CONTENTS

S. No.	Topic	Page No.

VI. SCIENCE & TECHNOLOGY

VII. PRELIMS/MISCELLANEOUS

I. POLITY & GOVERNANCE

TOPIC: GS II, ASPECTS OF GOVERNANCE

1. The Srikrishna Report and the Supreme Court's right to privacy judgment

Source: The Hindu

Why in news

- Recently, the Ministry of Electronics and Information Technology accepted the finalised result of the deliberations of an expert committee on data protection chaired by BN Srikrishna.

- A year ago on the Supreme Court gave a unanimous affirmation of the right to privacy. This judgment led the Union government to form a committee headed by Justice B.N. Srikrishna to formulate law on privacy last year which has produced a set of recommendations that includes a draft law titled the "The Personal Data Protection Bill, 2018.

Issue areas in the Report:

- Despite being formed within the ambit of, and even being bound by, the Right to Privacy judgment, the recommendations undermine the legal principles and also re-interprets them. Any bill, or other legislative recommendations, should ideally go through pre-legislative consultation as per the 2015 Pre-legislative Consultation Policy, followed by Union Cabinet review before being submitted to Parliament.

- There appears to be no formal referencing to:

  (a) The recommendations issued in 2012 by the Justice AP Shah chaired expert committee on privacy to the erstwhile Planning Commission

  (b) The 2010 approach paper on a privacy law for India published by the Department of Personnel and Training or the draft Privacy Bill developed by them interdepartmentally across 2011-15 for the Union Government.

Authority Data Protection

- The education, policy setting, investigation, enforcement, and adjudication functions for data protection are nearly all provided to one single national regulatory agency , the Data Protection Authority of India.

- Established by the Central Government, the DPA would be managed by a Chairperson and six members, selected by a committee composed of the Chief Justice or another Supreme Court Justice nominated by him, the Cabinet Secretary, and one "expert of repute" appointed by the judicial member of the committee in consultation with the Cabinet Secretary.

Highlights of the Draft Bill

- Absence of judicial members in the draft bill is in conflict with the Puttaswamy ruling, since in that judgment it was indicated that making decisions on intrusion into privacy involves a judicial role.

- The draft bill does not propose any specific measures to consolidate or update Indian law regarding surveillance and communications interception by law enforcement and intelligence organisations. The expert committee report acknowledges that post the Puttaswamy ruling, many existing practices and legal measures regarding surveillance in India may not match the constitutional tests outlined by the Supreme Court to protect the fundamental right to privacy and lists the Telegraph Act, Telegraph Rules, Information Technology Act, and several criminal procedure related statutes which need changes.

- Its section on Aadhaar acknowledges that several existing provisions of the Aadhaar Act requires reform, ranging from legal recognition of virtual tokenised IDs in place of Aadhaar numbers to drastically reducing the legality of online authentication of Aadhaar by private players and others.

- Earlier Supreme Court Judgment stated upheld the primacy of the individual as the beneficiary of fundamental rights and rejected the argument that the right to privacy dissolves in the face of collective notions of economic development.

- The priorities of the Srikrishna committee stray from these two basic points.

- Its report, titled "A Free and Fair Digital Economy: Protecting Privacy, Empowering Indians" which that the common good and the economy comes first and individuals second.

How the Report varies from Supreme Court judgement?

- The report deviates the SCs right to privacy judgment as it reveals a misunderstanding of the fundamentals of constitutional law. According to the report the state's purpose under the Constitution, , is "based on two planks:

- First "the state is a facilitator of human progress" and is "commanded" by the Directive Principles of State Policy "to serve the common good. Here the Fundamental Rights which protects the individual against the state's excess comes second. This ignores the very structure of the Constitution in which the chapter guaranteeing enforceable Fundamental Rights precedes the unenforceable Directive Principles of State Policy.

- Thus the report attempts to open the right to privacy to allow the state the most convenient means to realise its regulatory agenda.

TOPIC: GS II, ASPECTS OF GOVERNANCE

2. Cabinet clears Bill to restore the provisions of SC/ST Act

Source: The Hindu

Why in news:

The Centre has decided to introduce a Bill to restore the original provisions of the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989, which the Supreme Court had struck down in a March ruling.

Back to the basics
A synopsis of the SC/ST Act's fate in the Supreme Court

File photo of a protest against the Act's dilution in April 2018.

MARCH 20, 2018: Justices A.K.Goel and U.U. Lalit of the Supreme Court hold that the SC/ST Act has become an instrument for "blackmail" of citizens and public servants. The SC reads down Section 18, which bars anticipatory bail to suspects

APRIL 3: The Centre files a review petition. The same Bench hears the review and observes that its March 20 judgment is to protect innocents from arbitrary arrest, and not an affront to Dalit rights

MAY 3: SC clarifies that the police need to conduct an enquiry before arrest in cases where they feel a complaint filed about an atrocity committed on Dalits is outright "absurd" or "absolutely" frivolous

JULY 6: Justice A.K. Goel, in his retirement speech, justifies the March 20 judgment

AUGUST 1: Union Cabinet gives its nod to a bill to restore the original provisions of the SC/ST Act

Background:

- With the objective of eradicating inherent discriminatory attitudes against the SCs and STs, the Untouchability (Offences) Act, 1955 was initially passed in Parliament in 1955.In 1976 it was renamed the Protection of Civil Rights (PCR) Act.

- Owing to the ineffectiveness of the Act, the Scheduled Caste and Scheduled Tribes (Prevention of Atrocities) Act came into existence in 1989.

- The 1989 Act, which was amended in 2015, punished casteist slurs and denied anticipatory bail to the accused.

- Making the 1989 Act more stringent, the SC and ST Amendment Act, 2015, added that actions like tonsuring of head, moustache, or similar acts which are derogatory to the dignity of members of SCs and STs, will now also be treated as atrocities.

- Recently the SC issued a few guidelines to protect people against arbitrary arrest under the Act, directing that public servants could only be arrested with the written permission of their appointing authority and in the case of private employees, the Senior Superintendent of Police concerned should allow it.

Amendments:

- The Amendment Bill to be presented in the on-going session of Parliament seeks to insert three new clauses after Section 18 of the original Act in order to undo the effect of SC Judgement.

  o Preliminary enquiry shall not be required for registration of a First Information Report against any person.

  o The arrest of a person accused of having committed an offence under the Act would not require any approval.

  o The provisions of Section 438 of the Code of Criminal Procedure — which deals with anticipatory bail — shall not apply to a case under this Act, "notwithstanding any judgment or order of any Court."

TOPIC: GS II, ASPECTS OF GOVERNANCE

3. LS Passes Commercial Courts Bill

Source: The Hindu

Why in news:

The Lok Sabha passed the Commercial Courts, Commercial Division and Commercial Appellate Division of High Courts (Amendment) Bill, 2018.

Provisions of the bill:

- It will designate some courts as commercial courts for speedy disposal of commercial disputes.

- It allows state governments to establish commercial courts at the district level, even in territories where high courts have ordinary original civil jurisdiction.

- In areas where high courts do not have original jurisdiction, state governments may set up commercial appellate courts at the district level to consider appeals from commercial courts below the level of a district judge.

- The Bill seeks to amend the Commercial Courts Act, 2015 by reducing the pecuniary jurisdiction of these courts from Rs. 1 crore to Rs. 3 lakh.

- Introduction of the Pre-Institution Mediation process in cases where no urgent, interim relief is contemplated. This will provide for an opportunity to the parties to resolve the commercial disputes outside the ambit of the courts through the authorities. This will also help in reinforcing investor's confidence in the resolution of commercial disputes.

- Central Government is authorised to make rules and procedures for Pre-Institution Mediation.

Details:

- The bill replaces an ordinance issued in May 2018.

- It aims at improving the ease of doing business in India.

- It is a move to provide option of using commercial dispute resolution to smaller traders as well.

- The focus is on speedy disposal of commercial disputes.

- It is opined that good governance is a part of good economy and it is imperative to bring about such legislations as India is becoming one of the topmost economies of the world with largest number of FDI coming to India. The measures like encouraging arbitration, empowering the commercial courts and mediation will aid India in achieving the target of breaking into top 50 club in the ease of doing business rankings.

TOPIC: GS II, ASPECTS OF GOVERNANCE

4. PIL not a Governance Tool

Source: The Hindu

Why in news:

- Union Law Minister said in the Lok Sabha that while public interest litigation (PIL)for securing the rights of the poor, the workers and against corrupt public servants were to be supported, governance through such petitions should not be done in responding to a query regarding increase in pendency of cases due to increase in number of PIL petitions.

- The law minister said that only those voted in by the people and who are accountable to Parliament have the right to govern and frame laws for the country. The High Courts and the Supreme Court do not have that right. This has been clearly stated in our Constitution.

Public Interest Litigation:

- The concept of public interest litigation (PIL) rests on the principle that any member of public interest can initiate legal proceedings on behalf of an aggrieved person, especially a person who is unable to move to court on his or her own.

- Such proceedings can be initiated in either the High Court or the Supreme Court for the enforcement of the constitution or legal rights of a person or a group of person.

- Public interest litigation is the power given to the public by courts through judicial activism.

Criticism of PIL:

- It has been alleged that by entertaining cases of violation of fundamental rights through letters, the courts are flooded with litigation, resulting in delay in the disposal of several other important cases.

- PIL is likely to lead to conflicts between the three organs of government on account of right of courts to interfere in the working of other two organs.

Despite the criticism leveled against PIL, it cannot be denied that it has not only helped the poor and destitute to secure justice but has also helped in cleansing the administration by insisting on the punishment of those who are involved in various scams and corruption cases in public life. It is well known that several scams like the Hawala Scam, Urea Scam, Fodder Scam in Bihar, Illegal allotment of Government Houses and Petrol pumps etc., came to light only through PIL.

TOPIC: GS II, EDUCATION

5. Higher Education Commission of India (HECI) Bill and No Detention Policy in RTE

Source: The Hindu

Features of the Bill

- It aims of to replace the existing University Grants Commission (UGC), the country's apex body that distributes funds to public universities with Higher Education Commission of India (HECI).

- This new commission will have unbridled powers over all colleges and universities across the country, including the authority to shut them down and at worst, jail the college or university authorities for up to three years if the commission finds that they disobeyed its orders and refuse to pay the penalty. The only exceptions will be the Institutions of National Importance, which are mostly institutes like the IITs.

