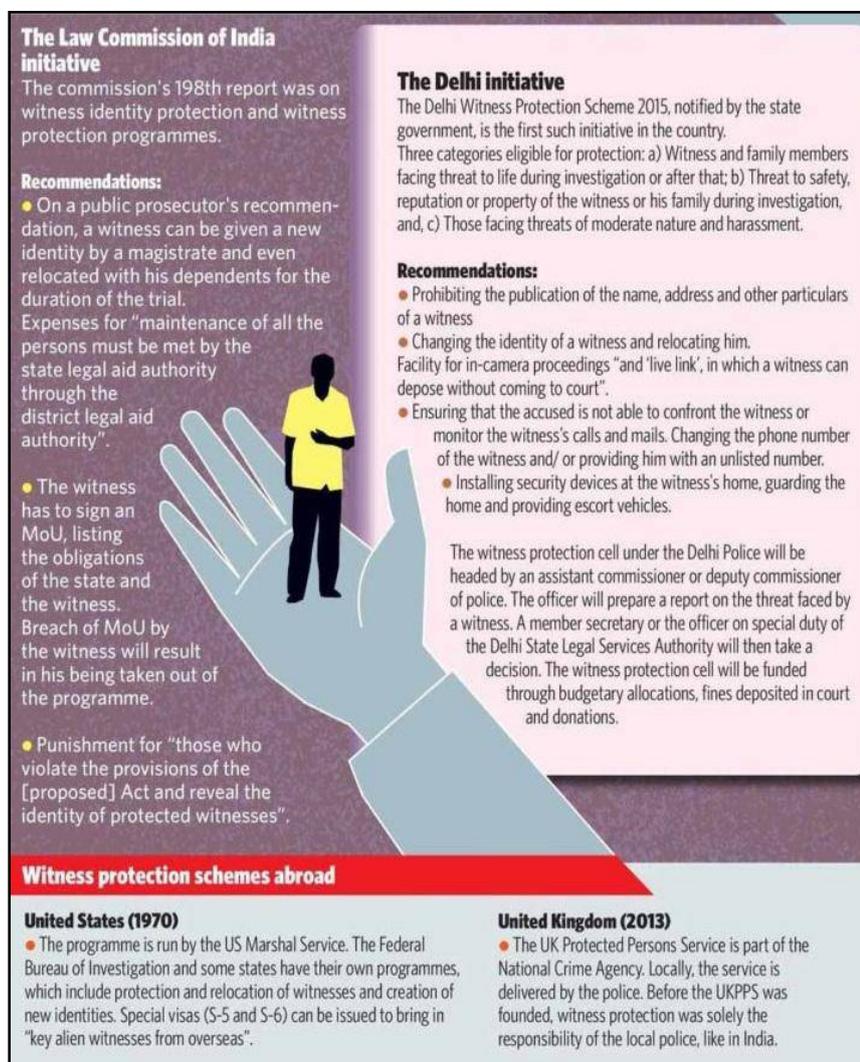
What

1. The court said **“it shall be the ‘law’ under Article 141/142 of the Constitution, till the enactment of suitable Parliamentary and/or State Legislations on the subject”**.

2. The question of witness protection had come up in a PIL that sought protection for witnesses in cases against Gujarat-based preacher Asaram Bapu.

3. The Scheme was drawn up by the Centre in 2018 with inputs from 18 states/Union Territories, legal services authorities of five states and open sources

including civil society, three High Courts as well as from police personnel with **the aim and objective** “to ensure that the investigation, prosecution and trial of criminal offences is not prejudiced because witnesses are intimidated or frightened to give evidence without protection from violent or other criminal **recreation**”.



The Law Commission of India initiative
The commission's 198th report was on witness identity protection and witness protection programmes.

Recommendations:

- On a public prosecutor's recommendation, a witness can be given a new identity by a magistrate and even relocated with his dependents for the duration of the trial. Expenses for “maintenance of all the persons must be met by the state legal aid authority through the district legal aid authority”.
- The witness has to sign an MoU, listing the obligations of the state and the witness. Breach of MoU by the witness will result in his being taken out of the programme.
- Punishment for “those who violate the provisions of the [proposed] Act and reveal the identity of protected witnesses”.

The Delhi initiative
The Delhi Witness Protection Scheme 2015, notified by the state government, is the first such initiative in the country. Three categories eligible for protection: a) Witness and family members facing threat to life during investigation or after that; b) Threat to safety, reputation or property of the witness or his family during investigation, and, c) Those facing threats of moderate nature and harassment.

Recommendations:

- Prohibiting the publication of the name, address and other particulars of a witness
- Changing the identity of a witness and relocating him. Facility for in-camera proceedings “and ‘live link’, in which a witness can depose without coming to court”.
- Ensuring that the accused is not able to confront the witness or monitor the witness's calls and mails. Changing the phone number of the witness and/ or providing him with an unlisted number.
- Installing security devices at the witness's home, guarding the home and providing escort vehicles.

The witness protection cell under the Delhi Police will be headed by an assistant commissioner or deputy commissioner of police. The officer will prepare a report on the threat faced by a witness. A member secretary or the officer on special duty of the Delhi State Legal Services Authority will then take a decision. The witness protection cell will be funded through budgetary allocations, fines deposited in court and donations.

Witness protection schemes abroad

United States (1970)
● The programme is run by the US Marshal Service. The Federal Bureau of Investigation and some states have their own programmes, which include protection and relocation of witnesses and creation of new identities. Special visas (S-5 and S-6) can be issued to bring in “key alien witnesses from overseas”.

United Kingdom (2013)
● The UK Protected Persons Service is part of the National Crime Agency. Locally, the service is delivered by the police. Before the UKPPS was founded, witness protection was solely the responsibility of the local police, like in India.

4. The expenses for the programme will be met from a Witness Protection Fund to be established by states and Union Territories.
5. They should make annual budgetary allocation for the fund which will also be free to accept donations from national and international philanthropic organisations and amounts contributed as part of Corporate Social Responsibility.
6. **The application for protection will have to be filed before the “Competent Authority” along with supporting documents.**
7. **The Authority will in turn seek a “Threat Analysis Report” from the ACP/DCP** in charge of the police station. The police officer must submit the report expeditiously. The Authority will be required to dispose an application seeking protection within five days from the date of receipt of the Threat Analysis Report.
8. In its report, the police officer must categorise the threat perception and suggest protective measures.
9. The Authority, while processing the application, shall interact in person and if that is not possible through electronic means with the witness and other relevant persons. Proceedings of the Authority will be held in-camera.
10. The Witness Protection Order passed by the Competent Authority shall be implemented by the Witness Protection Cell of the state or Union Territory.
11. **It also puts the “overall responsibility” for implementing** the order on the head of the police of the state and Union Territory.
12. If the order is for change of identity or relocation, it shall be implemented by the Home department concerned.
13. The Witness Protection Cell will file a monthly follow-up report to the Authority. It also empowers the Authority to call for a fresh Threat Analysis Report if it feels the need to revise its order.

Three categories of witnesses as per threat perception

1. Category A: Those cases where threat extends to life of witness or family members during investigation, trial or even thereafter.
2. Category B: Those cases where the threat extends to safety, reputation or property of the witness or family members during the investigation or trial.
3. Category C: Cases where the threat is moderate and extends to harassment or intimidation of the witness or his family members, reputation or property during the investigation, trial or thereafter.

NEW PROPOSALS EMERGE IN CLIMATE MEET

The Katowice climate change conference finally saw the emergence of a few proposals for agreement on the deadlocked issues, which, initial analysis suggested, seemed loaded in favour of the developed countries, and did not address many key concerns of the developing countries. The proposed agreement texts, that were released late on 13 December 2018 night, covered all the issues, including those related to finance and transparency, that have proved to be extremely contentious in the framing of the rule-book of the 2015 Paris Agreement, which is what the negotiators are trying to achieve. The rule-book will contain the processes and guidelines that will govern the implementation of the Paris Agreement.

What

1. The draft texts released are just proposals. Negotiators will work on the draft and changes can be made.
2. Under the UN system, a final agreement can be reached only through consensus. The two-week conference is scheduled to end on 14 December 2018 but, as has happened in all recent years, is expected to go into extra-time.
3. The draft texts propose a single, uniform mechanism of reporting of climate actions by all countries, ignoring a key demand of the developing countries that a differentiated mechanism be adopted, keeping in view the differing capacities of many of them.

4. Under the Paris Agreement, every country is required to periodically submit information about its climate actions, and the kind of impacts these were having.
5. The nature and extent of information to be provided needed to be made a part of the rule-book. Developing countries had been arguing that a different, and simpler, set of details be asked from them since many of them did not have adequate resources to collect very detailed data.
6. The current proposal acknowledges that developing countries might need technological and financial support in collecting and processing this data, and commits the developed countries to provide this support. However, the provisions regarding this support are currently under brackets, meaning they are up for negotiation.
7. Several other concerns of the developing countries, including those related to finance and differentiation, have not been adequately addressed.
8. The current draft will make a number of countries unhappy. But these are not the **final drafts. We are likely to see a lot of changes in these,** said one observer present at the negotiations.
9. The draft texts were prepared after taking inputs of all the countries in the last four days of consultations. Several informal groups had been formed, each supposed to deal with one contentious issue.
10. Each of these groups had two ministers as co-facilitators, one from a developed country and the other from a developing nation.

INDIA'S HEAVIEST COMMUNICATION SATELLITE LAUNCHED

Indian Space Research Organisation's (ISRO) heaviest and most-advanced high throughput communication satellite GSAT-11 was successfully launched from the Spaceport in French Guiana during the early hours on 5 December 2018. The launch vehicle Ariane 5 VA-246 lifted off from Kourou Launch Base, French Guiana at 02:07 am (IST) carrying **India's GSAT-11** and **South Korea's** GEO-KOMPSAT-2A satellites, as scheduled. Ariane 5 is one of three launch vehicles operated by Arianespace along with Soyuz and Vega.

What

1. After a 30-min flight, GSAT-11 separated from the Ariane 5 upper stage in an elliptical Geosynchronous Transfer Orbit. The achieved orbit was very close to the intended one.
2. The 5,854-kg GSAT-11 will provide high data rate connectivity to users of Indian mainland and islands through 32 user beams in Ku-band and 8 hub beams in Ka-band.
3. GSAT-11 will boost the broadband connectivity to rural and inaccessible Gram Panchayats in the country coming under the Bharat Net Project, which is part of Digital India Programme.
4. The Bharat Net Project aims to enhance the public welfare schemes like e-banking, e-health, e-governance among others.
5. GSAT-11 will act as a

India's heaviest satellite GSAT-11 successfully launched

GSAT-11

GSAT-11 is the next generation high throughput communication satellite and is the heaviest satellite built by ISRO. GSAT-11 is the fore-runner in a series of advanced communications satellite with multi-spot beams covering Indian mainland and Islands. Use of Ka-band is introduced in India, for the first time through indigenous built GSAT-11 satellite.

Salient features

1. Lift of Mass : 5854 kg
2. Orbital Location : 74° E
3. Spacecraft Power : 13.6 kW
4. Payload : 32 user beams (Ku-band) & 8 Hub beams (Ka-band)
5. Throughput data rate : 16 Gigabits per second
6. Mission Life : 15 Years



1st 6 ton class satellite of ISRO

34th Communication Satellite built by ISRO



4x4 Hub beams in Ka-band
 4 Colour frequency reuse
 Ka + Ku cross link
 GSAT-11 in Geostationary Orbit
 16x16 User beams in Ku-band
 4 Colour frequency reuse
 Polarization reuse in Hub and user beams

- GSAT-11 provides high data rate connectivity for users over India using spot beams.
- It provides broadband connectivity to Gram Panchayats under BharathNet project, as part of Digital India programme.
- GSAT-11 also supports high data applications for enterprise network and consumer broadband applications.

forerunner to all future high throughput communication satellites. Today's successful mission has boosted the confidence of the entire team.

6. Post-separation, ISRO's Master Control Facility at Hassan in Karnataka took over the command and control of GSAT-11 and found its health parameters normal.
7. The scientists will undertake phase-wise orbit-raising manoeuvres in the days ahead to place the satellite in the Geostationary Orbit (36,000 km above the equator) using its on-board propulsion systems. GSAT-11 will be positioned at 74-degree east longitude in the geostationary orbit.
8. Subsequently, the two solar arrays and four antenna reflectors of GSAT-11 will be deployed in orbit. The satellite will be operational after the successful completion of all in-orbit tests.
9. In the last 21 days, ISRO successfully completed three satellite and two launch vehicle missions.

PARTNERS FORUM 2018

The fourth Partners' Forum, known as Partners' Forum 2018, was held in Delhi on 12 December 2018, with Indian Prime Minister Narendra Modi inaugurating the global meeting on infant and maternal health. The Government of India, in association with the Partnership for Maternal, Newborn and Child Health (PMNCH), is hosting a two-day international conference from 12 December 2018, bringing together about 1,500 participants from across 85 countries to improve the health and well-being of women, children and adolescents.

