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I. POLITY & GOVERNANCE

TOPIC: GS II, GOVERNMENT POLICIES AND INTERVENTIONS

1. NITI Aayog and CII Launch Partnership on SDGs

Source: PIB

Why in news:

- Recently NITI Aayog and CII Partnership on SDGs has been launched at New Delhi on 8 August 2018.
- Sustainable development needs three things: energy, water and circular economy/green industry. India aims to achieve its clean energy goals till 2022.
- Given our population, the only way to grow and develop sustainably is to use technology to leapfrog: use new and renewable energy and push for R&D and innovation to generate demand for electric vehicles, hydrogen cars, etc. and to find local solutions for 7 the population around the world.'
- The UN Resident Coordinator, said that 'conditions in India are favourable due to its nature, history and demography, to come up with solutions towards a sustainable and circular economy for the world to emulate.
- CII-NITI Aayog have entered into a three-year partnership which focuses on specific activities that seeks to develop: 1. Vision and Action Agenda for businesses and industries to contribute to SDGs; 2. Annual Status Reports; 3. Sector-specific Best Practise Documents.
- CII launched the report—Indian Solutions for the World to Achieve SDGs which dives into each of the SDGs, targets and business implications thereof. The report cites examples that illustrate how companies have incorporated the SDGs framework into their business strategy and gone about achieving them.

TOPIC: GS II, VARIOUS STATUTORY AND REGULATORY BODIES

2. Issues with various Commissions in India

Source: The Hindu

- In India there are plenty of national commissions and they all supposed to be parastatal watchdogs to oversee the implementation of human rights and civil liberties.
- As of today there are at least eight such quasi-autonomous bodies.

Issues associated with these bodies:

- The composition and appointment mechanism for various national commissions widely differ.
- The NCM and NCW chairs and members are to be appointed by the government in its unrestricted discretion. While aspirants for the chair and membership of NCM should only be persons of "eminence, ability and integrity". NCW chair is simply to be one "committed to the cause of women" — only its members have to be "persons of ability, integrity and understanding who have experience in law or legislation, trade unionism, management of an industry or organisation committed to increasing employment potential of women, women's voluntary organisations (including women activists) administration, economic development, health, education or social welfare".
- The record of successive governments in adhering to the prescribed touchstones is disappointing.
- Under these circumstances, the situation of citizens' human rights and civil liberties has been moving from bad to worse
- So the need of the hour is to develop a commission pertaining to various issues centralized by a governing body which monitors for a well-governed stature.

TOPIC: GS II, GOVERNMENT POLICIES AND INTERVENTION

3. SC alters Lodha's BCCI proposals

Source: The Hindu

Why in news:

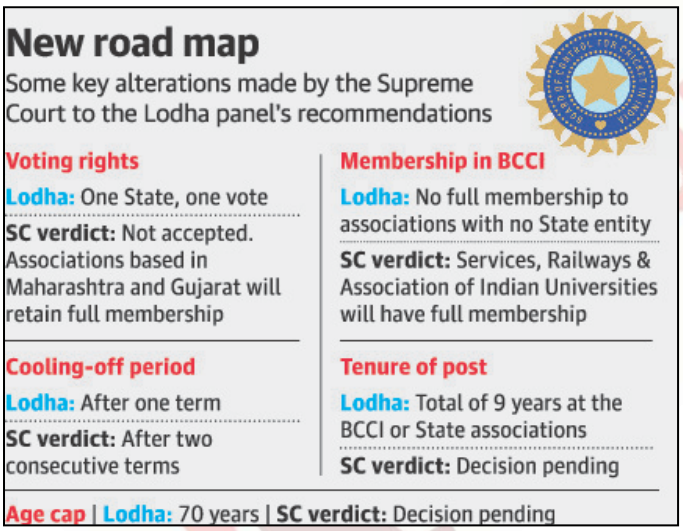
- The Supreme Court has finalised the new Constitution for the Board of Control for Cricket in India (BCCI), rejecting the 'one State-one vote' recommendation of the Justice R.M. Lodha Committee and altering the cooling-off period for cricket bosses.
- The committee was appointed by the SC in 2014 to make recommendations to the BCCI in order to prevent frauds and conflict of interest in cricket administration.

New Constitution:

- The SC disagreed with Lodha panel that cricket could prosper only if the BCCI was represented by every State and Union Territory and restored full BCCI memberships to three associations in Gujarat and Maharashtra each namely Maharashtra, Mumbai and Vidarbha cricket associations in Maharashtra and the Baroda and Saurashtra cricket associations in Gujarat. It opined that to

utilise territoriality as a basis of exclusion is problematic because it ignores history and the contributions made by such associations to the development of cricket and its popularity.

- The court gave Services Sports Control Board, the Railways and the Association of Universities full membership in the BCCI.
- The court supported the recommendation of the Lodha panel that cricket administrators should undergo a cooling-off period before contesting elections to BCCI or State associations. Cooling-off must be accepted as a means to prevent a few individuals from regarding the administration of cricket as a personal turf.
- However the court struck a balance. Justice Lodha had suggested that the cooling-off period should kick in for a cricket administrator after his every tenure of three years in office. Instead, the court said an administrator needs to cool-off only after two consecutive terms of six years in office, whether in BCCI or a State association or a combination of both.