- The Ministry of Human Resource Development (MHRD) has attracted much attention in recent weeks for two reasons. First, it put out for public consultation the draft Higher Education Commission of India (HECI) Bill, which seeks to replace the University Grants Commission and in response, it received thousands of suggestions from various stakeholders.

- A number of concerns have been aired by academics, policy makers, and civil society on the HECI Bill, particularly because it is silent on concrete reasons to replace the UGC. However, there are some problems with the UGC.

- Both the National Knowledge Commission Report (2006) and the Yashpal Committee on Higher

Education (2009) made a solid case for bringing in a new regulator.

Concerns about the Bill:

- The draft HECI Bill makes the problem worse through over-centralisation and enhanced political interference.

- The move to entrust all grant-giving powers to the Ministry can lead to politicisation of grant allocation and more interference by the bureaucracy.

- Instead of preserving autonomy, the Bill allows the Chairperson of the new Commission to be a member of the Central government, something expressly prohibited in the UGC Act.

- The bill also transgresses the autonomy of higher educational institutions by allowing micromanagement, for instance, on syllabi.

- The new body neither involves the States sufficiently nor accommodates the diverse needs of the country.

- Therefore, it would have been better off if the government addressed the loopholes in the UGC.

Detention Policy:

- The Right to Education (RTE) Bill 2018 does away with the policy that children cannot be detained till they complete elementary education in Class VIII.

- The amendment gives States the option of holding regular examinations either at the end of Class V or Class VIII, or both. Students who fail this exam would be given a chance to re-appear after two months from the date of declaration of results. In case they still cannot pass, the States will have the option of detaining them.

- The no-detention policy was to be implemented together with continuous assessment, which would help identify learning deficiencies and correct them. However, the education system has failed to provide continuous assessment and so the government is falling back on examinations and detention, which can lead to students becoming discouraged and higher dropout rates.

- The larger question is whether the no-detention policy will improve the learning outcomes of children if it is brought back.

Experience with No-Detention:

- Nine years since the launch of the RTE we have achieved near universalisation of enrolment of children at the elementary level. The no-detention policy is successful in that sense. However, if the aim is to improve learning outcomes, the policy alone is unhelpful.

Other changes required in RTE:

- To improve learning outcomes in children, there are other specific provisions in the RTE that need attention.

- Besides maintaining a good pupil-teacher ratio (PTR), proper infrastructure like all-weather buildings, barrier-free access in schools, separate toilets for boys and girls are still behind the qualitative standards as enshrined in the RTE. Government data show that out of 10,72,742 government schools at the elementary level, only 7.5 lakh have ramps, 6 lakh have playgrounds, and 9 lakh have libraries.

Issue of funds:

- Declining funds is another reason why the RTE has not been implemented in letter and spirit. Accountability Initiative Report shows that allocations for the Sarva Shiksha Abhiyan, the main vehicle to drive RTE implementation, have remained much below the resource estimates made by the MHRD.

- Quality-related interventions accounted for only 9% of the total approved budgets in FY 2016-17.

- It is evident that no-detention can work only if there is improved quality, which the current amendment to RTE does not ensure.

- These legislations are only a patchwork agenda of the government as they provide no long-term solution to the issues plaguing the system of education in India.

> ### TOPIC: GS II, GOVERNMENT POLICY AND INTERVENTION

6. Dealing with Water Scarcity

Source: The Hindu

Availability of potable water worldwide:

- There are millions of people all over the world who either don't have access to water or the water is unable to be used.

- About 70% of the Earth's surface is covered with water and 3% of it, is actually freshwater that is fit for human consumption. Around two-thirds of that is tucked in frozen glaciers and unavailable for our use.

- According to WWF, some 1.1 billion people worldwide lack access to water, and a total of 2.7 billion find water scarce for at least one month of the year.

Water Scarcity:

- Water scarcity involves water crisis, water shortage, water deficit or water stress. Water scarcity can be due to physical water scarcity and

economic water scarcity. Physical water scarcity refers to a situation where natural water resources are unable to meet a region's demand and economic water scarcity is a result of poor water management resources.

Water scarcity in India:

- Today, India is in the midst of a suicidal water crisis as urban and rural landscapes go thirsty.

- Over the years, we have seen activists, scientists and experts from across India working on bottom-up schemes to revive and rejuvenate lakes, wetlands, streams and other small water bodies. While these movements have brought about a significant change at the local level, the scale of our water problems is much larger.

- Cities that continue to spread, with bursting population are huge parasites on water, food, energy and all other resources. High densities of our cities do not allow for water harvesting to fill the gap.

- Invasive schemes like dams to service these large cities and the huge needs of agriculture have caused extreme ecological devastation.

- In our global market economies, the products and services that are derived from natural infrastructure have often led to the terminal loss of the source itself.

- This is long-term loss for short-term gain. Natural resources are living evolutionary resources that are constantly renewed by natural cycles. Therefore, they provide us perennial value as long as we use them with natural wisdom and not kill them with exploitation.

- If we were to recognise the true value of our natural infrastructure and 'conserve and use' our evolutionary resources with the help of science, it would secure the future for humanity and the natural world.

River Floodplains:

- Floodplains of rivers are exceptional aquifers where any withdrawal is compensated by gravity flow from a large surrounding area and can be used as a source of providing water to cities. They are formed over millions of years by the flooding of rivers with deposition of sand on riverbanks. Some floodplains, such as those of Himalayan rivers, contain up to 20 times more water than the virgin flow in rivers in a year.

- If we conserve and use the floodplain, it can be a self-sustaining aquifer wherein every year, the river and floodplain are preserved in the same healthy condition as the year before.

- Land on the floodplains can be leased from farmers in return for a fixed income from the water sold to cities. The farmers can be encouraged to grow orchards/food forests to secure and restore the ecological balance of the river ecosystem.

Natural Mineral Water:

- Currently, mineral water is brought from faraway mountain springs, putting huge pressure on the mountains. It is packaged and consumed in plastic bottles that end up in landfills. Forested hills are a result of evolution over millions of years which sit on a treasure of underground aquifers that contain natural mineral water comparable to that found in a mountain spring.

- This is because the rain falls on the forest and seeps through the various layers of humus and cracked rock pathways, picking up nutrients and minerals and flows into underground mineral water aquifers. Water in these aquifers is comparable to several international natural spring mineral waters.

- It also shows that if a scheme of 'conserve and use' is applied correctly, it would allow a forest to be sustained as a mineral water sanctuary.

- Such non-invasive, local, large-scale 'conserve and use' projects till now have not been part of our living scheme. They change the relationship between nature, water and cities. They differ in scale from the small, community-driven projects of check dams, water harvesting and lakes and can service large populations. Unlike large-scale dams, these projects work with nature rather than against it. They can be used around the globe.

- These evolutionary resources once lost, will be lost forever.

Solutions for Water Scarcity:

- By educating those who are not dealing with water scarcity, they can be in a position to help. Those who are dealing with it can get educated on how they can prevent the problem from becoming even worse in the future.

- There are plenty of technologies that allow us to recycle rainwater and other water that we may be using in your home. Not only does it help to prevent scarcity, but it can save us some money as well.

- Advance Technology Related to Water Conservation.

- We need to improve practices of farming and irrigation so that we don't use as much water and those who are using water should use it to its fullest potential. Technology also needs to advance in this manner.

- Without proper sanitation, the water in an area becomes ridden with disease and any number of other problems. By improving the sewage systems in these areas, we can prevent water scarcity from becoming any worse.

- Support Clean Water Initiatives.

TOPIC: GS II, ASPECTS OF GOVERNANCE

7. Regulation of E-Commerce in India

Source: The Hindu

Why in news:

- A task force of the Commerce Ministry has submitted its recommendations on a draft national e-commerce policy.

- The suggestions, if accepted by the government, could impact consumers' online shopping experience in multiple ways, including how discounts are given, the availability of newer products, and the redressal of complaints.

Retail trading in India:

- India's e-tail business, estimated to be worth around $25 billion, is still a fraction of the overall retail sector in the country but major events like merger between Flipkart and global giant Walmart has raised the question about regulation on E-tail business in India.

- India's e-commerce sector is expected to grow to $200 bn fro$ 25bn over the next 10 years.

- Having covered the metros and large cities, the bigger e-commerce firms expect their next phase of growth in tier-II and tier-III towns, where the expansion of 3G and 4G networks have given rise to online consumers. This is seen as resulting in job creation, productivity improvement, and increased consumer presence on online platforms.

Recommendations of the committee and its analysis:

- The task force has said that for India to fully benefit from these opportunities, it is important for policymakers to be cognizant also of the underlying challenges which makes it imperative to have clearly laid-down rules for electronic commerce in the country. Many of these rules currently exist in some or the other form, and are enforced by a multiplicity of government departments and regulators.

- A national e-commerce policy will be an attempt at creating a one-stop shop for the norms and regulations under which online retailers will be covered.

- The government does not currently allow foreign direct investment (FDI) in e-commerce companies that hold their own inventories. Online retailers with foreign investments can only operate as marketplaces — letting sellers list their products on the platform. However, given that the lion's share of investments in e-commerce firms came from abroad, the e-tailers found a way around the government's norm by setting up seller entities that sold their products on the platforms.

- In 2016, the government mandated that no platform should have more than 25% of its sales coming from a single seller. Due to the restrictions on the inventory-based model, e-commerce companies have not been able to offer their in-house brands extensively.

- The task force has recommended that FDI may be allowed in inventory-based e-commerce companies up to 49%, with the condition that the e-tailer sells 100% Made-in-India products. This will allow e-commerce firms to offer their own brands — as long as they are made in India.

- On the other hand, for online marketplaces, the task force has suggested imposing restrictions on group companies of such platforms to prevent them from directly or indirectly influencing the prices of goods and services.

- There have been several incidents across the country of customers expressing dissatisfaction with products they purchased online. In some cases, bricks and soaps have been delivered instead of mobile phones. This is an inherent flaw of the marketplace model, where platforms do not have full control over the supply chain. Customers have also complained of prices being artificially jacked up higher than the maximum retail price (MRP), and of problems with the delivery of purchased products. The Consumer Affairs Ministry's National Consumer Helpline is currently the only redressal mechanism available for such grievances.