What

1. The objective of the conference is to improve knowledge, alignment and accountability to accelerate action on health for women, children and adolescents.
2. India was one of the first countries, to advocate focused attention on adolescence and implement a full-fledged health promotion and prevention programme for adolescents.
3. India stands ready to support its fellow countries in the march to achieving their development goals through skill building and training programmes, provision of affordable medicines and vaccines, knowledge transfers and exchange programs.
4. According to officials, the ongoing programme is the fourth in a series of global high-level multi-country, multi-stakeholder events which aimed at sustaining global momentum for issues related to health of women, children and adolescents.

Flashback

1. **The Partners' Forum is co-hosted** by Ministry of Health and Family Welfare and the Partnership of Maternal, Newborn and Child Health (PMNCH).
2. The two-day event brings together more than 1200 participants from 85 countries in New Delhi, to deliberate on issues of health and well-being of women, children and adolescents.
3. **Partners' Forum is a global health partnership** launched in September 2005 to accelerate efforts to reduce child and maternal mortality, improve adolescent, child, newborn and maternal health.
4. This partnership is an alliance of more than 1,000 plus members, across 10 constituencies in 92 countries: academic, research and teaching institutions; donors and foundations; health care professionals; multilateral agencies; non-governmental organizations; partner countries; global financing mechanisms and the private sector.
5. The previous chapters were held in Johannesburg, South Africa (2014), New Delhi, India (2010) and Dar es Salaam, Tanzania (2007). This is the **second time India is hosting the Partners' Forum**.

- Over 24 best practices/innovations are being showcased under four theme-based pavilions - Ayushman Bharat Hub, Health System Strengthening Hub, Nutrition Hub and Adolescent and Youth Hub.

INDIA GETS WTO NOD TO ESTABLISH DISPUTE PANEL

India on 4 December 2018 secured the World Trade **Organization's (WTO's)** permission to establish a dispute settlement panel to rule on controversial unilateral duties imposed by the US on the imports of steel and aluminium under the controversial US Section 232 security provisions. At a dispute settlement body meeting 4 December, India pressed ahead with its second request for establishing the panel on the grounds that the additional duties of 25% on steel products and 10% on aluminium imposed are **"inconsistent with the US' WTO obligations under the GATT** (General Agreement on Tariffs and Trade) 1994 and the Agreement on Safeguards."

What

- The US blocked India's first request on 21 November** but, under WTO rules, when a complainant makes a second request the panel is automatically established. On 4 December 2018, Switzerland joined India in making a second request against the American duties.
- In turn, India and Switzerland join seven members—China, the EU, Canada, Mexico, Norway, Turkey and Russia—who have already secured the nod for establishing the panel against the US.
- This collective resort to dispute settlement reflects the serious concern of the **WTO Membership over the United States' actions, India said, emphasizing that "it also reflects trust and confidence in the WTO as forum for resolving international trade disputes."**
- It called for a "single panel" to rule on the US tariffs**, as all the complaints are related to the same matter. India said a single panel will be able to examine these **disputes, "particularly given the complainants' willingness to coordinate and proceed in this matter."**
- At present, there are nine panels that are established and it remains to be seen whether a single panel will be constituted. Nevertheless, the panel proceedings will begin and the three members for the panel have to be agreed by the both sides. If there is no agreement among the complainants on the one side and the US on the other, then, the WTO director general will be asked to constitute the panel.
- The US has warned that the legitimacy of the dispute settlement system and the viability of the trade body would be undermined if the WTO were to initiate panel proceedings against the additional duties.
- Washington issued several threats against the complainants, who have maintained **that the additional duties are "safeguard" measures**. The US has all along maintained that the additional duties are not safeguard measures.
- The US has maintained that the duties imposed on steel and aluminium are **"issues of national security and political matters not susceptible to review or capable of resolution by WTO dispute settlement."**
- If the WTO was to undertake to review an invocation of Article XXI [security exceptions], **this would undermine the legitimacy of the WTO's dispute settlement system and even the viability of the WTO as a whole**, the US has said.
- It has warned that "infringing on a sovereign's right to determine, for itself what is in its own essential security interests would run exactly contrary to the WTO reforms that are necessary in order for this organization to maintain any relevancy."**

ECBC-R LAUNCHED

The Ministry of Power, on the occasion of National Energy Conservation Day (14 December 2018), launched ECO Niwas Samhita 2018, an Energy Conservation Building Code for Residential Buildings (ECBC-R). The objective is to benefit the occupants and

environment by promoting energy efficiency in design and construction of homes, apartments and townships.

What

1. The building sector will have highest growth in energy demand in the coming 10-15 years. The Government is encouraging all building professionals including architects, builders to generate awareness towards energy conservation while constructing new residential homes.
2. The Code is expected to assist large number of architects and builders who are involved in design and construction of new residential complexes in different parts of the country.
3. Implementation of this Code will have potential for energy savings to the tune of 125 billion units of electricity per year by 2030, which is equivalent to about 100 million tonnes of carbondioxide emission.

INDIA WATER IMPACT SUMMIT-2018

Union Minister for Water Resources, River Development and Ganga Rejuvenation Shri Nitin Gadkari inaugurated India Water Impact Summit 2018, was jointly organized by the National Mission for Clean Ganga (NMCG) and the Centre for Ganga River Basin Management and Studies (cGanga) on 5-7 December 2018 in New Delhi.

The India Water Impact Summit is an annual event where stakeholders get together to discuss, debate and develop model solutions for some of the biggest water related problems in the country. The discussions this year was on rejuvenation of the Ganga River Basin.

What

1. There were multi-country dialogue on the subject, with showcasing of technological innovations, research, policy frameworks and funding models from India and abroad.
2. A number of Indian Central Government Ministries as well as all key decision makers responsible for delivering the rejuvenation of the Ganga was also be present at the Summit.
3. The efforts may take various forms including (but not limited to): data collection (sensors, LIDAR, modelling etc), hydrology, e-flows, agriculture, waste water and more.

The Summit focus on three key aspects

1. Spotlight on 5 states: Uttarakhand, Uttar Pradesh, West Bengal, Delhi and Bihar. The objective is to showcase the efforts and works going on within the respective states.
2. Ganga Financing Forum: The 2018 Summit also introduces the inaugural Ganga Financing Forum that will bring a number of institutions to a common knowledge, information and partnership platform.
3. The Hybrid Annuity Model has redefined the economic landscape of water and waste-water treatment in India. All tenders have been successfully bid out and financial closures being achieved.
4. Additionally, the Government is also now encouraging development of smaller decentralised waste water treatment projects. The Financing Forum will bring together financial institutions and investors interested in Namami Gange programmes.
5. Technology and Innovation: Implementation of the pilot/demonstration programme known as the Environment Technology Verification (ETV) process.
6. This will provide an opportunity to technology and innovation companies from around the world to showcase their solutions for addressing the problems prevalent in the river basin.
7. Nearly 200 domestic and international participants from nearly 15 countries and more than 50 Central, State and Municipal Government representatives are likely to participate in the summit.

- There will be sessions on Afforestation and Biodiversity, Urban River/Water Management Plans, Creating a Global Ecosystem for financing the Ganga Rejuvenation Programme and tapping into global capital markets for long term project finance.

TELANGANA PULLS BACK QUOTA PLEA

Telangana withdrew its plea to increase reservation quota for Backward Classes (BCs), SCs and STs in panchayati raj and other local bodies after Supreme Court refused to allow the state to enhance the quota beyond 50%. The state had sought permission for 34% reservations for BCs, 24% to SCs and 9% to STs in the ensuing sarpanch elections as well as in all other panchayati raj and local body elections, taking the total quota proportion to 67%. **Telangana's contention was that such permission was essential** as the population of BCs, SCs and STs is higher in Telangana.

What

- The SC bench told the Telangana counsel that under no circumstances can the state cross the 50% upper cap fixed earlier by the apex court. Telangana then withdrew its plea seeking permission for quota enhancement.
- It may be recalled that the Hyderabad high court had earlier made it clear that all quotas put together cannot exceed 50% as per the judgement of the Supreme Court.
- As the local body elections are already due, the state will have no option but to reduce BC reservation from 34% to 17%, because the reservation for SCs and STs cannot be reduced as the quota it was accorded to them in proportion to their population as mandated by Article 243 of the Constitution.

Flashback

- In *Indra Sawhney vs. Union of India* (1992), Supreme Court upheld the validity of the impugned executive order which provided 27% reservation of jobs to the OBCs under the provision of Article 16(4), with certain conditions like exclusion of creamy layer; maximum reservation should not exceed 50% and so on.
- On the other hand, it invalidated another impugned executive order which provided 10% additional reservation of jobs to the economically backward sections of the higher castes that are not covered by any of the existing schemes of reservations.

GLOBAL HACKATHON ON ARTIFICIAL INTELLIGENCE

With the vision to further expand the idea of Artificial Intelligence, AI for All' articulated in the National AI Strategy, NITI Aayog organises hackathons to source sustainable, innovative and technologically-enabled solutions to address various challenges in the development space. Taking the initiative forward, NITI Aayog is now partnering with Perlin – a Singapore-based AI start up - **to launch the 'AI 4 All Global Hackathon'**, and is inviting developers, students, start-ups and companies to develop AI applications to make significant positive social and economic impact for India.

What

- The challenge question seeks to develop solutions in Distributed Computing and Privacy Preserving techniques, such as multi-party computation, in AI.
- The objective of this hackathon is to promote awareness and subsequently develop solutions that deliver the twin benefit of efficient computing to address the infrastructure challenges, while also not compromising on privacy of data for training AI algorithms.
- NITI Aayog organized its first hackathon, 'MoveHack' in August**, on the sidelines of the Global Mobility Summit 2018, with the aim of garnering cutting-

- edge mobility applications. Over 2,000 submissions were received out of which the Top 10 teams were awarded at the summit.
4. The AI for All Hackathon underscores the commitment of NITI Aayog to supporting meaningful social, economic and technological advancements **directed at making people's lives better.**
 5. **The 'AI 4 All Global Hackathon' was announced at the AI conference** organized by NITI Aayog, in partnership with the ORF, held in Mumbai in November 2018.
 6. The hackathon will be run two stages with Stage One ending 15 January 2019 and Stage Two, which will only include shortlisted participants from the previous stage, will conclude on 15 March 2019
 7. The jury shall comprise of the leaders from the technology and policy ecosystem, namely, Mr Amitabh Kant, CEO, NITI Aayog; Mr Michael Witbrock, Head at AI Foundations Lab IBM; Mr Anandamoy Roychowdhary, Director of Technology at Sequoia Capital; Mr Prahbakar Reddy, Partner at Accel Partners; Professor Anup Malani, Co-founder & Faculty Director of International Innovation Corps; Mr Ery Punta Hendraswara, Innovation Management at Telkom; and Mr Dorjee Sun, CEO of Perlin.
 8. The first stage will invite ideas for use cases of multi-party computation in areas such as Healthcare, Education, Agriculture, Urbanization, Financial Inclusion. The second stage will call for these ideas to be matured and developed, with a focus on privacy preserving AI and distributed computing.
 9. Winners will share in a prize pool worth USD \$50,000 in both cash and non-cash rewards. Participants will also get mentorship and support from the hackathon co-sponsors, including the opportunity to scale and implement their AI applications.

FIRST INDIAN STATE TO HAVE 4 INTERNATIONAL AIRPORTS

The Kannur airport, built on a public-private partnership model, will become a new benchmark of how airports will be constructed in the country. With the commissioning of the airport, the state has become the first in the country to have four international airports,

with Thiruvananthapuram, Kochi and Kozhikode being the other three.

What

1. The airport depicts not only cultural traditions of Malabar and Kannur, but also of Kodagu in neighbouring Karnataka. Virajpet in Kodagu is just only 58-km away from the airport, while district headquarters Madikeri is around 90-km away.
2. The Kannur airport, built on a public-private

Public-private partnership (PPP)

1. Public-private partnership (PPP) is a funding model for a public infrastructure project such as a new telecommunications system, airport or power plant.
2. The public partner is represented by the government at a local, state and/or national level. The private partner can be a privately-owned business, public corporation or consortium of businesses with a specific area of expertise.
3. PPP is a broad term that can be applied to anything from a simple, short term management contract (with or without investment requirements) to a long-term contract that includes funding, planning, building, operation, maintenance and divestiture.
4. PPP arrangements are useful for large projects that require highly-skilled workers and a significant cash outlay to get started.
5. They are also useful in countries that require the state to legally own any infrastructure that serves the public.

partnership (PPP) model, will become a new benchmark of how airports will be constructed in the country.