TOPIC: GS II, ASPECTS OF GOVERNANCE

4. Article 35A and ongoing issues

Source: The Hindu

Why in news:

The Supreme Court of India heads towards a decision on the validity of Article 35A of the Constitution of India. The Union government has left it to the court to finally interpret the status article 35A.

What is Article 35 A?

- It is a constitutional provision that allows the Jammu-Kashmir assembly to define permanent residents of the state. It was brought in by a presidential order in 1954 in order to safeguard the rights and guarantee the unique identity of the people of Jammu-Kashmir.
- According to it a Permanent Resident is defined as a person who was a state subject on May 14, 1954, or who has been residing in the state for a period of 10 years, and has "lawfully acquired immovable property in the state".

Background:

- Initially Kashmir was conceived as a State with "special status".
- The Instrument of Accession signed by Maharaja Hari Singh in 1947 brought the State into the Union of India gave it control only over Kashmir's defence, foreign policy and communications so it enjoyed limited sovereignty under the protection of India. It is because of this weak India-Kashmir constitutional link that the State had its own Constituent Assembly and flag. The Supreme Court did not have jurisdiction over key issues in the State and Srinagar tried to send its own trade commissioners to foreign countries.
- India's international commitment to hold a plebiscite in the State to decide its eventual fate further complicated the issue.
- With the coming into effect of the Indian Constitution in January 1950, India's powers over Jammu and Kashmir were defined more clearly through a Presidential Order (a predecessor of 1954 Order) due to which, for the first time, India's fundamental rights and directive principles were applicable to Jammu and Kashmir and the State's finances were integrated with India and the order also extended the Indian Supreme Court's jurisdiction over certain aspects of Jammu and Kashmir.

Issues:

- The constitutional validity of the Article is challenged as it goes against the "very spirit of oneness of India" as it creates a "class within a class of Indian citizens". And it discriminates against a woman's right to property.
- By striking down Article 35A, it would allow people from outside Jammu-Kashmir to settle in the state and acquire land and property, and the right to vote, thus altering the demography of the Muslim-majority state.
- The state's political parties stand their demand against abrogating the article.

Way forward:

- And regarding the removal of article 35, it must be an expression of the will of the people, through a political process which includes the people of Jammu and Kashmir in the discussion.

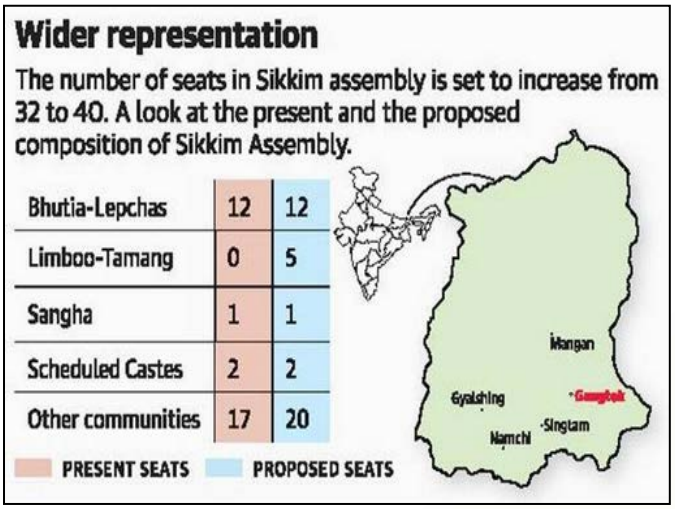
TOPIC: GS II, ASPECTS OF GOVERNANCE

5. Assembly seats for Sikkim increased

Source: The Hindu

Why in news:

The Home Ministry has moved the Union Cabinet to increase the number of seats in the Sikkim Assembly from 32 to 40.The Cabinet Committee on Political Affairs, headed by Prime Minister will soon decide on the proposal.



Background:

- A petition was moved in the Supreme Court that Limboos and Tamangs were not adequately represented in the Assembly, and the court in 2016 directed the Home Ministry to take action. There are 90,000 Limboo-Tamangs.
- By the Delimitation Act, 2002, the number of seats in an Assembly can be readjusted only on the basis of the first census after 2026.
- The Second Schedule to the Representation of People Act, 1950 and Section 5A of the Representation of People Act, 1951 have been amended to change the Assembly strength.
- Sikkim has 12 seats reserved for Bhutias-Lepchas as a sequel to a political agreement in 1973 between the Government of India, the former Chogyal (King) of Sikkim and political parties.
- The seats are being increased to accommodate the Limboo and Tamang communities, notified as Scheduled Tribes in 2003.Of the eight new seats, five will be reserved for them. If approved, it will be the first expansion of the Assembly since Sikkim merged with India in 1975.
- Limbu are Kirati people indigenous and native to their homeland himalayas, hills, mountainous and plains regions.
- Tamang are Tibeto-Burman ethnic group.

Bhutias:

- They are people of Tibetan ancestry, who speak Lhopo or Sikkimese, a Tibetan dialect.
- The Bhutias are spread out over Nepal, Bhutan, and in northern West Bengal, especially in the towns of Kalimpong and Darjeeling.
- The Bhutias as recognized as Scheduled Tribes in the states of Sikkim, West Bengal and Tripura.
- Lepchas are among the indigenous peoples of Sikkim.