- To provide a forum for consumers, the task force has suggested the setting up of a Central Consumer Protection Authority (CCPA), which, besides helping consumers, will also act as the nodal agency for intra-government coordination, and provide a platform for e-commerce operators regarding complaints of fraudulent activities.

- If the task force's recommendations finally go through and become policy, e-commerce platforms will have to mandatorily provide the government's RuPay payment option.

- The task force has also suggested that foreign e-commerce websites should be brought on a level playing field with their Indian counterparts by making them follow the same rules for payment systems such as two-factor authentication.

- With the aim to make online payments safer, the task force has also suggested creating a fraud intelligence mechanism, using artificial intelligence-based authentication systems, for early detection of frauds.

- The draft policy proposes the creation of a single national regulator to oversee the entire industry, although operationalising its different features would require action from multiple Ministries and regulators. This would also need amendments to existing legislation and rulebooks. Consumer protection norms to guard online shoppers from possible frauds too are overdue.

- Traditional retailers have voiced concerns about large e-tail players with deep pockets pricing them out of the market, and have been seeking a level playing field.

- Among the ideas in the draft policy are a sunset clause on discounts that can be offered by e-commerce firms and restrictions on sellers backed by marketplace operators. The aim may be to prevent large players from pricing out the competition though unfair practices, but taken too far such licensing and price controls can depress the sector. However to give the government a say on who can offer how much discount and for how long, instead of letting consumers exercise informed choices, would be a regressive step for the economy.

- Foreign direct investment restrictions on players who can hold their own inventory are sought to be lifted, but there must be a majority Indian partner and all products have to be made in India.

- E-tailer costs are also likely to rise on account of proposed norms on storing and processing data locally, while consumers and firms could both question the plan to stipulate payments via Rupay cards.

- The proposed e-commerce policy could drive away those planning online retail forays the opportunity to create jobs and benefit consumers would be lost.

TOPIC: GS II, ASPECTS OF GOVERNANCE

8. SC directs to revamp district courts

Source: The Hindu

Why in news:

Supreme Court wants district courts across the country to make some improvements like

- Separate washrooms for transgenders, 'court managers' with an MBA degree,

- Braille and colour-coded signage

- Crowd management arrangements

- Crèche facility

- A front desk for litigants to find their way

The order came on a petition filed way back in 1989 by the All India Judges Association for better facilities to help in doing their job. The court observed that "without a robust infrastructure, the judiciary would not be able to function at its optimum level."

New Committee:

- The court ordered the State Chief Secretaries to constitute a committee of which the Secretary of the Department of Law should be a member to formulate the development plan for courts.

TOPIC: GS II, GOVERNMENT POLICIES AND INTERVENTION

9. Pradhan Mantri Ujjwala Yojana achieves 5 crore mark

Source: PIB

Why in news:

- 5 croreth LPG connections under Pradhan Mantri Ujjwala Yojana (PMUY) has been given recently in the Parliament House.

- Pradhan Mantri Ujjwala Yojana (PMUY) was launched on 1st May, 2016 and it is implemented by Ministry of Petroleum and Natural Gas through its Oil Marketing Companies i.e., IOC, BPCL and HPCL through their network of distributors across the country. Through PMUY, initially, 5 crore BPL households were targeted for providing deposit free LPG connections to BPL households by 31st March, 2019. In a record time of 28 months for its launch, PMUY achieved the initial target of providing 5 crores LPG connection to BPL households. In the current year, considering the huge success of the Scheme the target was revised to 8 crores.

- 47% of the beneficiaries are from the weaker sections of the society i.e., SC/STs.

- PMUY has been recognised by World Health Organisation as one of the decisive intervention by the Government to address the Indoor Air Pollution which accounts for nearly 10 lakh deaths in a year in the country.

- PMUY aims at providing clean-cooking fuel to the poor households, which are otherwise vulnerable to various health hazards associated with indoor air pollution and bringing in qualitative changes in the living standards. PMUY is under implementation in the all the States/UTs. Beneficiaries are identified through Socio-Economic Caste Census List-2011 and in such cases where names are not covered under SECC list, beneficiaries are identified from seven categories which includes SC/ST households,

beneficiaries of PMAY (Gramin), Antyodaya Anna Yojana, Most Backward Classes, Forest Dwellers, Resident of Islands/River Islands and Tea Garden & Ex-tea Garden Tribes.

TOPIC: GS II, ASPECTS OF GOVERNANCE

10. Supreme Court Guidelines on Dealing with Lynching in India

Source: The Hindu

Meaning:

- Lynching is a form of violence in which a mob, under the pretext of administering justice without trial, executes a presumed offender, often after inflicting torture and corporal mutilation. The term lynch law refers to a self-constituted court that imposes sentence on a person without due process of law.

- Vigilante justice has been practiced in many countries under unsettled conditions whenever informally organized groups have attempted to supplement or replace legal procedure or to fill the void where institutional justice did not yet exist. Such conditions commonly give rise to acts of genocide.

Tehseen S. Poonawalla v. Union of India

In this case the Supreme Court has given out certain guidelines

- Lynching in India should be dealt by the state governments.

- Number one the state governments are required to designate a senior police officer not below the rank of SP as a nodal officer. This officer will be required to form a special task force to collect information on the kind of persons who are going to commit such acts of lynching. Nodal officers are also required to make sure that the social media is a free of all kinds of fake news and also to ensure that social media is not used as a platform to organize such acts of vigilantism.

- Government, including the Centre and the state will be using public media platforms such as radio television and other to send the message about the consequences of taking law into the hands.

- In case of an incidence of mob lynching then the jurisdictional police officer will have to first file an F I R. The station house officer will now intimate the nodal officer and the nodal officer has to ensure that the victims family members are not harassed.

- The nodal officers should also ensure that the investigation and prosecution of these cases is carried out strictly and the charge sheet is definitely filed within the prescribed time period and also the trial should be through fast track courts within six months.

- Upon conviction the maximum sentence is provided of and the "hopes that this will act as a deterrent.

United States of America:

- In US at one point of time lynching was very rampant. Between 1882 and 1951, 4,730 persons were lynched, of whom 1,293 were white and 3,437 were black.

- Lynching continued to be associated with U.S. racial unrest during the 1950s and '60s, when civil rights workers and advocates were threatened and in some cases killed by mobs.

- In United States there was no federal law against lynching for almost a period of hundred years and it was only in 2005 that the US Senate apologised for not passing an anti lynching law.

India's Case:

- It is time for the government to implement the directions of the Supreme Court immediately in India we just don't need laws to deal with such kind of deep-rooted prejudices but also it must be fought politically.

TOPIC: GS II, AGRICULTURE

11. Bt Cotton in India

Source: Indian Express

Why in news:

- The Field Inspection and Scientific Evaluation Committee (FISEC), set up at the instance of the Prime Minister's office (PMO), has submitted a report which points out that unauthorised herbicide tolerant Bt cotton was planted in 15 per cent of the area under cotton in Andhra Pradesh, Gujarat, Maharashtra and Telangana and in 5 per cent of the area under cotton in Punjab during the 2017 kharif season.

- The report also points out that farmers have been paying Rs 1,000 to Rs 1,500 per 450gm packet of seeds, despite an official cap of Rs 800 per 450gm packet of these seeds.

- The report also revealed that the seeds have not been smuggled from outside the country but were manipulated with the original varieties of Mahyco Monsanto Biotech Limited (MMBL) that were under trial.

Bolgard II

- It is almost official now that there is a thriving business in the new cotton technology, Bollgard-II

with herbicide tolerant traits. This technology has, however, not been approved by the government.

- This indicates the following:

  (a) Farmers want access to new technologies provided they benefit from them.

  (b) They are ready to take risks to procure these seeds even if that means transacting with unscrupulous dealers and paying prices substantially higher than those fixed by the government.

- This illicit business puts the government's regulatory mechanism in poor light.

- It is time to think rationally in the interest of cotton farmers. The present government can learn from steps taken for modernising agriculture under Vajpayee government.

Introduction of Bt cotton in India:

- The government faced somewhat similar situation in 2001 when it learnt that some farmers in Gujarat had planted Bt cotton without government approval. Government averted any arrest or confiscation of premises and saw it as an opportunity for India to emerge as global leader in biotech.

- Thus the use of Bt cotton was approved in 2002, the first GMO crop in the country, despite opposition from several quarters. During this time Vajpayee extended Lal Bahadur Shastri's well-known slogan to include science —"Jai Jawan, Jai Kisan, Jai Vigyan" which clearly showed that Indian agriculture should be based on science, and the country needed to become a leader in the use of biotech in order to fight hunger and malnutrition.

- India officially released its first Bt cotton (Bollgard I) in 2002, patented by Mahyco-Monsanto Biotech Ltd (MMBL) and multiplied by several Indian companies. Licensee fees ensured protection of MMBL's intellectual property rights. In 2006, MMBL introduced Bollgard-II with additional traits. As a result of this decision, India has emerged as the largest producer of cotton and the second largest exporter in the world. Farmers' earnings increased and the nation earned valuable foreign exchange.

- Today, more than 95 per cent of the country's cotton growing area is under Bt cotton.

- However the succeeding government did not show much courage and wisdom to approve other GM crops like Bt brinjal and mustard despite the scientific body (GEAC) approving their use. This timidity is killing India's chance to be a global leader in GM technology.

- Bollgard-I (BG-I) was the first Bt variety launched by MMBL with single gene, cry1Ac, that fought infestations caused by the American bollworm (Heliothis Armigera). The last official approval for BG-II with double gene cry1Ac and cry2Ab for enhanced protection came in 2006.

- After 12 years of BG-II, these benefits seem to be fading away. The pink bollworm outbreak in Maharashtra last year may be an indication of that. Along with better farm practices for BG-II, it is time to have BG-III with additional pest resistant proteins (cry1Ac, cry2Ab and vip3A). This will enhance pest resistance and along with saving farmer labour costs on management.

- Brazil and the US are global leaders in the use of this technology. If the country does not act now, the gains made by the earlier government will fade away.

- The government should give serious thought to giving farmers access to the best technologies. It should also put in place measures to protect the IPR of suppliers of genuine innovations.