3. The airport will help the non-resident Keralites (NRKs), especially in the Gulf region, besides boosting tourism and exports, which will result in several job opportunities.
4. The minister also wanted the airport to use green power as it would result in economic savings. India already has about 100 airports and, in 10-15 years, another 100 would be added.
5. The Centre is also preparing an integrated logistics plan to fast-track movement of goods and cut transactions cost of business and center actively working with Kerala government on this.

EX AVIAINDRA 2018

Ex AVIAINDRA, a service specific exercise between Indian Air Force and Russian Federation Aerospace Force (RFSAF), is planned at Air Force Station Jodhpur from 10-21 Dec 2018. The inaugural IAF-RFSAF Ex AVIAINDRA was conducted in 2014.

What

1. AVIAINDRA-2018 is the second in the series of bilateral joint exercise between IAF-RFSAF.
2. The exercise is planned in two phases. The exercise is unique wherein the foreign participant does not bring its air assets.
3. In Russia, the IAF pilots flew alongside their Russian counterparts in RFSAF aircraft at Lipetsk from 17 Sep 18 to 28 Sep 18.
4. In India, the RFSAF pilots will fly alongside their Indian counterparts in the IAF aircraft, which are common to both Air Forces.

Flashback

1. Exercise Aviaindra was conducted for first time in 2014 and since then it is conducted bi-annually (twice a year) in both countries.
2. The aim of this exercise is focused towards anti-terrorist operations in bi-lateral scenario.
3. It also seeks to further enhance co-operation and understanding between Air forces of both countries in each **other's Concept of Operations.**

1ST INTERNATIONAL CONFERENCE ON SWM

The first International Conference under the aegis of National Hydrology Project, Union Ministry of Water Resources, River Development and Ganga Rejuvenation is being organised by Bhakra Beas Management Board (BBMB) during 10-11 December, 2018 at **Indian School of Business (ISB), Mohali on the theme 'Sustainable Water Management (SWM)'. The theme of the Conference deals with** promoting integrated and sustainable development and management of Water Resources.

What

1. A number of Experts & Delegates from reputed organisations from both within India and from other countries like Australia, United Kingdom, USA, Spain, Netherlands, Republic of Korea, Canada, Germany, Sri Lanka etc. will be taking part in the event to deliver their experience and expertise in the use of state of art technology to the stakeholders for sustainable development of water resources.
2. The participation in the conference is by invitation and more than 400 delegates have been registered. About 20 companies and organizations will be putting up stalls in exhibition to show case their activities in the area of sustainable water resources management.
3. The aim of the Conference is to foster the participation of and dialogue between various stakeholders, including governments, the scientific and academic communities, so as to promote sustainable policies for water

management, to create awareness of water-related problems, motivate commitment at the highest level for their solution and thus promote better management of water resources at local, regional, national and international levels.

Formation of BBMB

1. As per the Indus Water Treaty, 1960 signed between India and Pakistan, the waters of three eastern rivers namely the Sutlej, the Beas and the Ravi were allotted to India for exclusive use.
2. A Master Plan was drawn to harness the potential of these rivers for providing assured irrigation, power generation and flood control.
3. Bhakra and Beas Projects form major part of the plan, and were established as a joint-venture of the erstwhile states of Punjab and Rajasthan.
4. On Reorganisation of the erstwhile state of Punjab on 1st November, 1966, Bhakra Management Board (BMB) was constituted under section 79 of the Punjab Reorganisation Act, 1966.
5. The administration, maintenance and operation of Bhakra Nangal Project were handed over to Bhakra Management Board w.e.f. 1st October 1967.
6. The Beas Project Works, on completion, were transferred by Government of India from Beas Construction Board (BCB) to Bhakra Management Board as per the provisions of Section 80 of the Punjab Reorganisation Act, 1966.
7. Pursuant to this Bhakra Management Board was renamed as Bhakra Beas Management Board (BBMB) w.e.f. 15th May 1976.
8. Since then, the Bhakra Beas Management Board is dedicated to the service of nation and is engaged in regulation of the supply of Water & Power from Bhakra Nangal and Beas Projects to the states of Punjab, Haryana, Rajasthan, Himachal Pradesh, Delhi and Chandigarh.

Flashback

1. Sustainable water management is part of sustainable development; meeting the needs of the present without compromising the ability of future generations to meet their own water needs.
2. Achieving sustainable water management requires a multidisciplinary and holistic approach in which technical, environmental, economic, landscape aesthetic, societal and cultural issues are addressed.
3. Further research is required to guide the development of appropriate sustainable water management measures, strategies and policies.

AGNI-5 SUCCESSFULLY TEST-FIRED

India was successfully test-fired nuclear-capable ballistic missile Agni-5, which has a strike range of 5,000 km, from Dr Abdul Kalam Island off the Odisha coast 10 December 2018. This is the seventh trial of the indigenously-developed surface-to-surface missile. Agni-5 is a three-stage missile and is 17 metre tall and 2 metre wide. It is capable of carrying 1.5 tonne of nuclear warheads.

What

1. The missile was launched with the help of a mobile launcher from launch pad-4 of the Integrated Test Range (ITR) at Dr Abdul Kalam Island in the Bay of Bengal on 10 December 2018 afternoon.
2. It was a user associated trial. Strategic force command along with DRDO scientists conducted it.
3. During this trial, the flight performance of the missile was tracked and monitored by radars, tracking instruments and observation stations.
4. India has in its armoury the Agni missile series -- Agni-1 with a range of 700 km, Agni-2 with a range of 2,000 km, Agni-3 and Agni-4 with 2,500 km to more than 3,500 km range.

5. The Agni-5 is the latest and most advanced variant in terms of navigation and guidance, warhead and engine.
6. The high-speed onboard computer and fault-tolerant software, along with robust and reliable bus guided the (Agni-5) missile flawlessly (during the test).
7. The missile is programmed in such a way that after reaching the peak of its trajectory, it turns towards the earth to continue its journey to the target with an increased speed, due to the earth's gravitational pull, and its path precisely directed by the advanced onboard computer and inertial navigation system.
8. As the missile enters the earth's atmosphere, the atmospheric air rubbing its outer surface skin raises the temperature to beyond 4,000 degree Celsius. However, the indigenously-designed and developed heat shield maintains the inside temperature at less than 50 degree Celsius.
9. Finally, commanded by the on-board computer with the support of laser gyro-based inertial navigation system, micro inertial navigation system (MINS), fully digital control system and advanced compact avionics, the missile hit the designated target point accurately, meeting all mission objectives.
10. The first two flights of Agni-5 in 2012 and 2013 were in open configuration. The third, fourth and fifth launch were from canister integrated with a mobile launcher that enables launch of the missile in a shorter time as compared to an open launch.
11. The missile has advantages of higher reliability, longer shelf life, less maintenance and enhanced mobility.
12. The first test was conducted on April 19, 2012, the second on September 15, 2013, the third on January 31, 2015 and the fourth one on December 26, 2016.
13. The fifth test was held on January 18 this year and the last one was held on June 3, 2018. All the trials were successful.

DSRV INDUCTED

The Indian Navy 12 December 2018 inducted the 'Deep Submergence Rescue Vehicle' into service at the Western Naval Command. Chief of the Naval Staff Admiral Sunil Lanba inducted the vehicle into the Navy. "The induction of the vehicle has put the Indian Navy into a small league of world navies that have an integral submarine rescue capability. The Navy successfully concluded maiden trials of the Deep Submergence Rescue Vehicle (DSRV) on October 15.

What

1. The DSRV carried out underwater mating with a bottomed submarine, at a depth of over 300 feet. On successful mating, the DSRV opened its hatches and the submarine hatches and carried out transfer of personnel from the submarine to the DSRV.
2. These sea trials have proven the newly inducted DSRV's ability to undertake rescue operations from disabled submarines at sea and provided the Navy with a critical capability.
3. During the trials, the DSRV also dived successfully up to 666 metres, which is a record for deepest submergence by a 'manned vessel' in Indian waters.
4. The DSRV crew carried out remotely operated vehicle operations at a depth of over 750 metres and side scan sonar operations at a depth of over 650 metres, which are all 'firsts' for the Indian Navy.

COMPLETE ELECTRIFICATION UNDER SAUBHAGYA

Nine States have achieved complete household electrification under the Saubhagya scheme, according to the Ministry of Power. They are Madhya Pradesh, Tripura, Bihar, Jammu and Kashmir, Uttarakhand, Mizoram, Sikkim, Telangana and West Bengal, a Power Ministry said. The Ministry had recently lowered the household electrification target by around 10 million homes, or about one-fourth of the earlier goal.

What

1. This was because some users have opted out of the electrification programme while some houses are not regularly occupied.
2. With this, 16 States in the country now have 100 per cent household electrification. Many more States such as Maharashtra, Manipur, Arunachal Pradesh, and Chhattisgarh among others are left with a small number of non-electrified households and are expected to achieve saturation any time. The country is expected to achieve 100 per cent household electrification by December 31, 2018.
3. The Power Ministry also said that 31.68 crore LED bulbs have been distributed under the Unnat Jyoti by Affordable LED for All (UJALA) schemes resulting in estimated cost saving of 16,457 crore per year.
4. The estimated energy savings stand at 41.14 billion kWh per year with the avoided peak demand of 8,237 MW and Green House Gas (GHG) emission reduction of 33.32 million tonne of CO₂ a year.
5. The Power Ministry also aims to replace 1.34 crore conventional streetlights with smart and energy efficient LED lights by March, 2019.
6. Till now 74.79 lakh LED street lights have been installed resulting in estimated energy savings of 5.02 billion kWh per year with avoided peak demand of 837 MW and GHG emission reduction of 3.46 million tonne of CO₂ a year.

Flashback

1. The Saubhagya Scheme or Pradhan Mantri Sahaj Bijli Har Ghar Yojana is an Indian government project to provide electricity to all households.
2. The project was announced in September 2017 by Prime Minister Narendra Modi, who said that the aim was to complete the electrification process by December 2018.
3. Certain households identified via the Socio-economic and Caste Census (SECC) of 2011 will be eligible for free electricity connections, while others will be charged Rs. 500.

INTERNATIONAL

G20 SUMMIT

G20 leaders have found the minimum common ground on the global economy at a summit in Buenos Aires with a closing communiqué that left divisions on clear display. The statement offered virtually no concrete promises and, under pressure from US President Donald Trump, avoided language on fighting protectionism and acknowledged **Washington's disagreement on battling climate change**. Here are key points from the communiqué by the Group of 20, which accounts for more than four-fifths of the global economy, after the two-day summit:

Climate change

1. G20 signatories to the Paris Agreement on climate, which is all of them except the **US, pledged the "full implementation" of the pact, which they called "irreversible."**
2. **They also took note, without further pledges, of UN scientists' call for a more ambitious target of reducing warming to 1.5 degrees Celsius above pre-industrial levels.**
3. **But the US reiterated its withdrawal from the agreement, "and affirms its strong commitment to economic growth and energy access and security."**

Trade

1. **Bowing to the view of Trump's administration, the G20 said that multilateral trade was "falling short of its objectives" on promoting growth and job creation.**

2. It called for reforms of the World Trade Organisation “to improve its functioning,” saying progress would be reviewed at next year’s summit in Japan.

IMF

1. Calling the International Monetary Fund crucial to the global safety net, the G20 pledged to provide adequate funding and to meet a goal of finalising **new national quotas in time for the global lender’s spring 2019 meetings.**
2. **The quotas determined each member’s voting rights.** Major emerging economies in the G20 such as China and India have been pressing for a bigger say at the IMF.

Corruption

1. **The G20** “committed to prevent and fight corruption and lead by example,” promising action from 2019 through 2021 on cleaning up state-run enterprises.

Gender inequality

1. The G20 recommitted to a four-year-old goal of reducing the gender gap in the labor force by 25 percent by 2025. It supported doing more, including increasing efforts to bring education to girls.

Future of work

1. Noting that new technologies will transform the nature of labour, the G20 called for **“an inclusive, fair and sustainable” future of work, with retraining of workers** where needed.

Infrastructure

1. Calling infrastructure a key driver of global growth, the G20 called for greater standardisation in contract-making to encourage more private capital.

INDIA ABSTAINS FROM VOTING ON HAMAS

India has abstained from voting on a UN General Assembly draft resolution put forward by the US that would have condemned the activities of Hamas and other militant groups in Gaza. The resolution 'Activities of Hamas and other militant groups in Gaza' got 87 votes in favour, 58 against with 32 abstentions. The resolution failed to be adopted as it could not garner two-thirds support in the General Assembly.

What

1. India was among the 32 countries that abstained from voting on the resolution which would have condemned Hamas for "repeatedly firing rockets into Israel and for inciting violence, thereby putting civilians at risk", and for its use of resources in Gaza to construct military infrastructure including tunnels to infiltrate Israel and equipment to launch rockets into civilian areas.
2. The resolution had specified that further engagement by the UN Secretary-General, and the UN Special Coordinator for the Middle East Peace Process, in efforts to de-escalate the situation in Gaza, was also needed.