Tendong Lho Rumfaat (Prayer of the Tendong Mountain)

- It is a festival of the Lepcha people of eastern Nepal and north-east India. The festival occurs usually in the month of August.
- As per the Lepcha mythology, it was believed that the entire tribe was saved from 40 days and 40 nights of great deluge caused by continuous rain which drowned the entire Mayel Lyang, the modern day Sikkim.
- During the festivities, people make a model of the Mountain in facade of their homes and worship it.
- It is exclusively made of nine stones and the people dance and sing wearing mask to get the blessings of the almighty.

TOPIC: GS II, ASPECTS OF GOVERNANCE

6. Aadhaar as a Secure Machinery

Source: The Hindu

Why in news:

- Unique Identification Authority of India (UIDAI) is planning a user outreach to sensitise people to the dos and don'ts of sharing their biometric identifier. It intends to draw a parallel between the Aadhaar number and other personal information such as PAN (Permanent Account Number) and bank account number to caution users against placing such details in the public domain, particularly on digital platforms.
- The FAQ will address nearly six queries on the issue, which has been hotly debated currently when the chairman of TRAI published his adhaar number and some users claimed to have accessed his bank account number and e-mail id.
- Cautioning people against publicising their Aadhaar number, the UIDAI, however, says it can be given freely for proving one's identity and for transaction purposes, just like one gives bank account or other details for a specific purpose.
- It stated that mere knowledge of Aadhaar cannot harm an individual or be misused for

impersonation as it is fortified with additional security layers such as biometrics and one-time password authentication.

- It has also outlined the responsibilities of banks and other user organisations in carrying out the required checks in this regard.

Background:

- Aadhaar is a 12-digit unique identity number that can be obtained by residents of India, based on their biometric and demographic data.
- The data is collected by the Unique Identification Authority of India (UIDAI), a statutory authority established in January 2009 by the government of India, under the jurisdiction of the Ministry of Electronics and Information Technology, following the provisions of the Aadhaar (Targeted Delivery of Financial and other Subsidies, benefits and services) Act, 2016.
- Aadhaar is the world's largest biometric ID system.
- World Bank Chief Economist Paul Romer described Aadhaar as "the most sophisticated ID programme in the world".
- Considered a proof of residence and not a proof of citizenship, Aadhaar does not itself grant any rights to domicile in India. In June 2017 the Home Ministry clarified that Aadhaar is not a valid identification document for Indians travelling to Nepal and Bhutan.

TOPIC: GS II, ASPECTS OF GOVERNANCE

7. SC worried over children living in jails

Source: The Hindu

Why in news:

- Supreme court has directed the government to form a panel headed by a former apex court judge to study the problems of mothers and children living inside prisons in the wake of a report showing huge lack of space for women inmates in the women prisons which are not modelled to house women inmates, especially those with minor children staying with them.
- The committee would also look into what reforms could be introduced within the prison walls.
- It ordered training manuals to be circulated to the Directors-General of Prisons and Secretaries of Prison Department in each State government/ Union Territory and also to the training institutes
- It also advised the Centre that criminals sentenced to imprisonment for six months or a year should be allocated social service duties rather than be sent to further choke the already overflowing prisons.

TOPIC: GS II, ASPECTS OF GOVERNANCE

8. Disclosure of panels on Sexual Harassment becomes mandatory

Source: The Hindu

Why in news:

In order to ensure better implementation of the law against sexual harassment at workplace, the Centre has made it mandatory for companies to disclose whether they have constituted an internal complaints committee (ICC) to probe such allegations.

Background:

- In the wake of long-standing demand from Ministry for Women and Child Development the Corporate Affairs ministry has amended the Companies (Accounts) Rules, 2014, governed by the Companies Act, 2013, mandating the disclosure. This has It adds a clause to a rule on matters that should be part of the Board's report.
- The new clause says that the report will have to contain a statement that the Company has complied with provisions relating to the constitution of Internal Complaints Committee under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.
- It is a major step towards making the workplace safe for the women in the private sector.

Sexual Harassment at Workplace Act:

- Under this act it is mandatory for any organisation with 10 or more employees to constitute an ICC. An employer who doesn't do so could face a fine of up to Rs.50,000.
- An ICC should consist of a presiding officer, who should be a woman employee at a senior level in the same organisation, at least two employees preferably committed to the cause of women, and a member from an NGO or a person familiar with issues relating to sexual harassment.
- The committee would have powers similar to those of a civil court and would have to complete its inquiry within 90 days.

TOPIC: GS II, ASPECTS OF GOVERNANCE

9. Schemes for North-Eastern Region

Source: PIB

The Ministry of Development of North Eastern Region (DoNER) has made the following schemes for the development of North-Eastern region during the last three years:-

1. North East Special Infrastructure Development Scheme (NESIDS)

- It is to be implemented by the Ministry of Development of North Eastern Region (DoNER).
- It is a 100% Central Sector Scheme to be implemented till March 2020.
- Aims at building physical infrastructure relating to connectivity, power, water supply enhancing tourism and social Infrastructure relating to education and health sectors in North Eastern States.