TOPIC: GS II, INTERNAL SECURITY

12. New Defence Production Policy

Source: PIB

Why in news:

- A draft Defence Production Policy 2018 has been prepared which provides a focused, structured and significant thrust to development of defence design and production capabilities in the country.

- The salient features of the Draft Policy which is already placed in public domain for consultation with stakeholders is as follows:

  1. Creation of a dynamic, robust and competitive defence and aerospace industry as an important part of the 'Make in India' initiative.

  2. Creation of a tiered defence industrial ecosystem in the country.

  3. Reducing current dependence on imports and strive to achieve self-reliance in development and manufacture of weapon systems / platforms.

- It mandates for Transfer of Technology or enhanced Foreign Direct Investment (FDI) for domestic production in the event of non-availability of manufacturing capabilities in the country.

- It envisages that Ordnance Factory Board (OFB) should focus on system integration, design and development, and actively engage domestic vendors in the private sector for other assembly work.

TOPIC: GS II, GOVERNMENT POLICY AND INTERVENTION

13. Draft Forest Policy and Tribals

Source: PIB

Why in news:

- The Ministry of Environment, Forest and Climate Change has kept the Draft National Forest Policy, 2018 in public domain for comments.

- The basic thrust of the draft National Forest Policy 2018 is for conservation, protection and management of forests along with addressing other issues associated with forest and forest management.

- To protect the interest of tribals, the Draft Policy of 2018 proposes to launch Community Forest Management Mission for management of community forest resources though a participatory forest management approach. Moreover, specific provisions have been made in the draft policy to ensure that the interests of local communities are protected and also provisions are made to consider them as partner in management of forests.

- Forest rights of tribals and others traditional forest dwellers are safeguarded under a separate Act, namely, "The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Right) Act, 2006" (Forest Rights Act, 2006) which recognizes and vests the forest rights of the Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations.

TOPIC: GS II, ASPECTS OF GOVERNANCE

14. Bill for death in Rape Cases cleared

Source: The Hindu

Why in news:

- A Bill awarding a maximum sentence of death to those convicted for raping girls below 12 years of age was passed by both the houses of the Parliament.

- It replaces the Criminal Law (Amendment) Ordinance that was promulgated recently following a public outrage over the rape and murder of a minor girl in Jammu and Kashmir's Kathua and the rape of a minor from Unnao in Uttar Pradesh.

- The amendments have been made to the Indian Penal Code, the Criminal Procedure Code, Evidence Act and the Protection of Children from Sexual Offences Act.

Provisions in the bill:

- The minimum sentence in cases of rape of women has been increased from seven to 10 years of rigorous imprisonment.

- In cases involving girls below 16 years, the minimum punishment has gone up from 10 to 20 years, which is extendable to life imprisonment.

- The law also for speedy investigations and trial. The probe has to be completed within two months.

- The deadline for completion of trial in all rape cases will also be two months, while a six-month limit has been set for disposal of appeals.

- There will be no provision for anticipatory bail for a person accused of rape or gang-rape of an under-16 girl.

- It has provision for maintaining national database and profile of sexual offenders by National Crime Records Bureau (NCRB). This data will be regularly shared with States/UTs for monitoring, tracking and investigation including verification of antecedents by police.

- Madhya Pradesh, Haryana, Rajasthan and Arunachal Pradesh have already passed Laws for Capital Punishment to those raping girls below 12 years of age.

TOPIC: GS II, JUDICIARY

15. SC notifies norms for 'Senior Advocate' status

Source: The Hindu

Why in news:

- The Supreme Court has notified guidelines for according 'senior advocate' designation to lawyers.

- It is a major effort to streamline and bring in transparency into the process of designating advocates as "seniors".

- The finalised guidelines are titled "Supreme Court Guidelines to regulate Conferment of Designation of Senior Advocates, 2018."A five-member permanent committee headed by the Chief Justice of India has been constituted to shortlist candidates.

- The secretariat would invite applications annually.

- The names will then be sent to the Full Court, comprising all apex court judges, for a decision, where the voting will be conducted following the secret ballot system.

- The candidates can apply or the committee can suo motu recommend a candidate to the Full Court.

The five Members Committee:

- This committee shall comprise of the Chief Justice of India as its Chairperson, two senior-most Supreme Court judges, Attorney general for India, and a member of the Bar as nominated by the Chairperson.

- The committee would meet twice a year in January and July.
- It would have a permanent secretariat to facilitate the collating of details of the probable candidates. The composition of which would be decided by the CJI in consultation with other members of the Committee.

Who are eligible for 'Senior Advocate' status?

- An Advocate shall be eligible for designation as Senior Advocate only if he has 10 years combined standing as an advocate or a District Judge, or as a Judicial Member of any Tribunal whose qualification for eligibility isn't less than that prescribed for a District judge.
- Retired Chief Justices or judges of the High Courts are also eligible for the distinction.

TOPIC: GS II, ASPECTS OF GOVERNANCE

16. Amendment in LS to make adoption easier

Source: The Hindu

Why in news:

- The government introduced an amendment to the Juvenile Justice (JJ) Act, 2015, in the Lok Sabha to empower District Magistrates with the authority to grant adoption orders.
- The Juvenile Justice (Care and Protection of Children) Amendment Bill, 2018, revises the provisions governing adoptions in the JJ Act by making changes to Section 56,58, 59, 60, 61, 63, 64 and 65, where the word "court" has been replaced by "District Magistrate."
- The changes are applicable for both domestic and international applications.
- The bill also proposes the transfer of all adoption cases in various courts to the District Magistrates concerned.

Why was the amendment proposed?

- The heavy workload of the courts had been resulting in "inordinate delay" in issuing adoption orders. As many as 629 cases relating to the passing of orders for adoption were pending in various courts across the country as on July 20, 2018.
- The amendment was proposed with the objective of avoiding pendency of cases.
- The bill seeks to empower the district magistrates to issue orders for adoption in order to avert inordinate delay by the courts in doing the same.
- It will make the adoption procedure faster for prospective parents, by avoiding delays in courts.

Juvenile Justice Act 2015:

- The Act came into effect from January 15, 2016, with comprehensive provisions for the children allegedly found to be in conflict with law as well as those in need of care and protection.

TOPIC: GS II, GOVERNMENT POLICIES AND INTERVENTION

17. Pradhan Mantri Suraksha Bima Yojana

Source: PIB

Why in news:

- The enrolments under PMSBY have gradually increased since its launch. As on 31st July 2018, 13.74 crore people have been covered under PMSBY across the country.
- Pradhan Mantri Suraksha Bima Yojana (PMSBY) was launched on 9th May, 2015 with a view to enhance the level of insurance penetration in the country and to provide insurance cover to common people especially poor and the Under-privileged Sections of the society.

Steps taken by the Government to increase the awareness among the people:-

- The Government as well as the Public Sector Insurance Companies and Banks have organized massive campaign through media to create awareness amongst large sections of population and also carried outreach efforts to facilitate access to the schemes.
- Regular advertisements about PMSBY are being carried-out in the newspapers, TV and radio.
- An exclusive website www.jansuraksha.gov.in, which hosts all relevant material / information including forms, rules, frequently asked questions (FAQs) etc. related to this Scheme in English, Hindi and Regional languages has been created.
- Posters and banners have been displayed regarding the Scheme in various offices of Banks and Insurance Companies across the country.
- Public Sector General Insurance Companies (PSGICs) and Banks had coordinated with State Governments and put up camps at different locations across the country for publicizing and increasing enrollments under PMSBY .
- A Special Campaign Gram Swaraj Abhiyan was organized from 14th April, 2018 to 5th May, 2018 and further extended from 1st June, 2018 to 15th August, 2018 targeting poor households for providing universal coverage under PMSBY wherein the PSGICs and banks had put up stalls to enroll people in such Schemes.

TOPIC: GS II, GOVERNMENT POLICIES AND INTERVENTION

18. Implementation of PMFBY

Source: The Hindu

About the scheme:

- The Pradhan Mantri Fasal Bima Yojana (PMFBY) is a scheme involving several stakeholders including State Governments, financial institutions, insurance companies and farmers, both loanee and non-loanee.

- It also envisages adoption of technology for integration of all stakeholders on the National Crop Insurance Portal for scheme administration and in capturing crop loss assessment etc.

- Issues faced by stakeholders in adopting the new technology regimen, in following seasonality discipline along with the fact that claim settlement is primarily dependent on receipt of clear yield data from States as well as timely payment of their share of premium subsidy to insurance companies are some of the major challenges in implementing PMFBY.

- The scheme provides for setting up of Technical Support Unit (TSU) with crop insurance expert to track and evaluate the scheme implementation. Initially, the Agriculture Insurance Company of India Ltd. (AIC) and subsequently the GIC Re were designated as TSU. Government has recently engaged a team from United Nations Development Programme (UNDP) to set up Project Monitoring Unit (PMF)/TSU.

- Operational Guidelines of PMFBY also contain provisions for bidding/notification of PMFBY by States for three years so that insurance companies concerned may be able to create infrastructure and manpower in the clusters allocated to them. The Government is impressing upon the States at various platforms for bidding/notification for longer period.

- There is a two pronged strategy for use of technology in PMFBY. Firstly, the scheme will be administered through National Crop Insurance Portal on which all stakeholders have been integrated to facilitate realtime information flow and service delivery through better coordination, transparency and auto-administration of the scheme. Secondly, for accurate assessment of yield loss, risk classification, rationalization of Crop Cutting Experiments etc. cutting edge technology VIZ. Remote sensing Imagery through satellites and Unmanned Aerial Vehicle (UAV/DRONE), Smartphone/CCE Agri App are being deployed.

II. SOCIAL JUSTICE

TOPIC: GS II, HEALTH

19. Three Northeastern States emerge as new HIV hotspots

Source: The Hindu

Why in news:

- Three North Eastern States, Meghalaya, Mizoram and Tripura emerge as new HIV hotspots.

- The Health Ministry attributed the rise of incidence to: injecting drug users and unsafe sexual practices.

- The good news is that there has been a steady decline in the number of HIV cases in India.

- In the case of pregnant women visiting ante-natal clinics (ANC), six centres in Mizoram, two in Meghalaya and one in Tripura recorded HIV prevalence of more than 1%, compared with HIV prevalence of 0.28% among pregnant women visiting ANCs in other places in India surveyed in December 2017.