Flashback

1. Hamas is a Palestinian Sunni-Islamist fundamentalist organization. It has a social service wing, Dawah, and a military wing, the Izz ad-Din al-Qassam Brigades.
2. It has been the de facto governing authority of the Gaza Strip since its takeover of that area in 2007. During this period it fought several wars with Israel.
3. It is regarded, either in whole or in part, as a terrorist organization by several countries and international organizations, most notably by Israel, the United States and the European Union.
4. Russia, China, and Turkey are among countries who do not regard it so.
5. Hamas was founded in 1987.

3. Through a procedural vote held before the main vote on the resolution, the Assembly had voted to apply the two-thirds majority requirement for the adoption of the draft.
4. Before the voting, US Permanent Representative to the UN Nikki Haley said that despite more than 500 General Assembly resolutions condemning Israel, not one condemning Hamas has ever been adopted.
5. She described the two-thirds decision, which passed by just a handful of votes, as "unfair" adding that the Hamas resolution was an opportunity for States to "do the right thing."

SAUDI ARABIA HOSTS GCC SUMMIT

The Gulf **Cooperation Council's (GCC) annual summit** was set to open in Riyadh on 9 December 2018, with regional unity imperilled by a bitter row between Qatar and Saudi Arabia, which is mired in a diplomatic crisis over the murder of journalist Jamal Khashoggi. The one-day annual gathering of leaders from the six member states is expected **to focus on security issues, including the Yemen war and Iran's regional activities, and may touch on oil politics and a protracted boycott of Qatar by some neighbours.**

What

1. Saudi Arabia, the United Arab Emirates, Bahrain and non-GCC member Egypt cut diplomatic and economic ties with Qatar in June 2017 over allegations of supporting terrorism.
2. Qatar, which last week abruptly announced it was withdrawing from the oil **exporters' group** OPEC, denies the charges and says the boycott aims to curtail its sovereignty.
3. **The Saudi king has invited Qatar's emir to the summit, but Doha has not said what level of representation it would send. The emir attended last year's gathering** in Kuwait, while Saudi Arabia, the UAE and Bahrain sent more junior officials.
4. The UAE delegation to the Riyadh summit will be headed by Prime Minister and Vice-President Sheikh Mohammed bin Rashid al-Maktoum, who is also ruler of Dubai.
5. The GCC — set up in 1980 as a bulwark against larger neighbours Iran and Iraq — **groups Saudi Arabia, UAE, Bahrain, Oman, Kuwait and Qatar. Kuwait's** ties with Riyadh have also been strained over control of shared oilfields.
6. A US State Department official said that Washington would continue to support the Saudi-led military coalition in Yemen and urged Gulf states to mend fences, including to enable a proposed new Middle East security alliance that would include the Gulf bloc, Egypt and Jordan.
7. **Qatar's exit from OPEC after 57 years** to focus on gas appeared to be a swipe at the **bloc's de facto leader Saudi Arabia. The move has deepened the sense among** diplomats and analysts that any prospect for a near-term resolution to the dispute is unlikely at Riyadh summit.
8. Relations have also soured between Saudi Arabia and Kuwait over oil production from two jointly-run oilfields in the so-called Neutral Zone after talks in September failed to move the two countries closer to a deal.

MOU INK FOR PROJECTS IN THIRD COUNTRIES

India & UAE for the first time will sign a memorandum of understanding (MoU) to set up projects in third countries beginning with Ethiopia during Foreign Minister Sushma Swaraj's ongoing visit to the Gulf country. The MoU will focus on third country projects beginning with Africa under the South-South cooperation model. India and UAE will collaborate to set up an IT excellence centre in Ethiopia riding on Delhi's expertise and UAE's funds in the Eastern African country. While Ethiopia is the highest **recipient of India's concessional loans** outside South Asia, UAE enjoys political goodwill in the country for having mediated between Ethiopia and Eritrea.

What

1. This will be India's second third-country project in Africa after Delhi and Tokyo during their October annual summit decided to set up a hospital in Kenya.
2. The MoU on development cooperation in Africa being signed between India and UAE will be a significant outcome since it will be a first of its kind in South-South Government to Government (G-to-G) bilateral cooperation for taking up a specific project in Africa.
3. Cooperation in Africa, such as organising an SME development seminar in Kenya and seeking a possibility of a collaborative project in the area of health service such as developing a cancer hospital in Kenya.
4. The two countries also acknowledged the importance of expanding cooperation in human resource development, capacity building, healthcare, livelihood, water, sanitation and in the digital space, and of working together to extend access to education, health and other amenities, and assist the people of the Indo-Pacific, including Africa, to realize their developmental potentials.
5. Africa is the focus under the Narendra Modi government amid China's push in the continent and countries from Europe are also keen to partner India for projects in third countries in Africa.
6. Delhi and Abu Dhabi are also in talks to set up second strategic oil reserve in India with UAE's support, increasing funds for infrastructure projects in India, defence purchases and space as the Gulf country seeks to create a niche for itself in partnership with India.
7. India has emerged as a suitable partner for UAE in the changing geo-politics and geo-economics. PM Narendra Modi's two visits to UAE since 2015 and Abu Dhabi Crown Prince's two trips to India in 2016 & 2017 have opened a new chapter in strategic partnership.

QATAR TO WITHDRAW FROM OPEC

Qatar said on 3 December 2018 it was quitting OPEC from January 2019 but would attend the oil exporter group's meeting this week, saying the decision meant Doha could focus on cementing its position as the world's top liquefied natural gas (LNG) exporter. Doha, one of the smallest oil producers in the Organisation of the Petroleum Exporting Countries (OPEC), is locked in a diplomatic dispute with the group's de-facto leader Saudi Arabia but said the move to leave OPEC was not driven by politics.

What

1. Minister of State for Energy Affairs Saad al-Kaabi told that Qatar, which he said been a member of OPEC for 57 years, would still attend the group's meeting this week, and would abide by its commitments.
2. Qatar has oil output of only 600,000 barrels per day (bpd), compared with the 11 million bpd produced by Saudi Arabia, the group's biggest oil producer and world's biggest exporter. But Doha is an influential player in the global LNG market with annual production of 77 million tonnes per year, based on its huge reserves of the fuel in the Gulf.

Strategic decision

1. Al-Kaabi, who is heading Qatar's OPEC delegation, said the decision was not political but related to the country's long-term strategy and plans to develop its gas industry and increase LNG output to 110 million tonnes by 2024.
2. OPEC members, Saudi Arabia and the United Arab Emirates, and fellow Arab states Bahrain and Egypt, have imposed a political and economic boycott on Qatar since June 2017, accusing it of supporting terrorism. Doha denies the charges and says the boycott aims to impinge on its sovereignty.
3. Qatar Petroleum planned to raise its production capability from 4.8 million barrels oil equivalent per day to 6.5 million barrels in the next decade. Doha also plans to build the largest ethane cracker in West Asia.

3. OPEC and its allies, including Russia, are expected to agree on a supply cut at this week's meeting in a bid to support crude prices that have slid almost 30 per cent since October.
4. Oil prices surged about 5 per cent on 3 December 2018 after the United States and China agreed to a 90-day truce in their trade war, but Brent crude is still trading at around \$62 a barrel, well below October's peak of more than \$86.

5 ACTION POINTS IN INDO-PACIFIC REGION

India, Japan and the US have agreed that a “free, open, inclusive and rules-based” order is essential for the Indo-Pacific’s peace and prosperity as the leaders from the three countries held a trilateral meeting for the first time, amid China flexing its muscles in the strategic region. Prime Minister Narendra Modi, US President Donald Trump and Japanese Prime Minister Shinzo Abe had a **“very good” and “friendly” meeting** on the sidelines of the G-20 summit in Buenos Aires.

What

1. **Asserting that India will “continue to work together on shared values,”** “When you look at the acronym of our three countries -- Japan, America, and India -- it is ‘JAI’, which stands for success in Hindi.
2. **The Prime Minister said the ‘JAI’ meeting** was a convergence of vision between the three nations. This is a very good occasion for the three countries -- countries which have shared values, democratic values...We will continue to play a big role together for world peace, prosperity and stability.
3. **Modi underscored India’s firm commitment to make the** Indo-Pacific a region for shared economic growth and common prosperity. The Prime Minister articulated five action points that would serve the common interest of promoting peace and prosperity in the Indo-Pacific region.
4. Modi also underlined the importance of building consensus on architecture in the Indo-Pacific region based on the principles of mutual benefit and respect for sovereignty and territorial integrity.
5. The trilateral meeting took place at a time when China is engaged in hotly contested territorial disputes in the South China Sea, and with Japan in the East China Sea. Both the areas are said to be rich in minerals, oil and other natural resources.
6. China claims almost all of the South China Sea. Vietnam, the Philippines, Malaysia, Brunei and Taiwan have overlapping claims in the waterway, which includes vital sea lanes through which about \$ 3 trillion in global trade passes each year.

India to host G20 Summit in 2022

1. Prime Minister Narendra Modi on 1 December 2018 said India will host the G20 Summit in 2022, the year the country will celebrate the 75th Independence Day.
2. The announcement was made at the closing ceremony of the two-day summit held **in Argentina’s capital Buenos Aires.**
3. Italy was to host the international forum in 2022. Thanking Italy for allowing India to play the host, Modi invited G-20 leaders to India in 2022, which also **marks the 75th anniversary of India’s Independence. The G-20 is a grouping of the world’s 20 major economies.**
4. G-20 members comprise Argentina, Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the UK and the US.
5. Collectively, the G-20 economies account for nearly 90 per cent of the gross world product, 80 per cent of world trade, two-thirds of the world population, and approximately half of the world land area. Spain is a permanent guest invitee.

CHINA REJECTS INDIA'S PROPOSAL

China has not accepted India's proposal to carry out bilateral trade in local currencies which was aimed at bridging the ballooning trade deficit with the neighbouring country. **India's exports to China stood at only \$13.4 billion**, imports aggregated to \$76.4 billion in 2017-18, leaving a trade deficit of \$63 billion. It was \$51.11 billion in 2016-17.

What

1. The issue was discussed in an inter-ministerial meeting in October. In the meeting, it was suggested to the Reserve Bank of India and the Department of Economic Affairs would look at the possibility of exploring renminbi-rupee trade with China.
2. India has also proposed trade in national currencies with some other countries, including Russia, Iran and Venezuela. New Delhi has trade deficit with these three countries, too.
3. The Federation of Indian Export Organisations (FIEO) President Ganesh Kumar Gupta said that the government should promote exports from India in the domestic currency.
4. Trade experts have stated that bilateral trade in domestic currencies will help India only in the case of those countries with which it has a trade balance.
5. Trade imbalance should not be there with the country with which we want to do trade in rupee. It will not help in bridging the deficit. The partner country should have an opportunity to invest in India to use the rupee.
6. Recently, China has permitted exports of rice and sugar. But India wants to increase exports of several other items, including pharmaceuticals, engineering and services.

NEPAL BANS USE OF INDIAN CURRENCY

Nepal's government has banned the use of Indian currency notes of 2,000, 500 and 200 denominations, in a move that could affect Indian tourists visiting the Himalayan nation, where Indian currency is widely used, as well as Nepalese working in India. Indian currency is extensively used by Nepalese people and businesses for their savings and transactions.

What

1. The government has asked the people to refrain from keeping or carrying Indian bank notes higher than 100 denominations as it has not legalised them. The government will soon issue a formal notice in this matter.
2. **India is Nepal's largest trade partner and supplies the majority of its consumer goods.**
3. The Indian government introduced new banknotes of 2,000, 500 and 200 after the demonetisation of old 500 and 1,000 notes in 2016.
4. The move hit countries such as Nepal and Bhutan, where Indian currency is widely used.

ECONOMY

CBDT TO HOST WCO MEET

The Central Board of Indirect Taxes and Customs (CBIC) discuss new-age products such as 3D printing, blockchain and drones at the 80th Session of Policy Commission meeting of World Customs Organisation (WCO), held from 3 December 2018. The three-day event inaugurated by Finance Minister, Arun Jaitley, and attended by 102 delegates from 33 nations. Till date the CBIC was collecting duties on tangible goods but with the rise of the digital economy, 3D printing, darknet and other modes, goods are being traded in a digital manner. Till 2019, there is a moratorium on levy of duty on 3D printing by WTO. But CBIC has to be prepared if the moratorium is lifted.

What

1. During the sessions, trade-based illicit financial flows and money laundering discussed in great details.
2. Issues such as double billing, over-invoicing, under-invoicing and round-tripping of money would be discussed.
3. Illicit money across borders is a matter of concern for CBIC as it has grave implications for terror financing. The Customs Department of various countries can play an important role in curbing such finances, he said.
4. The Revenue Secretary will also attend the meet and deliberate on various issues relating to World Customs Tariffs, trade facilitation measures, international issues on trade under the ambit of WCO.
5. **The event assumes significance in view of the fact that recently India's rank in the World Bank's Ease of Doing Business 2018 survey climbed 23 places to 77 among the top 10 improvers for the second consecutive year.**
6. Globally, 180 countries are members of the World Customs Organisation (WCO) which is headquartered in Brussels.