2. Schemes of North Eastern Council (NEC) and North East Road Sector Development Scheme (NERSDS
3. North East Venture Fund (NEVF)
   - North Eastern Development Finance Corporation Ltd. (NEDFi) under the Ministry of Development of North Eastern Region (DoNER) has set up the North East Venture Fund (NEVF) for North East Region.
   - It aims at promoting start ups in north east region.
4. Science & Technology Interventions in the North East Region (STINER)

   It aims to bring relevant technologies developed by the academic, scientific and research institutions to the artisans and farmers especially women.

TOPIC: GS II, ASPECTS OF GOVERNANCE

10. Amendments in Tariff Policy

Source: PIB

Why in news:

- The Central Government in the proposed draft amendments to the National tariff policy, 2016 has included the provision for imposition of penalties on the Distribution companies for power cuts other than force majeure conditions or technical faults by Appropriate Commission.
- The proposed Amendments in Tariff Policy include amendments in provisions related to Generation, Transmission and Distribution of electricity. The focus is to make 24x7 uninterrupted power supply to all consumers, improve efficiency in the operation of distribution business, addressing certain constraints faced in implementing change-in-law provisions, issues in open access, compliance and related aspects, Tariff design related issues including simplification of tariff categories and rationalization of retail tariff.

Key proposed amendments:

- Consumer should not be asked to pay the price of inefficiencies of the Discom, therefore AT&C Losses in excess of 15% shall not be passed on to the consumers but shall be borne by Discom.
- 24 hours supply of adequate and uninterrupted power may be ensured to all categories of consumers by March, 2019 or earlier. In case of power cuts other than technical faults an appropriate penalty, as determined by the SERC shall be levied on the Distribution Company and credited to the account of the respective consumers.
- Standards of performance for Distribution Licensee to include continuity and reliability of supply, quality of supply, timeframe for disposing application for connection/ disconnection/enhancement or reduction of connected load and complaints of disruption in supply.
- Subsidy to any category of consumers would be required to be given through Direct Benefit Transfer.
- Appropriate Commission would ensure that cross-subsidies are reduced and the tariff for all consumer categories are brought within ±20% of the average cost of supply effective from 1st April 2019 or earlier.
- Simplification of tariff categories and rationalization of retail tariff.
- Suitable provisions for promotion of Electric Mobility- No license would be required for setting up any charging stations for Electric Vehicles.

II. SOCIAL JUSTICE

TOPIC: GS II, WELFARE SCHEMES FOR VULNERABLE SECTIONS

11. Anti-trafficking Bill and its relevance

Source: The Hindu

Why in news:

Recently a comprehensive Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill, 2018 has been passed to tackle the menace of trafficking in India which is continuously increasing despite having the 2013 law (Criminal Law (Amendment) Act.

Advantages:

- The Bill ties together the approaches of prevention, rescue and rehabilitation to create a robust policy framework against trafficking.
- It enforces for search and seizure; rescue and medical examination of persons; and safety, care and protection of persons rescued. Punishment for omission of duty is welcomed too, if it does not omit the government officials, including the police, from its ambit.

- It places at its core the rights and welfare of victims of human trafficking.
- There are aggravated forms of trafficking which have been introduced, such as trafficking for the purpose of begging, or bearing a child, or for the purpose of marriage or under the pretext of marriage by administering narcotic drugs, hormones, or chemical substances for the purposes of early sexual maturity, and so on. Under the Bill, prosecution under these offences will be made timely and efficient by special public prosecutors.
- The Bill provides protection to witnesses. It also seeks to maintain the confidentiality of victims by recording their statements through video conferencing and by in camera proceedings. It states that there will be time-bound trials and repatriation of victims.
- A rehabilitation fund has been introduced for the first time. This will be used for the physical, psychological and social well-being of victims. The Bill seeks to build the capacity of victims by providing capital, infrastructure, education and skill development to empower them to access justice and to prevent further trafficking.
- Trafficking is an organized crime. In order to break the organized nexus, at the national and international levels, the Bill proposes attachment and forfeiture of property and to remit the proceeds of crime in the rehabilitation fund. It will also freeze bank accounts of those whose funds have been utilized to facilitate trafficking. By doing this, the Bill handicaps the organized trafficking networks.
- A database of every crime under this Act is maintained in the database of the bureau. Such systematic surveillance of offenders will not only help prevent trafficking but preempt it.

Disadvantages:

- Most clauses have little to do with trafficking and more do to with imposing surveillance as it is vague and over-broad.
- The mere word "traffic" is not justified in true sense. 'Traffic' means to trade something. It's a transaction, and refers to the act of buying and selling. It is pejorative when the transaction involves prohibited goods such as narcotics or firearms or if it involves people. Article 23 of the Constitution prohibits "traffic in human beings and forced labor". This means that human beings cannot be bought and sold.
- They criminalize acts that are already punishable under other laws. For example – "trafficking for the purpose of begging which is already a criminal offence under anti-begging laws.
- The Bill also states that "whoever solicits or publicizes electronically, taking or distributing obscene photographs, videos, providing materials, soliciting, guiding tourists, using agents or any other form which may lead to the trafficking of a person shall be punished with rigorous imprisonment."-it's a contradiction because this means that no trafficking needs to take place; a remote possibility is sufficient to prosecute persons and shut down websites. Similar provisions of the Information Technology Act, 2000, were struck down by the Supreme Court for being vague and over-broad.
- The Bill is silent on many types of trafficking, such as trafficking for supply chains, commercial surrogacy, clinical trials, human organ trade, intergenerational trafficking, orphanage tourism and sex tourism. It also doesn't incorporate the long-pending demands for 'demand reduction' and 'non-institutionalized rehabilitation'.
- The Bill dissipate because of its interplay with existing laws, which have not been overruled or repealed. For example the anti-trafficking Bill relies on Section 370 of the IPC to define and establish that an offence of trafficking of persons has taken place. The prosecution will have to first prove the subsections of Section 370, which are that the victim was transported, recruited, harboured, received or transferred for the purposes of exploiting her/him by using force, abduction, deception, or by abuse of power. Only then will the provisions of the Bill take effect.
- The protection homes and rehabilitation homes for victims have not been clearly defined in the age when the government victim care institutes are discredited.
- Also the term 'victim' appears several times in the Bill but is rarely defined. Through Section 59, the Bill overrides a better definition of 'victim' given in the Code of Criminal Procedure. Going by the established practice, a victim is one who is 'rescued' by the raiding police. So, those rescued by NGOs, parents, friends, and so on are not victims.
- Hence Instead of strengthening the existing anti-trafficking laws, the Bill calls for another law, one that is uncalled-for and sloppily drafted. The Bill clashes with existing laws, which will lead to confusion.
- The Bill doesn't state the concept of 'rehabilitation'. Section 30 (5) in a proper manner as it makes the rehabilitation fund available to the bureaucracy for prevention, protection and prosecution.

- No new courts or judges are exclusively dedicated to trafficking cases on priority. This move will only undo the gains of the past many decades of evolving more sensitive and specialised courts such as Immoral Traffic (Prevention) Act courts, Protection of Children from Sexual Offences courts, and family courts.

TOPIC: GS II, HEALTH

12. New breastfeeding policy comes into effect in Rajasthan

Source: The Hindu

Why in news:

- A new breastfeeding policy has come into effect in Rajasthan for encouraging the rural communities to promote exclusive breastfeeding along with its early initiation.
- The new policy stipulates initiation of breastfeeding within an hour inside the labour room, supporting mothers to ensure the continued exclusive breastfeeding and counselling till two years of the child's age.

Background:

- The initiative has been taken as part of the National Nutrition Mission-2022 on conclusion of the World Breastfeeding Week observed between August 1 and 7.
- The early initiation of breastfeeding in the State was only at 28.4%, while only 58% infants were able to exclusively breastfeed during the first six months of their lives.
- Infant mortality is one of India's persistent health concerns. It is a well-established fact that breastfeeding reduces child mortality and has health benefits that extend well into adulthood.
- This year, the World Health Organisation and UNICEF jointly issued a new 10-point guidance to further raise awareness on the criticality of early breastfeeding. It was also noted that breastfeeding for the first two years would save the lives of more than 8,20,000 children annually.
- Their report recommends that mothers start breastfeeding in the first hour after birth.

Benefits:

- Colostrum (the first secretion from the mammary glands after giving birth) is said to be high in antibodies, reduces the risk of death from hypothermia, helps in epithelial recovery and protects children from infectious diseases.
- Early initiation also has numerous immunological and nutritional benefits that have been found to reduce mortality in babies under the age of 1.
- Infants who are breastfed have a reduced risk of diarrhoea, pneumonia and other infectious diseases in comparison to infants who drink breast milk substitutes.
- Human milk is a rich source of immune and non-immune components which resist infection and also accelerate intestinal maturation in a child.

Challenges:

- Despite the significant progress made in improving child survival at the national level, infant mortality still remains high in some States in India as out of multiple factors that lead to infant mortality, breastfeeding rates too play a key role.
- It is estimated that only one out three children are breastfed exclusively within six months, which results in a higher risk of death due to various illnesses (diarrhoea and respiratory infection).
- Some factors that may delay early breastfeeding are caesarean delivery, use of anaesthesia, fatigue and the use of pre-lacteal feeding with formula milk.
- Our hospitals need an improvement in policies and maternity-care practices.
- The first 24 hours of an infant's life is considered to be a crucial period. If the child is not breastfed, it is more likely to suffer from various diseases such as asthma, diabetes, childhood leukaemia, obesity and allergies.

Way forward:

- Improving India's breastfeeding rates requires a multi-pronged approach with its focus on educating women and health providers.
- The challenges of limited public knowledge, social norms that trend toward formula feeding, lack of access to lactation services and education have to be addressed through consistent awareness initiatives at every level.
- The better the breastfeeding practice, the higher the protection.
- Even partial breastfeeding has a modest protective effect when compared to no breastfeeding.
- Every mother-to-be should undergo proper training on breastfeeding.
- In this, doctors and medical professionals play an important role.
- Only mothers suffering from severe illnesses or other issues affecting early lactation should go in for bottle feeding or milk substitutes.

Government's strategy:

- The government is making efforts to promote and organize programmes focused on maternal and infant health. Their aim is to educate health-care providers and young parents on the importance of human breast milk.
- The Health Ministry is also planning to increase the network of human milk banks across the country.