HIV Sentinel Surveillance:

- The HIV Sentinel Surveillance (HSS), a biennial study conducted by the National AIDS Control Organisation (NACO), is one of the largest regular studies in the world dealing with HIV in high risk groups of the population.

- The HSS had referred that HIV prevalence in the context of ANCs in the North Eastern States of Mizoram (1.19%), Nagaland (0.82%), Meghalaya (0.73%), Tripura (0.56%) and Manipur (0.47%) were among the highest.

Way Forward:

- The discussion on HIV prevalence has to be taken to the districts.

- Prevention and intervention strategies for the most-at-risk population in the pockets in the districts with good coverage are necessary.

- Anti-Retroviral Treatment (ART), must be made easily accessible.

TOPIC: GS II, HEALTH

20. Multi Drug Resistant TB population in India

Source: PIB

Why in news:

- As per Global TB report 2017, estimated number of Multi Drug Resistant (MDR) TB patients are 6,01,000 globally, of which 147000 (1/4th) are estimated from India.

- Bedaquiline drug was introduced in India in 2016 under conditional access programme for selective group of the Multi drug resistant TB patients based on drug sensitivity results of second line anti TB drugs.

- In India, this drug is available through Revised National TB Control Programme (RNTCP) only and open market sale of Bedaquiline is not permitted by Drug Control General.

- Recently Nobel Laureate Sir John Walker had raised concern about the already known cardiotoxicity associated with the drug Bedaquiline.

III. ECONOMY

TOPIC: GS III, INFRASTRUCTURE-ENERGY

21. Nationwide 'State Energy Efficiency Preparedness Index' released

Source: PIB

Why in news:

As part of its commitment to create awareness about energy efficiency as a resource and also to develop an action plan for energy conservation initiatives, Bureau of Energy Efficiency (BEE) and Alliance for an Energy Efficient Economy (AEEE), released the 'State Energy Efficiency Preparedness Index'.

Key points about the Index:

- The nationwide Index, which is a joint effort of the NITI Aayog and BEE assesses state policies and programmes aimed at improving energy efficiency across various sectors.

- The Index has 63 indicators across Building, Industry, Municipality, Transport, Agriculture and DISCOM with 4 cross-cutting indicators.

- The Index examines states' policies and regulations, financing mechanisms, institutional capacity, adoption of energy efficiency measures and energy savings achieved.

- States are categorised based on their efforts and achievements towards energy efficiency implementation, as 'Front Runner', 'Achiever', 'Contender' and 'Aspirant'.

- The 'Front Runner' states in the inaugural edition of the Index are: Andhra Pradesh, Kerala, Maharashtra, Punjab, and Rajasthan based on available data.

Significance of the Index:

- The State Energy Efficiency Preparedness Index will help in implementing national energy efficiency initiatives in states and meet both State

as well as national goals on energy security, energy access and climate change.

TOPIC: GS III, INDIAN ECONOMY AND ISSUES RELATING TO PLANNING, DEVELOPMENT AND EMPLOYMENT

22. Mukhyamantri Yuva Nestam

Source: The Hindu

Why in news:

Andhra Pradesh Government has approved Mukhyamantri Yuva Nestam, an unemployment allowance scheme.

About the scheme:

- The scheme aims to provide Rs 1000 per month unemployed youth in the state. It will not be applicable to those paying provident fund.

- About 12 lakh youths in the age group of 22-35 years will get the benefit of the scheme. The registration for the scheme will start mid-August.

- The scheme will be extended to all those eligible even if there are more than one beneficiary in a family.

- The money will be credited directly into the bank accounts through biometric authentication.

- The government will not only provide financial help to the unemployed youth but also provide training and help them develop their skills.

- The data of unemployed youth in the state will be made available for industries and companies searching for young talent.

GS PAPER 3: INFRASTRUCTURE

23. Strategic Investment Fund under NIIF

Source: PIB

Why in news:

- As on date, three funds have been established by the Government under the NIIF platform and registered with SEBI as Category II Alternative Investment Funds and National Investment and Infrastructure Fund II ("Strategic Fund") is one of those three funds.

- The other two funds are National Investment and Infrastructure Fund (or Master Fund) and NIIF Fund of Funds - I.

Key Points:

- The objective of National Investment and Infrastructure Fund II ("Strategic Fund") is to invest largely in equity and equity-linked instruments.

- The Strategic Fund will focus on green field and brown field investments in the core infrastructure sectors.

National Investment and Infrastructure Fund (NIIF):

- It is a fund created by the Government of India for enhancing infrastructure financing in the country.

- NIIF was proposed to be set up as a Trust, to raise debt to invest in the equity of infrastructure finance companies such as Indian Rail Finance Corporation (IRFC) and National Housing Bank (NHB). The idea is that these infrastructure finance companies can then leverage this extra equity, manifold. In that sense, NIIF is a banker of the banker of the banker.

- NIIF is envisaged as a fund of funds with the ability to make direct investments as required. As a fund of fund it may invest in other SEBI registered funds.

- NIIF's mandate includes investing in areas such as energy, transportation, housing, water, waste management and other infrastructure-related sectors in India.

- Its creation was announced in the Union Budget 2015-16. The operational framework was approved on 20 August 2015. NIIF got registered with SEBI as Category II Alternative Investment Fund (AIF) on December 28, 2015.

Functions of NIIF:

1. Fund raising through suitable instruments including off-shore credit enhanced bonds, and attracting anchor investors to participate as partners in NIIF;

2. Servicing of the investors of NIIF.

3. Considering and approving candidate companies/ institutions/projects (including state entities) for investments and periodic monitoring of investments.

4. Investing in the corpus created by Asset Management Companies (AMCs) for investing in private equity.

5. Preparing a shelf of infrastructure projects and providing advisory services.

TOPIC: GS III, INTELLECTUAL PROPERTY RIGHTS

24. Kadaknath chicken meat from Jhabua of MP gets Geographical Indication tag

Source: Economic Times

Why the news:

The famous Kadaknath chicken meat from Jhabua district of Madhya Pradesh has now got a Geographical Indication (GI) tag.

Key Points:

- The tag denotes that the product comes from a particular geographical area, and often enhances its commercial value.

- A Chhattisgarh-based organisation too had sought similar recognition for the Kadaknath chickens bred in Dantewada district, but Jhabua's claim seems to have prevailed.

- The Gramin Vikas Trust of Krishak Bharati Cooperative (KRIBHCO) had sought GI tag for the protein-rich and black coloured meat of Kadaknath variety of chicken, which is mainly reared in Jhabua.

- It is locally known as Kalamasi and is used for treatment of many diseases, besides being considered an aphrodisiac.

IV. ENVIRONMENT

TOPIC: GS III, CONSERVATION, ENVIRONMENTAL POLLUTION AND DEGRADATION

25. Arsenic contamination in paddy is rising in Bengal, says study

Source: The Hindu

Why in news:

A recent publication by researchers at the School of Environmental Studies (SOES), Jadavpur University, reveals not only rise in arsenic contamination of paddy plants from ground water in West Bengal, but also that concentration of 'arsenic accumulation' depends on the variety of paddy and its stage in the crop cycle.

- Samples for the study were taken from the Deganga block in the State's North 24 Parganas district, an area that's worst affected by ground water arsenic contamination.

Highlights of the study:

- The study shows that arsenic uptake in the paddy plant reduces from root to grain, and that its concentration is related to the variety of the rice cultivated.

- The study was carried out on two commonly consumed rice varieties — Minikit and Jaya — and the latter was found to be more resistant to arsenic.

- The highest concentration was observed in the initial or vegetative state in the first 28 days. It reduced during the reproductive stage (29-56 days) and again increased in the ripening stage. The uptake of arsenic is faster in young roots in a vegetative state than in older tissues with a higher concentrations of iron in root soil in the reproductive phase.

- The study also raised concerns over the disposal of the contaminated rice straw which is used as animal fodder or burnt or sometimes left in the field itself to serve as fertiliser.

Arsenic Poisoning:

- Arsenic is a natural component in Earth's crust. It is widely distributed throughout environment in air, water and land. It is highly toxic in its inorganic form. Intake of soluble inorganic arsenic over long perios can lead to chronic arsenic poisoning (arsenicosis), diabetes, cardiovascular diseases and cancer. In India, Arsenic contamination is a big problem in West Bengal and neighbouring states.

What needs to be done?

- Technological options to combat arsenic menace, in groundwater, to ensure supply of arsenic free water, in the affected areas can be in-situ remediation of arsenic from aquifer system, ex-situ remediation of arsenic from tapped groundwater by arsenic removal technologies, use of surface water source as an alternative to the contaminated groundwater source, tapping alternate safe aquifers for supply of arsenic free groundwater or combination of above techniques.

> **TOPIC: GS III, CONSERVATION, ENVIRONMENTAL POLLUTION AND DEGRADATION**

26. Khangchendzonga Biosphere Reserve enters UNESCO list

Source: PIB

Why the news:

The Khangchendzonga Biosphere Reserve has become the 11th Biosphere Reserve from India that has been included in the UNESCO designated World Network of Biosphere Reserves (WNBR).

- The decision to include Khangchendzonga Biosphere Reserve in WNBR was taken at the 30th Session of International Coordinating Council (ICC) of Man and Biosphere (MAB) Programme of UNESCO held at Palembang, Indonesia, from July 23-27, 2018.

- India has 18 Biosphere Reserves and with the inclusion of Khangchendzonga, the number of internationally designated WNBR has become 11, with 7 Biosphere Reserves being domestic Biosphere Reserves.

About Khangchendzonga Biosphere Reserve:

- Khangchendzonga Biosphere Reserve in Sikkim is one of the highest ecosystems in the world, reaching elevations of 1, 220 metres above sea-level. It includes a range of ecolines , varying from sub-tropic to Arctic, as well as natural forests in different biomes, that support an immensely rich diversity of forest types and habitats.

- The core area of the Biosphere Reserve is a major transboundary Wildlife Protected Area. The southern and central landscape, which makes up 86% of the core area, is situated in the Greater Himalayas. The northern part of the area accounts for 14% is characterized by trans-Himalayan features. Buffer zones are being developed to promote eco-tourism activities. Plantation and soil conservation work is also being carried out.