Flashback

1. The World Customs Organization (WCO), established in 1952 as the Customs Co-operation Council (CCC) is an independent intergovernmental body whose mission is to enhance the effectiveness and efficiency of Customs administrations.
2. Today, the WCO represents 182 Customs administrations across the globe that collectively process approximately 98% of world trade.
3. As the global centre of Customs expertise, the WCO is the only international organization with competence in Customs matters and can rightly call itself the voice of the international Customs community.

AGRICULTURE EXPORT POLICY 2018

The Union Cabinet chaired by Prime Minister Shri Narendra Modi has approved the Agriculture Export Policy, 2018. The Cabinet has also approved the proposal for establishment of Monitoring Framework at Centre with Commerce as the nodal Department with representation from various line Ministries/Departments and Agencies and representatives of concerned State Governments, to oversee the implementation of Agriculture Export Policy.

What

1. The Government has **come out with a policy to double farmers' income by 2022**. Exports of agricultural products would play a pivotal role in achieving this goal.
2. In order to provide an impetus to agricultural exports, the Government has come out with a comprehensive **"Agriculture Export Policy" aimed at doubling the agricultural exports and integrating Indian farmers and agricultural products with the global value chains.**

The Agriculture Export Policy has the following vision

1. **"Harness export potential of Indian agriculture, through suitable policy instruments, to make India global power in agriculture and raise farmers' income."**

Objectives

1. To double agricultural exports from present ~US\$ 30+ Billion to ~US\$ 60+ Billion by 2022 and reach US\$ 100 Billion in the next few years thereafter, with a stable trade policy regime.
2. To diversify our export basket, destinations and boost high value and value added agricultural exports including focus on perishables.
3. To promote novel, indigenous, organic, ethnic, traditional and non-traditional Agri products exports.

4. To provide an institutional mechanism for pursuing market access, tackling barriers and deal with sanitary and phyto-sanitary issues.
5. **To strive to double India's share in world agri exports by integrating with global value chain at the earliest.**
6. Enable farmers to get benefit of export opportunities in overseas market.

Elements of Agriculture Export Policy

The recommendations in the Agriculture Export Policy have been organised in two categories – Strategic and Operational – as detailed below:

Strategic	Policy measures
	Infrastructure and logistics support
	Holistic approach to boost exports
	Greater involvement of State Governments in agri exports
	Focus on Clusters
	Promoting value-added exports
	Marketing and promotion of "Brand India"
Operational	Attract private investments into production and processing
	Establishment of strong quality regimen
	Research & Development
	Miscellaneous

NEW CHIEF ECONOMIC ADVISOR

The government on 7 December 2018 appointed Krishnamurthy Subramanian of Indian School of Business (ISB) Hyderabad as the new chief economic advisor for a period of three years, an official release stated. He will be serving in place of Arvind Subramanian, who left the office in July earlier this year. Currently, Subramanian serves as associate professor of finance (with tenure) and executive director for the Centre for Analytical Finance at the ISB.

What

1. A PhD from Chicago-Booth and a top-ranking IIT-IIM alumnus, Subramanian is one of the **world's leading** experts in banking, corporate governance and economic policy.
2. His services on the expert committees on corporate governance for the Securities and Exchange Board of India (Sebi) and on

About CEA

1. The Chief Economic Advisor (CEA) advises the Government of India on matters related to finance, commerce, trade, economy.
2. The CEA reports directly to the Minister of Finance. The CEA heads the Economic Division under the Department of Economic Affairs (DEA).
3. The Economic Division examines domestic and international economic trends. It undertakes research studies focusing on economic policies and management of the economy. Based on the research it provides advice to the Government of India.
4. The Office of the Economic Advisor (OEA) is an attached office of the Ministry of Commerce & Industry.

governance of banks for the Reserve Bank of India (RBI) have established him as one of the chief architects of corporate governance and banking reforms in India.

3. **He serves as a member of Sebi's standing committees** on alternative investment policy, primary markets, secondary markets and research.
4. Before beginning his academic career, Subramanian worked as a consultant with JPMorgan Chase in New York. He also served in a management role in the elite derivatives research group at ICICI Ltd.

EXPORT OF GOLD IDOLS PERMITTED

The Centre has allowed export of gold idols of eight carats and up to 24 carats with certain conditions, according to a notification of the commerce ministry. However, these exports are allowed only from the domestic tariff area. Foreign trade policy has been amended to allow export of gold idols (only gods and goddess) of eight carats and above (up to 24 carats) from domestic tariff area, Directorate General of Foreign Trade (DGFT) has said in a notification.

What

1. The conditions for overseas shipments of the idols include 100 per cent examination of these exports by the approved government valuer, foreign remittance has to be realised within a period of three months from the date of exports, and mandatory submission of export order by exporters.
2. Exporters would also have to make clear distinction between a religious idol and simply moulded gold article/idol.
3. Besides, the exports would be allowed only by actual manufacturers of such idols.

BOARD AGREES TO RBI GOVERNANCE FRAMEWORK

The crucial central board the Reserve Bank of India (RBI), that met on 14 December 2018 under new RBI governor Shaktikanta Das, has decided to further examine the governance framework of the central bank. The RBI board meeting, which lasted for nearly four hours, also reviewed the current economic situation, both global and domestic challenges, matters relating to liquidity and credit delivery, and issues related to currency management and financial literacy. The 18-member board also discussed the draft report on the Trends and Progress of Banking (2017-18).

What

1. The board deliberated on the governance framework of the RBI and it was decided that the matter needs further examination, RBI said in a statement after the meeting.
2. This was the first RBI board meeting chaired by Das, who took over as the 25th governor of the central bank after the surprise resignation of Urjit Patel.
3. In the previous RBI board meeting held on 19 November, which lasted over 10 hours, the board had decided to constitute a committee of experts to fix an appropriate level of economic capital framework (ECF) for RBI which would decide how much contingency reserves it should hold any given time and the membership and terms of reference of which will be jointly determined by the government and the central bank.
4. Nothing has officially progressed on the matter as the government and the central bank are not yet on same page on the name of the chairman of the six-member panel.
5. The issue of transfer of RBI reserves, which stood at 9.43 trillion as of June 2018, to the government has been one of the contentious issues between the government and the central bank for a long time and also is seen as one of the key **reasons for Urjit Patel's resignation**.
6. At the 19 November meeting, the RBI board had also decided to refer the issue of relaxing the prompt corrective action (PCA) framework—under which are 11 of the 21 public sector banks—to the board of financial supervision of the central bank.

7. It can be noted that some of the new government nominees to the RBI board have been demanding that the central bank should be run by the board and not just by the management.

SEBI TO RELAX OFS FRAMEWORK

The Securities and Exchange Board of India (Sebi) is set to relax rules governing offer for sale (OFS) **to aid the government's disinvestment process. The proposal will be on the agenda when the market regulator's board meets. The regulator also plans** to spare non-banking financial companies (NBFCs) from having to disclose changes in shareholding due to encumbered or pledged shares. The step is significant since mutual funds have increasingly started lending to group companies of NBFCs and home finance companies (HFCs) against share pledges. The Sebi move is expected to offer some relief to stressed HFCs and systematically important NBFCs.

What

1. Sebi will also mandate more disclosures from promoter groups, which was earlier required only for promoters and key managerial personnel (KMP).
2. The steps are in addition to Sebi considering de-risking of liquid funds following the Infrastructure Leasing and Finance Services (IL&FS) crisis and easing of start-up listing processes.
3. Sebi is considering to expand the current norms for OFS by allowing companies with more than 1,000 crore of market capitalization to raise funds via this route.
4. This is based on a representation from DIPAM (department of investment and public asset management (DIPAM)).
5. Currently, OFS is available only to top 200 companies by market capitalization in any of the last four completed quarters.
6. With this change, OFS will be available to at least 800 companies, according to market capitalization data on BSE. If approved, companies such as NLC India Ltd, Housing and Urban Development Corp. Ltd (HUDCO), SJVN Ltd and KIOCL Ltd can raise funds or trim government holding via OFS.
7. With just over four months left in this fiscal year, DIPAM is fast-tracking the process to achieve the disinvestment target of 80,000 crore. So far, the government has mopped up over 15,200 crore from stake sales in state-run companies through public offers, OFS and through CPSE ETFs.
8. HUDCO, SJVN, NLC and KIOCL have less than 25% of public float as of September. KIOCL has 99% government holding, while NLC is owned 84%. HUDCO has 89.91% of government holding and SJVN has 90.78% promoter holding. At September end, 37 public sector companies are yet to comply with the Sebi requirement of minimum public float of 25%. Sebi had mandated that PSUs achieve the target by August 2017, and the deadline was extended by another year to August 2018.
9. This expansion of eligibility criteria will also help the government in complying with the Sebi requirement of 25% of public float in PSUs. However it will depend on the valuations the government will fetch for these companies. Many companies have gone slow in their fund-raising plans due to the impending elections. The government would like to hit the market maximum by January, said an investment banker, requesting anonymity.

NEW RBI GOVERNOR

Shaktikanta Das retired as secretary, Department of Economic Affairs, was appointed 25th governor of the Reserve Bank of India (RBI) on 11 December 2018, will now have his signature on all the banknotes that are printed during his three-year tenure. The Appointments Committee of Cabinet (ACC) has approved the appointment of Shri Shaktikanta Das, former Secretary, Department of Economic Affairs, as Governor, Reserve Bank of India, for a period of three years. While he has stepped down as member of the 15th Finance Commission, he would also be relieved of his duties as G-20 Sherpa.

About Him

1. Das, a 1980 batch Tamil Nadu cadre IAS officer, retired as economic affairs secretary in May 2017
2. He worked closely with RBI and oversaw Modi's plan to junk 86% of the currency in circulation in November 2016
3. He had been brought back to finance ministry soon after NDA govt came to power in mid-2014 and given charge of revenue dept; later he was moved to economic affairs dept
4. **After retirement, Das was named India's G-20** sherpa and also appointed member of the 15th Finance Commission
5. He worked under three different finance ministers — P Chidambaram, Pranab Mukherjee and Arun Jaitley

SCIENCE AND TECHNOLOGY

NM-ICPS APPROVED

The Union Cabinet chaired by Prime Minister Shri Narendra Modi has approved the launching of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) to be implemented by Department of Science & Technology at a total outlay of Rs. 3660 crore for a period of five years. The Mission addresses the ever increasing technological requirements of the society, and takes into account the international trends and road maps of leading countries for the next generation technologies.

The mission implementation would develop and bring

1. Cyber Physical Systems (CPS) and associated technologies within reach in the country,
2. adoption of CPS technologies to address India specific National / Regional issues,
3. produce Next Generation skilled manpower in CPS,
4. catalyze Translational Research,
5. accelerate entrepreneurship and start-up ecosystem development in CPS,
6. give impetus to advanced research in CPS, Technology development and higher education in Science, Technology and Engineering disciplines, and
7. place India at par with other advanced countries and derive several direct and indirect benefits.

Implementation strategy

1. The NM-ICPS is a comprehensive Mission which would address technology development, application development, human resource development & skill enhancement, entrepreneurship and start-up development in CPS and associated technologies.
2. The Mission aims at establishment of 15 numbers of Technology Innovation Hubs (TIH), six numbers of Application Innovation Hubs (AIH) and four numbers of Technology Translation Research Parks (TTRP).
3. These Hubs & TTRPs will connect to Academics, Industry, Central Ministries and State Government in developing solutions at reputed academic, R&D and other organizations across the country in a hub and spoke model.
4. A strategic approach involving a suitable mix of Academic, Industry and Government is proposed to be adopted. Strong Steering and Monitoring Mechanisms in the form of Mission Governing Board (MGB), Inter-Ministerial Coordination Committee (IMCC), Scientific Advisory Committee (SAC) and other Sub-Committees will guide and monitor the Mission implementation.
5. The Hubs & TTRPs have four focused areas along which the Mission implementation would proceed, namely (i) Technology Development; (ii) HRD & Skill Development; (iii) Innovation, Entrepreneurship & Start-ups Ecosystem Development; (iv) International Collaborations.