TOPIC: GS II, WELFARE OF THE VULNERABLE SECTIONS

13. Delhi HC strikes down the beggar act

Source: The Hindu

Why in news:

- Recently, the Delhi High Court struck the Begging Act down as inconsistent with the Constitution. It held that the Begging Act violated Article 14 (equality before law) and Article 21 (right to life and personal liberty) of the Constitution.
- It marks a crucial step towards dismantling the vicious legacies of colonialism and shows the transformative nature our constitution.
- It is now the task of the Legislative Assembly and the government to replace the punitive structure of the (now defunct) Begging Act with a new set of measures that genuinely focuses on the rehabilitation and integration of the most vulnerable and marginalised members of our society.
- It was one of those colonial laws that dehumanised communities and ways of life.

Provisions of the Begging Act:

- The Begging Act was passed in 1959 by the State of Bombay, and has continued to exist in as many as 20 States and two Union Territories. It criminalises begging and gives the police the power to arrest individuals without a warrant.
- It gives magistrates the power to commit them to a "certified institution" for up to three years on the commission of the first "offence", and up to 10 years upon the second "offence". These certified institutions had absolute power over detainees, including the power of punishment, and the power to exact "manual work" and disobeying the rules of the institution can land an individual in jail.
- It strips the people of their privacy and dignity by compelling them to allow themselves to be fingerprinted.
- It authorised the detention of people "dependent" upon the "beggar" and the separation of children over the age of five.
- Poverty was the result of the state's inability or unwillingness to discharge these obligations. Therefore, the state could not turn around and criminalise the most visible and public manifestation of its own failures —and indeed, penalise people who were doing nothing more than communicating the reality of their situation to the public.

TOPIC: GS II, HEALTH

14. Scrub Typhus as key encephalitis cause in Eastern U.P.

Source: The Hindu

Why in news:

From a study of three years' data in Uttar Pradesh, it is inferred that Scrub typhus is the key cause of encephalitis in U.P.

Importance of the findings:

- Acute encephalitis syndrome is a major health problem in the state of UP, India, because of the multiple aetiologies involved, lack of standardized case definitions and availability of limited resources.
- This finding is important because the mite-borne disease scrub typhus can be treated easily if detected early. Especially because, treatable bacterial diseases such as leptospirosis and scrub typhus are grossly underestimated because of the low index of suspicion and limited diagnostic facilities, in India.
- It was found that the mites carry Orientia tsutsugumashi, the bacterium which causes scrub typhus.
- The study helped in explaining why scrub typhus incidence peaks during monsoon.

Scrub Typhus:

- It is caused by a multicellular parasite, Orientia tsutsugumashi.
- It is transmitted by some species of mites which are found in areas of heavy scrub vegetation. It can also be transmitted by lice, ticks and fleas.
- Symptoms generally include fever, headache, muscle pain, gastrointestinal symptoms and myalgia, with or without rash.
- It is endemic to a part of the world known as the tsutsugamushi triangle. This extends from northern Japan and far-eastern Russia in the north, to the territories around the Solomon Sea into northern Australia in the south, and to Pakistan and Afghanistan in the west.

- In India, it was first reported in Assam during World War II (1944–1945) across the India–Myanmar border.

Acute Encephalitis Syndrome (AES):

- Acute encephalitis syndrome (AES) is characterized by an acute onset of fever and clinical neurological manifestation that includes mental confusion, disorientation, delirium, or coma.
- The disease has been reported to be associated with several complications including limb paralysis, seizures, impaired consciousness or even death.
- In non-fatal cases, AES may often lead to severe permanent physical, cognitive, emotional, behavioural and social difficulties in affected individuals
- Assam, is recognized as an endemic zone for acute encephalitis syndrome (AES), especially that caused by Japanese encephalitis virus (JEV).

III. ECONOMY

TOPIC: GS III, INFRASTRUCTURE-ENERGY

15. National Energy Storage Mission

Source: PIB

Why in news?

- In February 2018, an Expert Committee under the chairpersonship of Secretary, Ministry of New and Renewable Energy, with representatives from relevant Ministries, industry associations, research institutions and experts was constituted by the Ministry of New & Renewable Energy to propose draft for setting up National Energy Storage Mission (NESM) for India.
- The Expert Committee referred has proposed a draft NESM with objective to strive for leadership in energy storage sector by creating an enabling policy and regulatory framework that encourages manufacturing, deployment, innovation and further cost reduction.

Key areas for energy storage application include:

(i). integrating renewable energy with distribution and transmission grids;

(ii). setting Rural micro grids with diversified loads or stand-alone systems; and

(iii). developing Storage component of electric mobility plans.

Highlights of the draft National Energy Storage Mission (NESM):

- The draft expects to kick-start grid-connected energy storage in India, set up a regulatory framework and encourage indigenous manufacture of batteries.
- The draft sets a "realistic target" of 15-20 gigawatt hours (GWh) of grid-connected storage within the next five years. Power grids do not currently use storage options that would help in smoothly integrating renewable energy sources.
- The mission will focus on seven verticals: indigenous manufacturing; an assessment of technology and cost trends; a policy and regulatory framework; financing, business models and market creation; research and development; standards and testing; and grid planning for energy storage.