- The core zone – Khangchendzonga National Park was designated a World Heritage Site in 2016 under the 'mixed' category. Many of the mountains, peaks, lakes, caves, rocks, Stupas (shrines) and hot springs function as pilgrimage sites. Over 118 species of the large number of medicinal plants found in Dzongu Valley in north Sikkim are of ethno-medical utility. The transition zone is targeted for eco-development activities, afforestation, plantation of medicinal herbs and soil conservation measures.

- Many species protected under the Wildlife Protection Act have their home in the KBR. This includes the Red Panda, Snow Leopard, Himalayan Black Beer and herbivores species of Musk deer, Great Tibetan Sheep, Blue Sheep, Boral and Barking Deer. Over 500 species and sub-species of birds, including high-altitude pheasants — Monal Pheasants, Tragopan Pheasants and Blood Pheasants (the State Bird) — are also found in the reserve.

UNESCO's Man and the Biosphere Programme (MAB):

- Launched in 1971, UNESCO's Man and the Biosphere Programme (MAB) is an Intergovernmental Scientific Programme that aims to establish a scientific basis for the improvement of relationships between people and their environments.

- MAB combines the natural and social sciences, economics and education to improve human livelihoods and the equitable sharing of benefits, and to safeguard natural and managed ecosystems, thus promoting innovative approaches to economic development that are socially and culturally appropriate, and environmentally sustainable.

- Its World Network of Biosphere Reserves currently counts more than 600 sites in 122 countries all over the world, including 20 transboundary sites.

- The first of India's reserves to make it to UNESCO's list was Tamil Nadu's Niligiri Biosphere Reserve in 2000.

- Protection is granted not only to the flora and fauna of the protected region, but also to the human communities who inhabit these regions, and their ways of life.

Biosphere Reserves:

A Biosphere Reserve is a unique and representative ecosystem of terrestrial and coastal areas which are internationally recognized, within the framework of UNESCO's Man and Biosphere (MAB) programme. The biosphere reserve should fulfill the following three objectives:

- In-situ conservation of biodiversity of natural and semi-natural ecosystems and landscapes.

- Contribution to sustainable economic development of the human population living within and around the Biosphere Reserve.

- Provide facilities for long term ecological studies, environmental education and training and research and monitoring.

In order to fulfill the above objectives, the Biosphere Reserves are classified into zones like the core area, buffer area. The system of functions is prescribed for each zone.

TOPIC: GS III, ISSUES RELATED AGRICULTURE AND IRRIGATION

27. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

Source: PIB

Why in news:

- A revised Memorandum of Agreement (MoA) has been signed amongst Govt. of India (through MoWR, RD & GR), NABARD and National Water Development Agency (NWDA) for funding of central share of 99 prioritized irrigation projects under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) through Long Term Irrigation Fund (LTIF).

- It will enable this Ministry to release Central Assistance to prioritized projects under PMKSY as per the requirements from time to time.

About LTIF:

- To cater to the large fund requirement and ensure completion of the projects, the Union Finance Minister, during his Budget speech 2016-17, announced creation of dedicated Long Term Irrigation Fund (LTIF) in NABARD with an initial corpus of Rs. 20,000 crore for funding of Central and State share for the identified ongoing projects under PMKSY (AIBP and CAD).

- Corpus would be raised by way of budgetary resources and market borrowings to fund fast

tracking of implementation of incomplete major & medium irrigation projects.

About PMKSY:

During 2015-16, PMKSY was launched by the Central Government with an overarching vision to ensure access to some means of protective irrigation for all agricultural farms in the country, and to produce 'per drop more crop', thus bringing much desired rural prosperity.

PMKSY has been conceived amalgamating ongoing schemes viz. Accelerated Irrigation Benefit Programme (AIBP) of the Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR, RD&GR), Integrated Watershed Management Programme (IWMP) of Department of Land Resources (DoLR) and the On Farm Water Management (OFWM) of Department of Agriculture and Cooperation (DAC).

- The scheme will be implemented by Ministries of Agriculture, Water Resources and Rural Development.

- The major objective of PMKSY is to achieve convergence of investments in irrigation at the field level, expand cultivable area under assured irrigation, improve on-farm water use efficiency to reduce wastage of water and enhance the adoption of precision-irrigation and other water saving technologies.

V. INTERNATIONAL RELATIONS

TOPIC: GS II, IMPACT OF POLICIES OF DEVELOPED AND DEVELOPING COUNTRIES ON INDIA

28. India-South Korea Relations

Source: The Hindu

Why in news:

- South Korea launched a foreign initiative called New Southern Policy last year to step up it's engagement with India and the ASEAN countries.

- It was pointed out by South Korea that the government wished to elevate relations with India to the same level as with other major powers in the world — namely, the U.S., China, Japan and Russia.

- Given the immense potential for cooperation to bring about real change that could benefit India, South Korea and the broader region South Korea's President's visit signals a deepening of bilateral ties driven by mutual strategic interest.

What lies behind South Korea's reimagined diplomatic posture towards India?

- In recent times, South Korea has been heavily impacted by power politics between the U.S. and

China. The clash between the two countries over the deployment of the U.S. Thaad missile defence system in the Korean Peninsula set off an economic retaliation by China against South Korea, whose economy is highly dependent on the Chinese market.

- The ongoing U.S.-China trade war has heightened uncertainty surrounding South Korea's core economic interests which urged it to reassess risks associated with economic turbulence stemming from Chinese policies, which is a threat to the national security of South Korea in some cases.

- To escape the power politics in Northeast Asia, South Korean policymakers believe that they should diversify its relations with other major powers in the region, including India which they see as a viable alternative partner.

The multiple dimensions that could strengthen India-South Korea strategic ties are:

- Working together on ensuring freedom of navigation.

- Unimpeded lawful commerce in the Indo-Pacific region.

- South Korea backs India's bid for Nuclear Suppliers Group membership, especially when latter has faced sustained opposition from China.

- Both nations are working with third countries on a tripartite basis for regional development, exemplified by plans for capacity-building programmes in Afghanistan.

- India has asserted its place as a "stakeholder" in the Korean peace process, while South Korea has for the first time shown an interest in talking about an Indo-Pacific policy.

- At a time when U.S. foreign policy is unpredictable, and China's is making purposeful moves towards global domination, it is important that the South Korea-India partnership grows and consolidates, to contribute to stability in the region.

> **TOPIC: GS II, IMPACT OF POLICIES OF DEVELOPED AND DEVELOPING COUNTRIES ON INDIA**

29. Import of dual-use tech from US and its benefits

Source: Indian Express

Background:

- One of India's key objectives in signing the civil nuclear deal with the United States in 2008 was to gain access to high technology that it had been denied previously.

- Few years back US recognised India as a "Major Defence Partner", and committed itself to sharing technology to the same level as its closest allies and partners, and to collaborate for defence co-production and co-development. This status of is, however, unique to India because US either has military alliances such as the North Atlantic Treaty Organisation (NATO) or bilateral defence treaties.

US dual Technology:

- The export of defence and dual-use technology by the US is mostly a political call.

- Two factors — US national security, and the recipient's regional stability — are key to the political determination of whether the US will give or deny to another country an item or technology that can be put to both military and civilian use.

- The US has traditionally had a very restrictive export licensing regime. In August 2009, US undertook a comprehensive review of it's export control system with the aim to simplify Cold War era practices that were intended mainly to prevent technologies from falling into Soviet hands, and to make the American tech industry more competitive and create more jobs.

- In 2011, as part of the export control reforms initiative, it came up with the concept of Strategic Trade Authorisation (STA) — a move towards a licence-free or license exemption regime. Two lists were created — STA-1 and STA-2 which established a hierarchy of countries which the US was willing to certify as "good countries" that would not contribute towards "proliferation" in the world.

- The STA-1 includes countries that US considers to be the best in the world. They have licence-free access to almost 90% of dual-use technology, and are eligible to import items that are controlled for reasons of national security while countries in the STA-2 countries cannot access dual-use items/technology that may impact regional stability.

- A vast majority of countries remain outside both STA-1 and STA-2, and cannot access high technology from the US without specific licences.

Coming Closer:

- For India's government, community, and the defence and high-technology industry, the move from STA-2 to STA-1 is a leap. Membership of this elite club of US allies is expected to lead to greater high-technology trade and commerce.

- It could open up doors for both sales and manufacturing in India. "Industry can set up manufacturing bases in India without having the requirement of prior license.

- The fact that India is now part of STA-1, despite not being member of all four multilateral export control regimes, is a testament to its non-proliferation credentials.

- Ahead of the 2+2 dialogue between the Indian and US Foreign and defence ministers in near future, this is a major takeaway, as India moves closer to realising the potential of being a major defence Partner of the US.

- According to India, the decision to put India in STA-1 and designating it as major defence Partner is a "reaffirmation" of its "impeccable record" as a responsible member of multilateral export control regimes.

TOPIC: GS II, INDIA AND ITS NEIGHBOURHOOD

30. Mattala project with India

Source: The Hindu

Why in news:

- India and Sri Lankan governments, after detailed negotiations, have agreed that India, with a 70% stake in the joint venture, will contribute $225 mn out of $210mn out of to revamp and run the airport, while the Sri Lankan side will invest the balance.

- India will operate the airport on a 40-year lease, as per the draft agreement.

Background:

- India has agreed to form a joint venture with Sri Lanka to operate the country's loss-making Mattala Rajapaksa International Airport in Hambantota.

- The $210 million facility, 241km south-east of Colombo, is dubbed the "world's emptiest airport" due to a lack of flights.

- The joint venture would see India gain a major stake of the airport.

Strategic importance to India:

- The Chinese takeover of Hambantota port increased India's worries that it will become an Indian Ocean hub for the Chinese navy. Though Hambantota has never been feasible as a full blown Chinese naval base, its proximity to India would make it highly vulnerable to air attack in the event of conflict between the two countries.

- A key element in any overseas naval base, and even a logistics facility, is easy access by air for people and supplies. A naval base also requires maritime air surveillance capabilities. Control over Hambantota airport will give India considerable control over how the port is used.

- Therefore, India's strategic interests run in the airport, located near the China-controlled port in Hambantota.

- This move by India could also be seen as a counter to China's growing presence in the South Asian region.

TOPIC: GS II, IMPACT OF POLICIES OF DEVELOPED AND DEVELOPING COUNTRIES ON INDIA

31. Latin America seeks more missions

Source: The Hindu

Background:

- India had made a promise in 2010 that it will open three new embassies in Latin American nations.