Impact

1. CPS technologies provide a cutting edge to a Nation's scientific, engineering, and technological innovative capabilities; support other missions of the government, provide industrial and economic competitiveness and have truly become a Strategic Resource.
2. Volume, scale and complexity of emerging applications demand continued evolution of new technologies for the foreseeable future.
3. The proposed Mission would act as an engine of growth that would benefit national initiatives in health, education, energy, environment, agriculture, strategic cum security, and industrial sectors, Industry 4.0, SMART Cities, Sustainable Development Goals (SDGs) etc.
4. CPS is an integrated system of upcoming technology, which in turn is being taken up on priority basis by countries in the race for development. CPS will indeed bring a paradigm shift in entire skill sets requirement.
5. The job opportunities will be enhanced through the Mission by imparting advanced skills and generating skilled manpower as per the requirement of the industry/ society.
6. As Innovation, Entrepreneurship and Start-up Ecosystem is an integral part of the proposed NM-ICPS, the start-ups will also create a number of technology driven job opportunities in CPS and allied areas. Accordingly, it is estimated that, about 40,000 jobs will be created in the short term and about 2,00,000 in long term.

Background

1. CPS and its associated technologies, like Artificial Intelligence (AI), Internet of Things (IoT), Machine Learning (ML), Deep Learning (DP), Big Data Analytics, Robotics, Quantum Computing, Quantum Communication, Quantum encryption (Quantum Key Distribution), Data Science & Predictive analytics, Cyber Security for physical infrastructure and other infrastructure, have pervaded and is playing a transformative role in almost every field of human endeavour all most in all sectors.
2. It has become imperative for government and industries to be prepared to adopt these emerging and disruptive technologies in order to remain competitive, drive societal progress, generate employment, foster economic growth and to improve the overall quality of life and sustainability of the environment.

FOUR NEW GRAVITATIONAL WAVES DETECTED

Scientists have made four new detections of gravitational waves – ripples in the fabric of space and time – emanating from separate black hole mergers. So far the US-based LIGO and Europe-based VIRGO gravitational-wave detectors have recorded gravitational waves from a total of 10 black hole mergers and one merger of neutron stars. The new events are known as GW170729, GW170809, GW170818, and GW170823, in reference to the dates they were detected.

What

1. GW170729, detected in the second observing run on July 29, 2017, is the most massive and distant gravitational-wave source ever observed.
2. In this coalescence, which happened roughly 5 billion years ago, an equivalent energy of almost five solar masses was converted into gravitational radiation.
3. From September 12, 2015, to January 19, 2016, during the first LIGO observing run since undergoing upgrades in a program called Advanced LIGO, gravitational waves from three binary black hole mergers were detected.
4. The second observing run, which lasted from November 30, 2016, to August 25, 2017, yielded one binary neutron star merger and seven additional binary

- black hole mergers, including the four new gravitational-wave events being reported now.
5. GW170814 was the first binary black hole merger measured by the three-detector network, and allowed for the first tests of gravitational-wave polarization (analogous to light polarization).
 6. The event GW170817, detected three days after GW170814, represented the first time that gravitational waves were ever observed from the merger of a binary neutron star system.
 7. What is more, this collision was seen in gravitational waves and light, marking an exciting new chapter in multi-messenger astronomy, in which cosmic objects are observed simultaneously in different forms of radiation.
 8. One of the new events, GW170818, which was detected by the global network formed by the LIGO and Virgo observatories, was very precisely pinpointed in the sky.
 9. The position of the binary black holes, located 2.5 billion light-years from Earth, was identified in the sky with a precision of 39 square degrees. That makes it the next best localised gravitational-wave source after the GW170817 neutron star merger.
 10. The release of four additional binary black hole mergers further informs us of the nature of the population of these binary systems in the universe and better constrains the event rate for these types of events.
 11. The next observing run, starting in Spring 2019, should yield many more gravitational-wave candidates, and the science the community can accomplish **will grow accordingly,**” said David Shoemaker, spokesperson for the LIGO Scientific Collaboration.
 12. The scientific papers describing the findings, which are being initially published on the arXiv repository of electronic preprints, present detailed information in the form of a catalogue of all the gravitational wave detections and candidate events of the two observing runs.
 13. Almost all black holes formed from stars are lighter than 45 times the mass of the Sun, researchers said.

BIGGEST US ‘RIDESHARE’ MISSION

Elon Musk’s SpaceX launched a Falcon 9 rocket from California on 3 December 2018 carrying 64 small satellites into low orbit around the Earth, which the company called the largest-**ever “rideshare” mission by a US-based rocket.** The mission, dubbed SSO-A, also marked the third voyage to space for the same Falcon 9 rocket – another **milestone for SpaceX’s cost-cutting reusable rocket technology.**

What

1. The Falcon 9 blasted off from Vandenberg Air Force Base in California carrying satellites from 34 different companies, government agencies, and universities, including the University of Illinois.
2. **SpaceX said the mission was** “one of the most complex and intricate endeavors” for Seattle-based startup Spaceflight, the ride-share company that arranged passage for each satellite maker.
3. After the launch, the **Falcon 9’s first-stage booster** returned to earth as planned, landing on a ship off the coast of southern California, according to a live video of the flight.
4. However, **the Falcon 9’s payload fairing** – an enclosure that protected the satellites during launch – missed a landing net on the barge and ended up in the ocean.
5. Falcon fairing halves missed the net, but touched down softly in the water, Musk, **SpaceX’s chief executive officer said.** He said the boat was moving to pick them up.

VOYAGER 2 REACHED

NASA's Voyager 2 has become the second human-made object in history to reach the edge of our solar system, after the spacecraft exited the protective bubble of particles and magnetic fields created by the Sun, the US space agency said. Its twin, Voyager 1, crossed this boundary in 2012, but Voyager 2 — launched 41 years ago — carry a working instrument that will provide first-of-its-kind observations of the nature of this gateway into interstellar space.

What

1. Voyager 2 now is slightly more than 18 billion kilometres from Earth. While the probes have left the heliosphere, Voyager 1 and Voyager 2 have not yet left the **solar system, and won't be leaving anytime soon, the US space agency said.**
2. Comparing data from different instruments aboard the trailblazing spacecraft, mission scientists determined the probe crossed the outer edge of the heliosphere on November 5.
3. This boundary, called the heliopause, is where the tenuous, hot solar wind meets the cold, dense interstellar medium.
4. Mission operators still can communicate with Voyager 2 as it enters this new phase of its journey, but information — moving at the speed of light — takes about 16.5 hours to travel from the spacecraft to Earth. By comparison, light travelling from the Sun takes about eight minutes to reach Earth.
5. The most compelling evidence of **Voyager 2's exit from the heliosphere came** from its onboard Plasma Science Experiment (PLS), an instrument that stopped working on Voyager 1 in 1980, long before that probe crossed the heliopause.
6. **In addition to the plasma data, Voyager's science team members** have seen evidence from three other onboard instruments — the cosmic ray subsystem, the low energy charged particle instrument and the magnetometer — that is consistent with the conclusion that Voyager 2 has crossed the heliopause.
7. Together, the two Voyagers provide a detailed glimpse of how our heliosphere interacts with the constant interstellar wind flowing from beyond.
8. **Their observations complement data from NASA's Interstellar Boundary Explorer (IBEX),** a mission that is remotely sensing that boundary.
9. NASA also is preparing an additional mission — the upcoming Interstellar Mapping and Acceleration Probe (IMAP), due to launch in 2024 — to capitalise on **the Voyagers' observations.**
10. Voyager 2 launched in 1977, 16 days before Voyager 1, and both have travelled well beyond their original destinations. The spacecraft were built to last five years and conduct close-up studies of Jupiter and Saturn.
11. As the spacecraft flew across the solar system, remote-control reprogramming was used to endow the Voyagers with greater capabilities than they possessed when they left Earth. Their five-year lifespans have stretched to 41 years, making **Voyager 2 NASA's longest running mission.**

EVIDENCE OF WATER DISCOVERED ON BENNU

Scientists have discovered evidence of water on asteroid Bennu, using data from **NASA's OSIRIS-REx** spacecraft which recently reached the rocky cosmic body to unravel its mysteries. From August through early December this year, the spacecraft aimed three of its science instruments toward Bennu and began making the **mission's first** observations of the asteroid.

What

1. During this period, the spacecraft travelled the last 2.2 million km of its outbound journey to arrive at a spot 19 km from Bennu on December 3.
2. **Data obtained from the spacecraft's two spectrometers** reveal the presence of molecules that contain oxygen and hydrogen atoms bonded together, known as **"hydroxyls."**

3. The team suspects that these hydroxyl groups exist globally across the asteroid in water-bearing clay minerals, meaning that at some point, the rocky material interacted with water.
4. While Bennu itself is too small to have ever hosted liquid water, the finding **indicates that liquid water was present at some time on Bennu's parent body, a much larger asteroid.**
5. This finding may provide an important link between what we think happened in space with asteroids like Bennu and what we see in the meteorites that scientists study in the lab, said Ellen Howell, senior research scientist at University of **Arizona's Lunar and Planetary Laboratory (LPL) in the US.**
6. The presence of hydrated minerals across the asteroid confirms that Bennu, a remnant from early in the formation of the solar system, is an excellent specimen for the OSIRIS-REx mission to study the composition of primitive volatiles and organics.

About OSIRIS-REx

1. The OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer) is a NASA asteroid study and sample-return mission.
2. The mission's main goal is to obtain a sample of at least 60 grams (2.1 oz) from 101955 Bennu, a carbonaceous near-Earth asteroid, and return the sample to Earth for a detailed analysis.
3. The material returned is expected to enable scientists to learn more about the formation and evolution of the Solar System, its initial stages of planet formation, and the source of organic compounds that led to the formation of life on Earth.
4. OSIRIS-REx was launched on 8 September 2016, and reached the proximity of Bennu on 3 December 2018, where it began analyzing its surface for a target sample area over the next several months. It is expected to return with its sample to Earth on 24 September 2023.

Flashback

1. 101955 Bennu (provisional designation 1999 RQ36) is a carbonaceous asteroid in the Apollo group discovered by the LINEAR Project on 11 September 1999.
2. It is a potentially hazardous object that is listed on the Sentry Risk Table with the second-highest cumulative rating on the Palermo Technical Impact Hazard Scale.
3. It has a cumulative 1-in-2,700 chance of impacting Earth between 2175 and 2199.
4. 101955 Bennu has a mean diameter of approximately 492 m (1,614 ft; 0.306 mi) and has been observed extensively with the Arecibo Observatory planetary radar and the Goldstone Deep Space Network.
5. Bennu is the target of the OSIRIS-REx mission which is intended to return samples to Earth in 2023 for further study.

NEW METHOD TO PREDICT SOLAR STORMS

A team of scientists have **found a way to predict the Sun's activity over the coming decades**, which could help better prepare against solar storms that may cripple satellite **communications and Earth's electric power grids**. In a study published in the journal Nature Communications, the team also showed that there is little possibility of a Sun-induced climate cooling in the coming year. Researchers from Indian Institute of Science Education and Research (IISER) Kolkata and Inter-University Centre for Astronomy and Astrophysics (IUCAA) Pune put forward a prediction for the upcoming sunspot cycle which reveals the expected conditions in space over the next decade.

What

1. This research has direct relevance for protection of **India's space-based** technological assets and the global climate.

2. Using a novel technique devised by Professor Dibyendu Nandi from IISER Kolkata and his PhD student Prantika Bhowmik, the team predicts that the next sunspot cycle will start about a year after the end of the current cycle and peak in 2024.
3. They also predict that space environmental conditions over the next decade would be similar or slightly harsher compared to the last decade.
4. The space weather is governed by a constant stream of charged particles — electrons and protons — flowing out from the Sun and permeating the solar system.

What are solar storms and how do they affect the Earth?

1. Solar storms are a variety of eruptions of mass and energy from the solar surface. Flares, prominences, sunspots, coronal mass ejections are the common harbingers of solar activity, as are plagues and other related phenomena seen at other wavelengths.
2. They all involve sudden releases of stored magnetic energy, which accelerates the hot gases near the surface or in the corona of the Sun.
3. Sometimes these particles make it all the way to the Earth and beyond by flowing along the Sun's magnetic field into interplanetary space. When the material collides with the Earth's magnetic field and trapped radiation belts, it can dump particles into our upper atmosphere to cause the Aurora.
4. The same 'charged' particles can produce their own magnetic fields which can modify the Earth's magnetic field and affect compass readings.
5. The changing magnetic fields can also 'induce' electricity in long pipelines, or produce electrical surges in our power grids leading to brown outs and black outs.

VIRGIN GALACTIC REACHES SPACE FOR FIRST TIME

Virgin Galactic's SpaceShipTwo, VSS Unity, flew higher than it ever has before on 13 December 2018, surpassing what the US Air Force considers the boundary of space, and marking the first manned flight to space from US soil since 2011. The brief, suborbital flight - with two pilots on board - marked a key milestone for the company headed by British tycoon Richard Branson, who is striving to send tourists to space at a cost of USD 250,000 per seat.