Significance and the need for energy storage:

- Energy Storage is one of the most crucial & critical components of India's energy infrastructure strategy and also for supporting India's sustained thrust to renewables.
- Renewable energy sources now make up almost one-fifth of India's total installed power capacity. However, as power grids increase their share of solar and wind energy, the problem remains that the peak supply of renewable sources does not always meet peak demand. For instance, solar energy generation may be at its peak at noon, but unless stored, it will not be available when needed to light up homes at night. Moreover, renewable sources are inherently intermittent: there are days when the wind doesn't blow or the sky is cloudy.

IV. ENVIRONMENT

TOPIC: GS III, CONSERVATION, ENVIRONMENT POLLUTION AND DEGRADATION

16. FSSAI launched RUCO (Repurpose Used Cooking Oil)

Source: The Hindu

Why the news:

The Food Safety and Standards Authority of India (FSSAI) on Friday launched RUCO (Repurpose Used Cooking Oil), an initiative that will enable collection and conversion of used cooking oil to bio-diesel.

- FSSAI may also look at introducing regulations to ensure that companies that use large quantities of cooking oil hand it over to registered collecting agencies to convert it into biofuel.
- Under this initiative, 64 companies at 101 locations have been identified to enable collection of used cooking oil. For instance: McDonald's has already started converting used cooking oil to biodiesel from 100 outlets in Mumbai and Pune.

- FSSAI wants businesses using more than 100 litres of oil for frying, to maintain a stock register and ensure that UCO is handed over to only registered collecting agencies.

Background:

- The initiative has been launched nearly a month after the food safety regulator notified standards for used cooking oil. According to FSSAI regulations, the maximum permissible limits for Total Polar Compounds (TPC) have been set at 25%, beyond which the cooking oil is unsafe for consumption.

What is Total Polar Compounds (TPC)?

- In many countries, TPC is used to measure the quality of oil. The level of TPC increases every time oil is re-heated. Some of the studies show that TPC accumulation in oil without food is slower than that in oil frying with food.
- Higher level of TPC in cooking oil leads to health issues like hypertension, atherosclerosis, Alzheimer's disease and liver disease. One of the studies also noticed high levels of glucose, creatinine and cholesterol with declined levels of protein and albumin in cooking oil.

Significance of RUCO initiative:

As of now, used cooking oil is either not discarded at all or is disposed in an environmentally hazardous manner and sometimes even finds its way to smaller restaurants, dhaabas and street vendors.

- The regulator believes India has the potential to recover 220 crore litres of used cooking oil for the production of biodiesel by 2022 through a co-ordinated action.
- This ecosystem will serve as a word of caution to businesses and consumers to step back and stop usage of the cooking oil after repeated frying.
- While biodiesel produced from used cooking oil is currently very small, but a robust ecosystem for conversion and collection is rapidly growing in India and will soon reach a sizable scale.

Way forward:

- FSSAI is also working in partnership with Biodiesel Association of India and the food industry to ensure effective compliance of used cooking oil regulations. It is also going to publish guidance documents, tips for consumers and posters in this regard. It is also conducting several awareness campaigns through its e-channels.
- FSSAI has additionally launched a micro-site to monitor the progress of the collection and conversion of used cooking oil into biodiesel. Sixty-Four companies have been identified thus far at 101 locations across the length and breadth of the nation to enable collection of UCO.

TOPIC: GS III, CONSERVATION

17. 12 August: World Elephant Day

Source: The Hindu

Why in news:

The World Elephant Day is observed every year on August 12 to create awareness of urgent plight of African and Asian elephants. It also seeks to share knowledge and positive solutions for better care and management of captive and wild elephants.

- In India, cultural event Gaj Mahotsav was organised by Wildlife Trust of India (WTI) and Ministry of Environment, Forests and Climate Change (MoEFCC) on this occasion of this day. It was aimed to sensitise people urgent plight of elephants through different art forms including an exhibition of elephant themed paintings and installations.

Background:

- On August 12, 2012, the inaugural World Elephant Day was launched to bring attention to the urgent plight of Asian and African elephants. The elephant is loved, revered and respected by people and cultures around the world, yet we balance on the brink of seeing the last of this magnificent creature.
- This day highlights need for better protection for wild elephants, improving enforcement policies to prevent the illegal poaching and trade of ivory, conserving elephant habitats, better treatment for captive elephants etc. This day is now supported annually by more than 65 wildlife organizations and many individual around the world.

About Elephants:

- African elephants are listed as Vulnerable and Asian elephants as Endangered on the IUCN Red List of threatened species.
- The current population estimates are about 400,000 for African elephants and 40,000 for Asian elephants.
- Some of the major threats faced by both African and Asian elephants are escalation of habitat loss, poaching, human-elephant conflict and mistreatment in captivity etc.
- Indian elephant (Elephas maximus indicus) is one of three recognized subspecies of Asian elephant and native to mainland Asia is national heritage animal of India (declared in 2011).

TOPIC: GS III, MAJOR CROPS CROPPING PATTERNS, DIFFERENT TYPES OF IRRIGATION AND IRRIGATION SYSTEMS STORAGE, E-TECHNOLOGY

18. Zero Budget Natural Farming

Source: PIB

Why in news:

Indian Council of Agricultural Research (ICAR) under Network Project on Organic Farming (NPOF) and All India Coordinated Research Projects (AICRP) on Integrated Farming Systems, has initiated an experiment on "Evaluation of zero budget farming practices in basmati rice-wheat system" at Modipuram (Uttar Pradesh), Ludhiana (Punjab), Pantnagar (Uttarakhand) and Kurukshetra (Haryana) from rabi 2017 to study the zero budget farming practices on productivity, economics and soil health including soil organic carbon and soil fertility.