- Former minister of external minister announced in the Dominican Republic that India would open missions in that country, Ecuador and Uruguay.

- These three countries have opened diplomatic missions in India, but India has not reciprocated the gesture. India does not have missions in Uruguay, Paraguay, Bolivia, Ecuador, Costa Rica and El Salvador, though they have missions in India.

Why Embassy is not important?

- Instead of spending millions to keep ambassadors, security teams, and other support staff resident in a foreign country, presidents and prime ministers can now conveniently communicate directly on matters of urgency and importance.

- Cellular phones, e-mails and video-conferencing technology enables world leaders, government officials and bureaucrats to communicate and coordinate directly with one another.

- If person-to-person contact is a must, air travel allows an official to be anywhere in the world in less than a day. Some countries designate special envoys to take advantage. The use of special envoys to cover specific countries and/or issues is certainly more cost-effective than maintaining a fully staffed embassy.

- A network of local contacts can likewise be established to serve as sources on the ground to help gather and evaluate data, information and news, which can then be made available electronically.

Importance of Embassies:

1. Why is Latin America is important for India?

- In 2016-17, India exported more to Mexico ($3.5 billion) than to neighbours such as Thailand ($3.1 billion), Myanmar ($1.7 billion) and Iran ($2.4 billion) or traditional trade partners Russia ($1.9 billion) and Canada ($2 billion).

- India's trade with the Dominican Republic ($900 million) was more than the trade with Portugal, Greece and some other European countries.

- India beats China in export of pharmaceuticals to Latin America. In fact, in the last five years, India has been exporting more pharma to Latin America than China.

2. Pacific Alliance

- The Pacific Alliance is a Latin American trade bloc, formed by Chile, Colombia, Mexico and Peru, which all border the Pacific Ocean.

- These countries have come together to form an area of integration with the purpose of ensure a complete freedom in the movement of goods, services, capital, and people.

- India enjoys an observer status at the annual summit of Pacific Alliance

- A key area for collaboration for PA and India could be understanding the impacts of El-Nino and its common approach against this weather pattern. Countries dependent upon agriculture and fishing, particularly those bordering the Pacific Ocean, are

the most affected by El-Nino. All PA states have coasts along the Pacific.

- PA is turning out to be an integrated market and it opens up opportunities for India in SMEs sector, trade facilitation, science & technology innovation and export of Indian pharmaceutical products.

Conclusion:

- A combination of government initiatives and private ventures and diplomatic engagements have to be increased if we have to realise the full potential of India-Latin American Countries ties.

- Specifically, establishing or maintaining an embassy is a clear sign to the host government of a commitment to deepening bilateral relations.

VI. SCIENCE & TECHNOLOGY

TOPIC: GS III, AWARENESS IN SPACE

32. NASA's TESS Spacecraft

Source: NASA

Why in news:

TESS (Transiting Exoplanet Survey Satellite) has officially started its science operations. Its first observations will be transmitted back to Earth at some point in August, after which it will continue to send in new information for the next two years, at least.

About TESS:

- TESS is NASA's latest satellite to search for planets outside our solar system, known as exoplanets.

- The mission will spend the next two years monitoring the nearest and brightest stars for periodic dips in their light. These events, called transits, suggest that a planet may be passing in front of its star. TESS is expected to find thousands of planets using this method, some of which could potentially support life.

- The solar-powered spacecraft carries four 100-millimeter-wide cameras that provide wide fields of view, according to NASA. They will stare at a particular region of the sky for between 27 and 351 days each, before moving on to another area. (The length of time will be decided according to where the region is in the sky, MIT stated.)

- The spacecraft is expected to map the Southern Hemisphere in its first year, and the Northern Hemisphere in its second year.

- TESS is a NASA Astrophysics Explorer mission led and operated by MIT in Cambridge, Massachusetts, and managed by NASA's Goddard Space Flight Center in Greenbelt, Maryland.

TOPIC: GS III, INDIGENIZATION OF TECHNOLOGY

33. Ballistic Missile Interceptor AAD

Sources: PIB, Indian Express

Why in news:

DRDO conducted the successful test of the Ballistic Missile Interceptor Advanced Area Defence (AAD) from Abdul Kalam Island, Odisha.

About Ballistic Missile Interceptor AAD:

- It is an endo-atmospheric missile, capable of intercepting incoming targets at an altitude of 15 to 25 kms.

- Indigenously developed by DRDO, the AAD interceptor is a single-stage missile powered by solid propellants.

- It is 7.5 metres tall and weighs around 1.2 tonnes. It had a diameter of less than 0.5 metre.

- The DRDO has developed both high-altitude and low-altitude anti-ballistic missiles.

Significance:

- The test assumed significance as India plans to deploy a two-tiered Ballistic Missile Defence (BMD) system to protect its important cities and vital installations from enemy attack.

- While the first phase seeks to destroy incoming enemy missiles in exo-atmospheric region (outside the atmosphere), the second phase envisages killing enemy missiles of more than 2,000 km range in endo-atmospheric (inside the atmosphere) region.

- The interceptor missile has its own mobile launcher, secure data link for interception, independent tracking and homing capabilities and sophisticated radars.

About the Indian BMD programme:

- The Indian Ballistic Missile Defence (BMD) Programme is an attempt to develop and to use a multi-layered ballistic missile defence system to protect from ballistic missile attacks. The India's decision to develop Ballistic Missile Defense (BMD) was introduced in the light of the ballistic missile threat mainly from Pakistan, especially can be attributed to the Kargil War in 1999.

Need for BMD:

- India follows 'No First Use policy'. A robust BMD provides an opportunity to the nation to strike back if a nuclear projectile is launched by an enemy state.

- BMD would shield from non-state actors initiated missile warfare and thus could avoid Mutual Destruction trap.

- BMD reduces the incentive for the enemy state to launch a nuclear attack, thus enhancing strategic stability.

- An indigenous system would reduce the import bill of defence systems from other nations.

- Technology developed for BMD can be used in other sectors, especially in space technology.

TOPIC: GS III, SCIENCE AND TECHNOLOGY- DEVELOPMENTS

34. India's first Blockchain district Telangana

Source: The Hindu

Why in news:

Tech Mahindra and the Telangana government signed an agreement to establish the Blockchain district, a first-of-its-kind Centre of Excellence for Blockchain.

- While Tech Mahindra is setting up a Blockchain district in Hyderabad, Eleven01 Foundation is developing an exclusive Blockchain protocol to suit the country's needs, and the Union Government is establishing a Centre of Excellence on Blockchain here.

- Besides, the International Institute of Information Technology, Hyderabad (IIIT-H) will make part of its protocol development research to the virtual cluster of Blockchain district.

About the Blockchain district:

- Initially it would be a virtual cluster, connecting with the stakeholders working in the emerging technology. It would have a physical building at a later phase.

- It will be "a cluster of buildings", which will house start-ups and other stakeholders working on the development of the platform.

- Tech Mahindra, as a founding member of the Blockchain district, will provide platform and technology assistance to all the incubators in the district.

- On its part, the Telangana government would provide regulatory and policy support to promote the growth of Blockchain.

- Blockchain CoE: The Union Government will set up a Centre of Excellence in the technology. To start with, C-DAC will develop a pilot solution for Property Registration System. If it works well, it will be rolled out to other States as well.

About the Blockchain Technology:

- Blockchain is a new-age technology that helps in record-keeping through the use of cryptography, a secure method of writing digital codes. With blockchain, many people can write entries into a record of information, and a community of users can check the records to reduce the scope of fraudulent practices in altering information.

Benefits:

- As a public ledger system, blockchain records and validate each and every transaction made, which makes it secure and reliable.

- All the transactions made are authorized by miners, which makes the transactions immutable and prevent it from the threat of hacking.

- Blockchain technology discards the need of any third-party or central authority for peer-to-peer transactions.

- It allows decentralization of the technology.

TOPIC: GS III, SCIENCE AND TECHNOLOGY- DEVELOPMENTS

---

35. 122 New Research Project proposals at selected for funding under IMPRINT-2

Source: PIB

Why the news:

For advancing research in the high education institutions, the government has approved 122 new research projects at a cost of Rs 112 crore under IMPRINT-2 covering Energy, Security, Healthcare, Advanced Materials, ICT and Security/Defence domains.

About Impacting Research, Innovation and Technology (IMPRINT):

- IMPRINT is the first of its kind MHRD supported Pan-IIT + IISc joint initiative to address the major science and engineering challenges that India must address and champion to enable, empower and embolden the nation for inclusive growth and self-reliance. This novel initiative with twofold mandate is aimed at:

  (a) Developing new engineering education policy

  (b) Creating a road map to pursue engineering challenges

- IMPRINT provides the overarching vision that guides research into areas that are predominantly socially relevant.

- The implementation of 142 projects under IMPRINT-1 has got underway. These projects have received support from several ministries, councils

and departments in addition to the Ministry of Human Resource Development.

About IMPRINT 2:

IMPRINT-2 has been approved by Government of India (GoI) with a revised strategy under which, this national initiative will be jointly funded and steered by MHRD and Department of Science and Technology (DST). While any faculty member from an MHRD funded Higher Education Institute (HEI) including Centrally Funded Technical Institution (CFTI) may lead as the Principal Investigator (PI), single or multiple partners from stake holder ministry, institutions, PSUs, strategic agencies and industry are welcome as Co-PI, partner or collaborator.

- Proposals under IMPRINT II Projects should (a) address any declared theme (thrust area) under one of the 10 domains of IMPRINT, and (b) connect either with already identified or new research topics defined by the PI under the same 10 domains.

TOPIC: GS III, AWARENESS IN THE FIELDS OF IT, SPACE, COMPUTERS, ROBOTICS, NANO-TECHNOLOGY, BIO-TECHNOLOGY

---

36. RISECREEK: IIT-Madras develop first indigenous microprocessors

Source: The Hindu

Why the news:

Computer scientists and a student team from the IIT-Madras have developed the first of a family of six industry-standard microprocessors. The initial batch of 300 chips, named RISECREEK and produced under Project Shakti, have been fabricated free at Intel's facility at Oregon, U.S., to run the Linux operating system.