What

1. No spacecraft with people on board has taken off from US soil since the American space shuttle program ended, as scheduled, seven years ago. Since then, **the world's space agencies** have relied on Russian Soyuz rockets to ferry astronauts to the International Space Station.
2. In the meantime, a burgeoning commercial space industry is rushing to close the gap, as companies hurry to complete spacecraft that can carry astronauts and tourists into microgravity.
3. Today, for the first time in history, a crewed spaceship, built to carry private passengers, reached space. This is a momentous day and I could not be more proud of our teams who together have opened a new chapter of space exploration.
4. **Virgin Galactic's spaceship did not launch on a rocket** but took off attached to an airplane from Mojave, California. After reaching a certain altitude, higher than 43,000 feet, it fired its rocket motors for 60 seconds and made it to a peak height, or apogee, of 51.4 miles (82.7 kilometers).
5. **Virgin Galactic has said it would use the US Air Force's definition of space** as its standard. What we witnessed today is more compelling evidence that **commercial space is set to become one of the 21st century's defining industries**, said George Whitesides, CEO of Virgin Galactic and The Spaceship Company.
6. Reusable vehicles built and operated by private companies are about to transform our business and personal lives in ways which are as yet hard to imagine.
7. In July, after burning the rocket motor for 42 seconds, the VSS Unity reached a height of 32 miles. Commercial airplanes typically fly at an altitude of about six miles, while the orbiting International Space Station is some 250 miles high.

8. Another US rocket company, Blue Origin, founded by Amazon CEO Jeff Bezos, is also working to send tourists to space, but using a small rocket to get there.
9. SpaceX and Northrop Grumman operate cargo ships that launch from the United States, toting supplies and food to the space station, but not people.
10. **The first crew tests of SpaceX and Boeing's astronaut capsules are expected next year. Virgin's first flight date had been pushed back multiple times, following a test flight accident that killed a co-pilot in 2014.**

DEAL FOR SUPERCOMPUTER NETWORK

India's Centre for Development of Advanced Computing (C-DAC) and France's IT services company Atos on 15 December 2018 signed a three-year industrial contract for designing, building and installing the BullSequana, its high-performance supercomputers, in the country. The signing ceremony took place in the presence of Jean Yves Le Drian, French minister of Europe and Foreign Affairs and Ajay Prakash Sawhney, secretary - Ministry of Electronics and Information Technology.

What

1. It was signed between Hemant Darbari, Director General of C-DAC, and Pierre Barnab, chief operating officer - Big Data & Security at Atos.
2. India and France have a strategic partnership and we are two nations that innovate a lot. It is true that supercomputers are a necessity and not a luxury. We often say that data for the 21st century is what oil was to the 20th century, we are using data in a massive way and that raises questions of ethics, the statement said.
3. India and France have the same vision of what cyberspace should and we would like to deepen our cooperation in areas of cyberspace in R&D or regulation for digital technology.
4. This contract has been awarded to Atos under the National Supercomputing Mission (NSM), a scheme of Rs 45 billion, aimed at creating a network of over 70 high-performance supercomputing facilities for various academic and research institutions across India.
5. This contract is of special importance as Atos has become India's preferred industrial partner in a highly strategic field, according to a statement by the French Embassy.
6. The delivery of BullSequana supercomputers is expected to start in early next year.

What is the supercomputer?

1. A supercomputer is a type of computer that has the architecture, resources and components to achieve massive computing power.
2. Today's supercomputers consist of tens of thousands of processors that are able to perform billions and trillions of calculations or computations per second.
3. Supercomputers are primarily are designed to be used in enterprises and organizations that require massive computing power.
4. A supercomputer incorporates architectural and operational principles from parallel and grid processing, where a process is simultaneously executed on thousands of processors or is distributed among them.
5. India's fastest and first multi-petaflops (PF) supercomputer named Pratyush was unveiled at Pune-based Indian Institute of Tropical Meteorology (IITM).
6. The supercomputer has been named as 'Pratyush' meaning Sun.

MISCELLANEOUS

FIRST WRITER IN ENGLISH TO WIN JNANPITH

Amitav Ghosh has won the 54th Jnanpith award this year for his contribution to literature. The Bharatiya Jnanpith's statement made note of the "extraordinary depth and substance" of his fiction, and his capacity to create a space "where the past connects with the present". It is the first time since its inception that the Jnanpith is awarded to a writer in English language.

What

1. The award was established in 1961 and previous Jnanpith winners include India's greatest literary lions across its many languages, like Mahasweta Devi, Amrita Pritam, UR Ananthamurthy and Shrilal Shukla.
2. Born in Calcutta in 1956, with his early years spent in Bangladesh and Sri Lanka, as well as stints in Delhi, Oxford and Alexandria, Amitav Ghosh now lives in New York.
3. He has written many novels and essays, including 'The Shadow Lines' and 'Circle of Reason'. Books like 'In An Antique Land' defy genre, and have been widely admired.
4. Ghosh's writing has always been preoccupied with the intertwining of history and memory. His fiction roams free, taking on complicated subjects with an anthropologist's attention and a novelist's insight. Whether they delve into subjects like malaria or dolphins in the Sunderbans, books like 'Calcutta Chromosome' and 'The Hungry Tide' wear their learning lightly.
5. His recent writing has sought an imaginative response to big things that remain inarticulate - from his non-fiction on climate change, 'The Great Derangement', to his titanic trilogy about the opium trade and colonialism, 'Sea of Poppies', 'River of Smoke' and 'Flood of Fire'. In these three books too, he has excelled at etching human stories out of historical flux and world events.
6. In a career studded with prizes, he has also won the Sahitya Akademi Award and the Padma Shri. Ghosh will receive the Lifetime Achievement Award at the Times Litfest on December 16.

FIRST PRIVATE UAV MANUFACTURING FACILITY

Adani Defence and Aerospace and the Israel-based Elbit Systems Ltd on 14 December 2018 launched the Adani Elbit Unmanned Aerial Vehicles complex at Hyderabad. The new joint venture is touted to be the first private UAV manufacturing facility in India and the first one outside Israel to manufacture the Hermes 900 medium altitude long endurance UAV. The 50,000 square feet state-of-the-art facility will start operations with the manufacturing of complete carbon composite aero-structures for the Hermes 900 UAV, followed by the Hermes 450 UAV, catering to the global markets, and will further be ramped-up for the assembly and integration of complete UAVs. As of now, after manufacturing, the integration of the UAV units will be done in Israel.

What

1. The new manufacturing space has been set up inside the Adani Aerospace park in Hyderabad, which comprises other infrastructure centres as well.
2. The key premise of this venture was that we would start with the international **market and later for India's requirements**, said Ashish Rajvanshi, chief operating officer, Adani Defence and Aerospace.
3. About \$15 million has been invested in the new facility, which is located at the Pahadi Shareef area, near the Rajiv Gandhi international airport in Hyderabad. This is a 20 acre park, which is going to have a supporting ecosystem (for manufacturing).
4. Elad Aharonson, executive vice-president and general manager, Elbit Systems Ltd, said that the venture is waiting for the Indian government to give it an opportunity to manufacture UAVs for the defence sector in India.

NOAA'S ANNUAL REPORT ON ARCTIC

The Arctic region experienced second lowest overall sea-ice coverage on record this year, due to the continuing global warming trend, according to a US National Oceanic and Atmospheric Administration (NOAA) report. The report also found that the number of grazing animals in the region, such as the Arctic caribou and wild reindeer populations, dropped by 56 per cent in two decades, with the largest declines in Alaska and Canada.

What

1. **NOAA's annual report card on the Arctic measures the changing climate of** the polar region including warmer air and ocean temperatures and declines in sea-ice that are driving shifts in animal habitats.
2. The 2018 Arctic Report Card is a peer-reviewed report that provides an annual status update on the region and compares these observations to the long-term record.
3. It was compiled from the research of 81 scientists working for governments and academia in 12 nations. This information can be used to inform decisions by local, state and federal leaders as Arctic residents confront the challenges and opportunities posed by a rapidly changing climate and ecosystem.
4. **This report will also help guide NOAA's priorities in better understanding the** role of the Arctic in climate change and extreme weather; sustaining and growing fisheries; and supporting adaptation and economic opportunities in the region.
5. The report shows that the Arctic region experienced the second-warmest air temperatures ever recorded as well as the second-lowest overall sea-ice coverage.
6. The region also experienced earlier plankton blooms due to early melting of sea ice in the Bering Sea. The report also includes multi-year environmental changes, including a **long-term population decline of the region's iconic wildlife** species, the caribou.
7. Other multi-year essays focused on the expansion northward of toxic harmful algae and significant concentrations of microplastic pollution that are transported by ocean currents into the Arctic Ocean from other parts of the global ocean.
8. Arctic caribou and wild reindeer populations dropped sharply from 4.7 million to 2.1 million — a 56 per cent decline – grazing animals in two decades, with the largest declines in Alaska and Canada.
9. Scientists attribute the declines to Arctic warming, which is increasing the frequency of drought, affecting the quality of forage. Longer, warmer summers also increase flies, parasites and disease outbreaks in the herds.

Flashback

1. The Arctic is a polar region located at the northernmost part of Earth. The Arctic consists of the Arctic Ocean, adjacent seas, and parts of Alaska (United States), Finland, Greenland (Denmark), Iceland, Northern Canada, Norway, Russia and Sweden.
2. The Arctic region is a unique area among Earth's ecosystems. For example, the cultures in the region and the Arctic indigenous peoples have adapted to its cold and extreme conditions.
3. In recent years, Arctic sea ice decline has been caused by global warming. Life in the Arctic includes organisms living in the ice, zooplankton and phytoplankton, fish and marine mammals, birds, land animals, plants and human societies.

AMERICA'S 41ST PRESIDENT DIES

George Bush, the 41st president of the United States and the father of the 43rd, who steered the nation through a tumultuous period in world affairs but was denied a second term after support for his presidency collapsed under the weight of an economic downturn and his seeming inattention to domestic affairs, died on 30 November 2018. He

was 94. His death, which was announced by his office, came less than eight months after that of his wife of 73 years, Barbara Bush.

What

1. Mr. Bush, a Republican, was a transitional figure in the White House, where he served from 1989 to 1993, capping a career of more than 40 years in public service.
2. A decorated Navy pilot who was shot down in the Pacific in 1944, he was the last of the World War II generation to occupy the Oval Office.
3. In an election that turned on the economy, they repudiated Mr. Bush in 1992 and chose a relatively little-known Democratic governor from Arkansas, Bill Clinton, a baby boomer, ushering in a generational shift in American leadership.
4. **If Mr. Bush's term helped close out one era abroad, it opened another.** In January 1991 he assembled a global coalition to eject Iraqi invaders from Kuwait, sending hundreds of thousands of troops in a triumphant military campaign that to many Americans helped purge the ghosts of Vietnam.

EINSTEIN'S 'GOD LETTER' AUCTIONED

German scientist Albert Einstein's most famous letter about his views on God and religion, written just a year before his death, has been sold for a whopping USD 2.89 million at an auction in New York. The letter was expected to fetch upto USD 1.5 million. The two-page letter, dated January 3, 1954, was written to German philosopher Eric Gutkind, **who had sent Einstein a copy of his book "Choose Life: the Biblical Call to Revolt". "The word God is for me nothing but the expression and product of human weakness, the Bible a collection of venerable but still primitive legends," Einstein wrote in the letter.**

What

1. This remarkably candid, private letter was written a year before **Einstein's death** and remains the most fully articulated expression of his religious and philosophical views.
2. **"No interpretation, no matter how subtle, can (for me) change anything about this," he wrote. Einstein instead invokes Baruch Spinoza, the 17th-century Jewish Dutch philosopher with whom he strongly identified from an early age.**
3. Spinoza believed not in an anthropomorphic God who intervened in daily lives, but in a God beyond description, one responsible for the sublime beauty and orderliness of the universe.
4. For me the unadulterated Jewish religion is, like all other religions, an incarnation of primitive superstition. And the Jewish people to whom I gladly belong, and in whose mentality I feel profoundly anchored, still for me does not **have any different kind of dignity from all other peoples," Einstein wrote.**
5. As far as my experience goes, they are in fact no better than other human groups, even if they are protected from the worst excesses by a lack of power. Otherwise I cannot perceive anything 'chosen' about them," the letter says.
6. **Einstein wrote in response to Eric Gutkind's 1952 book, Choose Life: The Biblical Call to Revolt, which he read at the behest of Dutch mathematician and philosopher L.E.J. Brouwer (1881-1966).**

SAHITYA AKADEMI AWARD 2018

The Sahitya Akademi on 5 December 2018 announced winners of its annual award for 2018, and the Bhasha Samman for 2017 and 2018. **This year's winners include** Sanjib Chattopadhyay for Bengali, Anees Salim for his novel in English, Sharifa Vijliwala for her essays in Gujarati, Chitra Mudgal for her Hindi novel and S Ramesan Nair for his poetry in Malayalam.

What

1. **India's academy of letters has also awarded Rama Kant Shukla** for his work in Sanskrit, Rajesh Kumar Vyas for Rajasthani, Rahman Abbas for Urdu, Lok

Nath Upadhyay for Nepali, S Ramakrishnan for Tamil and KG Nagarajappa for Kannada.