Key Points:

- At a frequency of 350 MHz, RISECREEK can meet the demands of defence and strategic equipment such as NAVIC (Indian Regional Navigation Satellite) and Internet of Things (IoT) electronics.

- What makes RISECREEK different is the open source nature of the designs.

- The plan includes a family of six types of microprocessors. The first to be ready is the C class, RISECREEK. The E class of microprocessors that can be used in smart cards, IoT devices, fan/motor controls, etc, is almost ready and the I class, which can be used for mobile phones, desktops and mobile phones is soon to follow.

- The design for the S class which can be used for enterprise class servers is underway, and the H

class, which will be used for building High Performance computers with a massive parallel processing capacity.

- The H Class is part of the next phase of development, which the team calls the Para-SHAKTI (parallel SHAKTI) project. Para-SHAKTI will make microprocessors for indigenous high-performance computers with over 32 SHAKTI cores.

About Project Shakti:

- The Shakti plan started in 2014 as an IIT-M initiative. Last year, the Union Ministry of Electronics and Information Technology funded a part of the project.

- The Shakti project is not aimed at only building processors. It also aims to build high speed interconnects for servers and supercomputers based on variants of the Rapid iIO and GenZ standards. These are key to build large clusters of processors to get Petaflop and Exaflop level supercomputers.

> **TOPIC: GS III, SCIENCE AND TECHNOLOGY- DEVELOPMENTS AND THEIR APPLICATIONS**

37. Thermal Battery

Source: Indian Express

Why in news:

India has become home to the world's first-ever thermal battery plant. The thermal battery facility, inaugurated in Andhra Pradesh, will be owned by Bharat Energy Storage Technology Private Limited (BEST).

- This plant aims to create a new energy storage form that is expected to have commercial applications, while also maintaining a low carbon footprint, and being less dependent on external factors like weather.

- It could provide energy solutions for electrical grids, transport and telecom services.

Thermal battery technology:

How it works?

- Conventional battery technology is based on the system of charging/discharging cycles that are driven by electricity. For example, the Lithium-ion battery, a staple of many electronic devices, consists of electric charges being transferred from electrodes. Energy is derived from this battery, when lithium atoms turn into lithium ions ($Li+$), and get stored when this reaction reverses. Therefore, Li-ion batteries work on the basis of electrical energy.

- Thermal batteries, on the other hand, use thermal energy to operate, i.e., the energy created by temperature differences. Therefore, the energy transfer in thermal batteries helps store heat when heat travels from one part of the battery setup to the other. For that to happen, a thermal battery consists of two parts: a cool zone known as sink, and a hot source called source. Both these sides consist of compounds known as phase-changing materials (PCMs), which can change their state of matter on the basis of a physical/chemical reaction.

Applications with power grids:

- The possible integration of thermal batteries with power grids is one of its main applications. This will help boost industrial demand and provide substantial support to public transport and telecom grids.

- Thermal batteries can function as long as heat is available for them to operate, which can be helpful in power transmission to remote areas. India's rising regional energy requirements can be resolved using this technology.

- The telecom industry will also benefit as thermal batteries will help boost signal strength and network connectivity, which will thereby increase internet and smartphone penetration.

Use in e-vehicles Technology:

- The thermal batteries can be used in electric vehicles as well. India's automobile industry has an ambitious target of going completely electric by 2030. Car manufacturers can use thermal battery technology to manufacture vehicle with clean energy at minimal maintenance cost and set up charging stations for the same.

Advantages over other Technologies:

- Although solar power is considered the most reliable source of energy yet it has pitfalls. The energy generation is not possible after sunset and high rainfall areas, which brings in the need for a robust energy storage infrastructure. Thus, the coming of thermal battery is a landmark development in the field of technology and environmental protection.

- Existing energy storage technologies depend on Lithium-based batteries, which are limited by life cycles, making it a very expensive proposition with replacements needed every six to seven years. They are also low on energy density and need a high footprint.

- Furthermore, Lithium's sensitivity to extreme temperatures requires the energy storage systems to be placed in conditioned temperatures, requiring about eight to ten per cent energy storage for the cause.

VII. PRELIMS/MISCELLANEOUS

38. Kailasa Temple

Source: The Hindu

- The construction of the temple began during the rule of the Rashtrakuta king, Dantidurga (735-757 AD).

- Major work on the temple was done by King Dantidurga's successor, Krishna I (757-773 AD), although work continued under many successive kings for more than a century.

- It is located in Ellora, Maharashtra.

Facts:

- There are 34 caves in Ellora, numbered according to their age.

- Temples 1 to 12 in the Southern side are the 12 Buddhist caves.

- Temples 13 to 29 are the 17 Hindu caves.

- Temples 30 – 34 are the 5 Jain caves.

- The Kailasanatha temple (Cave 16) is one of the 34 cave temples and monasteries known collectively as the Ellora Caves.

Features:

- The carving of the temple started from the top of the mountain but a pit was later dug around the temple on the sloping side of the hill

- Apart from the gopura, the main temple has a sabha griha (hall), vestibules and a Nandi mandap which leads to the garba griha (sanctum) with the Shiv linga, all of which are profusely carved and with Dravidian shikharas (towers). A bridge connects the Nandi mandap to the gopuram.

Cultural Link:

- The temple houses several intricately carved panels, depicting scenes from the Ramayana, the Mahabharata and the adventures of Krishna.

- There are five detached shrines in the temple premises; three of these are dedicated to the river goddesses: Ganga, Yamuna and Saraswati.

39. Indian-origin mathematician wins Fields Medal

Why in news:

- Indian-origin Akshay Venkatesh, 36, of the Institute for Advanced Study in Princeton have been awarded with the Fields Medal at the International Congress of Mathematicians in Rio de Janeiro.

- At Every four years the subject's youngest and brightest are honored with the Fields Medal, often described as the Nobel Prize of mathematics.

40. NRC update: Incentives for those left out

- On July 31, a Supreme Court Bench had ordered the government to frame, in consultation with State NRC Coordinator a "fair" SoP to deal with the claims and objections of those who did not find their names in the draft NRC.

- Applicants left out of the National Register of Citizens (NRC) may be given a personal hearing under a fresh Standard Operating Procedure (SoP) being devised by the Home Ministry.

- The Registrar-General of India (RGI) and the Home Ministry are exploring several options to provide adequate opportunity to 40 lakh of the 3.9 crore applicants whose names were not included in the final NRC draft published on July 30.

- The SoP would ensure that filing claims and objections was a fair and credible process. The circle officers or block development officers would be asked to give personal hearings to applicants even after they had exhausted the option of filing "claims and objections". The SoP will also go into the aspects of disposal of claims and objections.

41. Implementation of E-Pashudhan Haat Scheme

Why in news:

- Government has launched e-Pashu Haat portal for connecting breeders and farmers of indigenous breeds. Through the portal farmers can obtain information on location of quality indigenous germplasm in the form live animals, semen doses and embryos.

- This portal is playing crucial role in development and conservation of indigenous breeds.

42. WHO lauds India's Commitment to Accelerated Sanitation Coverage

Why in news:

- A World Health Organisation (WHO) report estimated that the Swachh Bharat Mission Gramin (SBM-G) will result in preventing more than three lakh deaths due to diarrhoea and protein-energy malnutrition between 2014-October 2019.

Details:

- The report is titled "The progress report on potential health impact from increased sanitation coverage through the SBM-G"

- The research was conducted by the WHO for the Ministry of Drinking Water and Sanitation.

Findings of the report:

- It said that India's rural sanitation coverage escalated to 89.07% till August 2, 2018.

- Under the SBM-G, 19 States and Union Territories were declared Open Defecation Free (ODF) and 7.9 crore toilets were built, 421 districts and more than 4.9 lakh villages were declared ODF.

- The WHO study showed that before the initiation of SBM-G, unsafe sanitation caused 199 million cases of diarrhoea annually and that by 2019, the initiative aims to achieve 100% sanitation coverage.

43. Bonalu

- Bonalu is an annual festival of Telangana celebrated in Twin Cities Hyderabad, Secunderabad and other parts of Telangana.

- The word "Bonam" is a contraction of the word "Bhojanam", a Sanskrit loanword which means a meal or a feast in Telugu.

- The week-long celebration, also called Ashadam Jatara, is a thanksgiving to goddess Mahakali for fulfilling prayers.

- "Tottelu" is also a part of the festival bonalu, its one the offerings to the goddess it is artifact of Telangana people which is made of the bamboo sticks and colorful transparent papers it looks like a temple doom which is called as Tottelu.

44. Indo - Thailand Joint Exercise Maitree 2018

Why in news:

- Exercise Maitree is a joint military exercise between Indian Army and Royal Thai Army which is to be conducted from 06 to 19 August 2018 in Thailand.

- The exercise will emphasize to hone the tactical and technical skills in joint counter insurgency and counter terrorist operations in rural and urban scenario under UN mandate.

- Due emphasis has been laid on increasing interoperability between forces from both countries which is crucial for success of any joint operation.

- Exercise Maitree will contribute immensely in developing mutual understanding and bonhomie between the two armies in order to counter terrorism.

45. Jatayu Earth Center

- The Jatayu sculpture at the Jatayu Earth Center in Kollam, Kerala, is said to be world's largest bird sculpture.

- It is built on a massive rock called Jatayupara.

46. Uakitite

- It is a new mineral has been discovered in a meteorite in Eastern Russia.

- The mineral was found in the Uakit meteorite, which was named for the tiny town in eastern Russia where it was found.

- The Uakit iron meteorite was found in 2016 and found to primarily be composed of Kamacite, a nickel-rich variety of iron found in meteorites

- While 98 percent of the meteorite is composed of kamacite, very trace amounts contain the mineral uakitite.

- Scientists don't know a lot more about this mysterious space rock as they were unable to obtain all physical and optical properties of the mineral because of its small size.

47. MOPAD: SBI launches Unified Payment Terminal

- India's largest bank State Bank of India (SBI) has launched its Multi Option Payment Acceptance Device (MOPAD) for digital payments convenience of merchants and consumers.

- MOPAD also aims at providing convenience to merchants by eliminating multiple machines that they keep in order to facilitate transaction from different sources. It will allow customers to make payments through cards, Bharat QR, UPI and SBI Buddy (e-wallet) on single Point–of–Sale (PoS) terminal.