2. In the Bhasha Samman categories, while **Yogendra Nath Sharma 'Arun'** was awarded in the north zone, G Venkatasubbiah has been awarded in the south zone, Gagendra Nath Das in eastern zone and Shailaja Bapat in western zone.
3. Sahitya Akademi secretary K Sreenivasa Rao said the books were selected on the basis of recommendations made by a jury of three members in each language section and represented the diversity of contemporary Indian literature.
4. Awards will be presented to the winners on January 29 for seven collections of poetry, six novels, six short story collections, three works of literary criticism and two collections of essays spanning 24 Indian languages recognised by the Sahitya Akademi.

SKOCH AWARD

Ministry of New and Renewable Energy, Government of India has been conferred the Skoch Award for National Significance at an event held recently in New Delhi. The award was received by Secretary, Ministry of New Renewable Energy Shri Anand Kumar.

What

1. The award has been conferred on the Ministry considering its purpose and critical role played in installing about 73 GW renewable energy capacities in the country.
2. With 21 per cent of total installed capacity, within the year renewable energy grossed a magic figure of providing one billion units of electricity in the country.
3. Today, India ranks 4 in the world in wind energy capacity and 5th in solar & total renewable energy capacity installed in the world.
4. India has played a critical role in setting up of international solar alliance. Further, India moved a resolution during the first meeting for making it a global initiative.

'SUN IN A BOX' SYSTEM

MIT scientists have designed a system that could store renewable energy, such as solar and wind power, and deliver it back into an electric grid on demand. The system, described in the journal Energy and Environmental Science may be designed to power a small city not just when the sun is up or the wind is high, but around the clock. The new design stores heat generated by excess electricity from solar or wind power in large tanks of white-hot molten silicon, and then converts the light from the glowing metal back **into electricity when it's needed.**

What

1. The researchers from Massachusetts Institute of Technology (MIT) in the US estimate that such a system would be vastly more affordable than lithium-ion batteries, which have been proposed as a viable, though expensive, method to store renewable energy.
2. They also estimate that the system would cost about half as much as pumped hydroelectric storage – the cheapest form of grid-scale energy storage to date.
3. The new storage system stems from a project in which the researchers looked for ways to increase the efficiency of a form of renewable energy known as concentrated solar power.
4. Unlike conventional solar plants that use solar panels to convert light directly into electricity, concentrated solar power requires vast fields of huge mirrors that concentrate sunlight onto a central tower, where the light is converted into heat that is eventually turned into electricity.
5. The reason that technology is interesting is, once you do this process of focusing the light to get heat, you can store heat much more cheaply than you can store electricity.
6. Concentrated solar plants store solar heat in large tanks filled with molten salt, which is heated to high temperatures of about 538 degrees Celsius. When

electricity is needed, the hot salt is pumped through a heat exchanger, which transfers **the salt's heat into steam**. A turbine then turns that steam into electricity.

7. The researchers have outlined their concept for a new renewable energy storage system, which they call TEGS-MPV, or Thermal Energy Grid Storage-Multi-Junction Photovoltaics.
8. Instead of using fields of mirrors and a central tower to concentrate heat, they propose converting electricity generated by any renewable source, such as sunlight or wind, into thermal energy, via a process by which an electric current passes through a heating element.
9. The system could be paired with existing renewable energy systems, such as solar cells, to capture excess electricity during the day and store it for later use.
10. The system would consist of a large, heavily insulated, 10-metre-wide tank made from graphite and filled with liquid silicon, **kept at a "cold" temperature of almost 1927 degrees Celsius**.
11. A bank of tubes, exposed to heating elements, then connects this cold tank to a **second, "hot" tank. When electricity from the town's solar cells comes** into the system, this energy is converted to heat in the heating elements.

KCR TAKES OATH AS TELANGANA CM

Kalvakuntla Chandrasekhar Rao has taken oath as the Chief Minister of Telangana for a second consecutive term. Mohammed Mahmood Ali, a Deputy Chief Minister in KCR's maiden Cabinet, is the only other Minister who took the oath at the Raj Bhavan on 13 December 2018. Governor E. S. L. Narasimhan administered the oath to the two leaders in the swearing-in ceremony. KCR's TRS registered a landslide victory in the just concluded Assembly polls by clinching 88 of the 119 seats in the Assembly.

Flashback

1. Telangana is a state in the south of India. It is situated on the centre-south stretch of the Indian peninsula on the high Deccan Plateau.
2. It is the twelfth largest state and the twelfth-most populated state in India with a geographical area of 112,077 km² (43,273 sq mi) and 35,193,978 residents as per 2011 census.
3. On 2 June 2014, the area was separated from the northwestern part of Andhra Pradesh as the newly formed 29th state with Hyderabad as its historic permanent capital. Its other major cities include Warangal, Nizamabad, Khammam and Karimnagar.
4. Telangana is bordered by the states of Maharashtra to the north, Chhattisgarh to the east, Karnataka to the west, and Andhra Pradesh to the east and south.
5. The terrain of Telangana region consists mostly of hills, mountain ranges, and thick dense forests distribution of 27,292 sq. km.
6. As of 2018, the state of Telangana is divided into 31 districts.

TRIBUNAL FOR MANIPUR INSURGENT GROUPS

The Centre has constituted a tribunal to adjudicate matters related to extension of ban imposed on eight insurgent groups in Manipur for five more years over continued involvement in unlawful and violent activities. In a notification, the Home Ministry said the tribunal was set up under the Unlawful Activities (Prevention) Act, 1967 and will be headed by Delhi High Court judge Justice Sangita Dhingra Sehgal.

What

1. The tribunal will adjudicate whether or not there is sufficient cause for declaring the **Meitei extremist organisations of Manipur as "Unlawful Associations"**, the notification said.
2. The organisations which were banned last month include **Peoples' Liberation Army** generally known as PLA and its political wing, Revolutionary **Peoples' Front (RPF)**, United National Liberation Front (UNLF) and its armed wing

Manipur Peoples' Army (MPA), Peoples' Revolutionary Party of Kangleipak (PREPAK) and its armed wing 'Red Army'.

3. The others are Kangleipak Communist Party (KCP) and its armed wing, also called Red Army; Kanglei Yaol Kanba Lup (KYKL); the Coordination Committee (CorCom) and Alliance for Socialist Unity Kangleipak (ASUK).
4. The home ministry said the eight Meitei extremist organisations of Manipur were involved in 756 violent incidents in the past five years from January 1, 2013 to July 31, 2018 during which they killed 86 people, including 35 security personnel.

GUIDELINES FOR GROUND WATER EXTRACTION NOTIFIED

The Central Ground Water Authority, Ministry of Water Resources, River Development and Ganga Rejuvenation on 12th December 2018 notified revised guidelines for ground water extraction, which will be effective from 1st June 2019. The revised guidelines aim to ensure a more robust ground water regulatory mechanism in the country. One of the important features of the revised guidelines is the introduction of the concept of Water Conservation Fee (WCF). The WCF payable varies with the category of the area, type of industry and the quantum of ground water extraction and is designed to progressively increase from safe to over-exploited areas and from low to high water consuming industries as well as with increasing quantum of ground water extraction.

What

1. Through this design, the high rates of WCF are expected to discourage setting up of new industries in over-exploited and critical areas as well as act as a deterrent to large scale ground water extraction by industries, especially in over-exploited and critical areas.
2. The WCF would also compel industries to adopt measures relating to water use efficiency and discourage the growth of packaged drinking water units, particularly in over-exploited and critical areas.
3. As per the revised guidelines, exemption from requirement of NOC has been given to agricultural users, users employing non-energised means to extract water, individual households (using less than 1 inch diameter delivery pipe) and Armed Forces Establishments during operational deployment or during mobilization in forward locations. Other exemptions (with certain requirements) have been granted to strategic and operational infrastructure projects for Armed Forces, Defence and Paramilitary Forces Establishments and Government water supply agencies.

Flashback

1. Central Ground Water Authority (CGWA), constituted under the Environment (Protection) Act of 1986 vide Gazette notification dated 14.01.1997 has the mandate of regulating ground water development and management in the country.
2. CGWA has been regulating ground water development for its sustainable management in the country through measures such as issue of advisories, public notices, grant of No Objection Certificates (NOC) for ground water withdrawal.
3. India is the largest user of ground water in the world, extracting ground water to the tune of 253 bcm per year, which is about 25% of the global ground water extraction.
4. Out of the total of 6584 assessment units, 1034 have been categorized as 'Over-exploited' 253 as 'Critical', 681 as 'Semi-Critical' and 4520 as 'Safe'
5. The remaining 96 assessment units have **been classified as 'Saline'** due to non-availability of fresh ground water due to salinity problem.

4. Ground water extraction in India is primarily for irrigation in agricultural activities, accounting for nearly 228 BCM (Billion Cubic Meter), which amounts to 90% of the annual ground water extraction.
5. The remaining 10% of extraction (25 BCM) is for drinking & domestic as well as industrial uses. Industrial use is estimated to account for only about 5% of the annual ground water extraction in the country.

Salient features

1. Encouraging use of recycled and treated sewage water by industries
2. Provision of action against polluting industries
3. Mandatory requirement of digital flow meters
4. Piezometers and digital water level recorders (with or without telemetry depending upon quantum of extraction)
5. Mandatory water audit by industries abstracting ground water 500 m³/day or more in safe and semi-critical and 200 m³/day or more in critical and over-exploited assessment units
6. Mandatory roof top rain water harvesting except for specified industries
7. Measures to be adopted to ensure prevention of ground water contamination in premises of polluting industries/ projects

NO IRREGULARITIES IN PURCHASE OF RAFALE JETS

The Supreme Court on 14 December 2018 said it found no irregularities in the NDA government's decision-making process to purchase 36 Rafale fighter jets from Dassault under Indo-French intergovernmental agreement. The SC has dismissed all petitions for a court-appointed probe into the deal. The SC made it clear it wasn't the job of the top court to go into pricing when the need and quality of the aircraft is not in doubt, adding that it did not find anything wrong in the selection of Indian offset partners by Dassault.

What

1. The apex court gave a clean chit to the government on three aspects -- decision making process to purchase 36 Rafale jets instead of 126 by the previous UPA government, pricing of Rafale jets and selection of Indian offset partners including Anil Ambani owned Reliance Defence by Dassault.
2. Calling it "mere conjecture" on part of some persons to cite the UPA deal for 126 Rafale jets against NDA's 36 jets as implying that negotiations for 126 jets had come to a standstill, CJI Ranjan Gogoi said.
3. The SC bench of CJI Ranjan Gogoi and Justices Sanjay Kaul and K M Josph also said personal perception of people on the deal matters little but admitted that the judiciary has a very constrained jurisdiction in examining defence deals of this nature especially when nation's adversaries have inducted fourth and fifth generation fighter jets compared to none by India.
4. Our country cannot remain unprepared when adversaries have acquired fourth and fifth generation fighters compared to none by India. We have interacted with senior IAF officers and there is no doubt about the need and quality of Rafale jets, the court said.
5. The petitions alleging massive irregularities in the deal were filed by advocates M L Sharma, Vineet Dhanda and Prashant Bhushan as well as politicians Sanjay Singh, Yashwant Sinha and Arun Shourie.
6. India signed the agreement with France for the purchase of 36 Rafale fighter aircraft in a fly-away condition as part of the upgrading process of Indian Air Force equipment. The deal is estimated to be about Rs 58,000 crore (about USD 8 billion).
7. The Rafale fighter is a twin-engine Medium Multi Role Combat Aircraft (MMRCA) manufactured by French aerospace company Dassault Aviation.

NEW CM OF MIZORAM

Mizo National Front (MNF) president Zoramthanga was on 15 December 2018 sworn in as **Mizoram's new chief minister**, heading a 12-member ministry. He was administered the oath of office and secrecy by Governor K Rajasekharan during a ceremony at Raj Bhavan. Zoramthanga took oath in Mizo language. This was his third stint as chief minister of the north eastern state, having led the MNF government in Mizoram in 1998 and 2003. Tawnluia will be the deputy chief minister.

What

1. Along with Zoramthanga, 11 others - five cabinet ministers and six ministers of state - were also sworn in.
2. The five cabinet ministers are - Tawnluia, R Lalthangliana, Lalchamlia, Lalzirliana and Lalrinsanga.
3. The six ministers of state are - K Lalrinliana, Lalchhandama Ralte, Lalruatkima, Dr K Beichhua, T J Lalnuntluanga and Robert Romawia Ralte.
4. Chairman of Mizoram Kohhran Hruaitute Committee (MKHC), a conglomerate of 16 major churches in the state, Rev R Lalhmingthanga, read out from the Bible and offered prayers during the ceremony.
5. The MNF came to power in Mizoram capturing 26 of the 40 seats in the state assembly in the recently-held polls.