What is Zero Budget Natural Farming (ZBNF)?

- Zero Budget Natural Farming, as the name implies, is a method of farming where the cost of growing and harvesting plants is zero. This means that farmers need not purchase fertilizers and pesticides in order to ensure the healthy growth of crops. It is, basically, a natural farming technique that uses biological pesticides instead of chemical-based fertilizers. Farmers use earthworms, cow dung, urine, plants, human excreta and such biological fertilizers for crop protection. It reduces farmers' investment. It also protects the soil from degradation.
- Steps taken by Government to promote organic farming:
  - Government of India has been promoting organic farming in the country through the dedicated schemes of Paramparagat Krishi Vikas Yojana (PKVY) since 2015-16 and also through Rashtriya Krishi Vikas Yojana (RKVY).
  - In the revised guidelines of PKVY scheme during the year 2018, various organic farming models like Natural Farming, Rishi Farming, Vedic Farming, Cow Farming, Homa Farming, Zero Budget Natural Farming (ZBNF) etc. have been included wherein flexibility is given to states to adopt any model of Organic Farming including ZBNF depending on farmer's choice.
  - Under the RKVY scheme, organic farming/ natural farming project components are considered by the respective State Level Sanctioning Committee (SLSC) according to their priority/ choice.

Significance:

- Farming that has been promoted under PKVY and other schemes aims at chemical free farming.
- Bio-pesticides, bio-fertilizers, on farm / off farm natural inputs are used by farmers that results in reduction of input cost compared to inorganic cultivation which also contributes to savings.

TOPIC: GS III, MAJOR CROPS, CROPPING PATTERNS IN VARIOUS PARTS OF THE COUNTRY, E-TECHNOLOGY IN THE AID OF FARMERS

19. Recently Developed Races of Silk Worm Seed

Source: PIB

Why in news:

Central Silk Board (CSB) has notified recently developed races of silkworm seed of mulberry and Vanya silk for increasing the productivity of cocoons and to increase the income of the farmers engaged in sericulture.

Some facts:

- Tropical Tasar Silkworm (BDR-10) race developed by the CSB have 21% more productivity than the traditional Daba breed. Farmers can get upto 52 kg cocoons per 100 disease free layings (dfls).
- This silkworm breed will help the tribal farmers of Jharkhand, Chhattisgarh, Odisha, West Bengal, Andhra Pradesh, Maharashtra, Madhya Pradesh, Bihar, Telangana and Uttar Pradesh.
- Multivoltine x Bivoltine Mulberry hybrid (PM x FC2) race of silkworm can produce 60 kg per 100 Dfls and the race is better than earlier race PM x CSR. Due to high quality silk and significant egg recovery, this race is suitable for the farmers of Karnataka, Andhra Pradesh, Tamil Nadu, Telangana and Maharastra.
- Eri Silkworm (C2) race has been found better than local breed and it can produce 247 numbers of Eri cocoons per 100 Dfls. This race is suitable for the farmers in Arunachal Pradesh, Assam, Bihar, Maharastra, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Sikkim, Uttar Pradesh, Uttarakhand and West Bengal.

Significance:

- Silk worm breeds for specific agro-climatic condition are essential for increasing the productivity of cocoons. The recently notified silkworm races will improve the income of the farmers by its enhanced productivity and quality.

About Central Silk Board:

- Central Silk Board (CSB) is a statutory body established in 1948 by an Act of Parliament.
- It is under the Ministry of Textiles.
- It is engaged in applied research developing new breeds of races of silkworm seed and conducts extensive field trial before commercial use in the field.

V. INTERNATIONAL RELATIONS

TOPIC: GS II, IMPACT OF POLICIES OF OTHER COUNTRIES ON INDIA

20. US warns world against doing business with Iran

Source: The Hindu

Why in news:

- The U.S. has imposed the hardest sanctions ever on Iran and warned countries against doing business with Iran.
- Within hours of the sanctions taking effect, German automaker Daimler said it was halting its business activities in Iran.

Background:

- The Joint Comprehensive Plan of Action, commonly known as the Iran deal, was signed on July 14, 2015 between Iran, the U.S., China, France, Russia, the U.K., Germany and the European Union under which Iran agreed not to build any more heavy water facilities, eliminate its stockpile or medium-enriched uranium, cut its stockpile of low-enriched uranium, and reduce the number of its gas centrifuges. Other nuclear facilities in Iran would have to be converted into non-nuclear facilities.
- In return, Iran would recover assets worth $100 billion frozen in overseas banks, and sanctions on the country by the U.S., the U.N., and the E.U. were lifted.
- However US recently decided to unilaterally pull the U.S. out of the Iran nuclear deal and to re-imposing nuclear sanctions against that country in May 2018.

Impacts of USA's Decision:

- Iran's markets were actually relatively buoyant, with the rial strengthening by 20% since the government relaxed foreign exchange rules and allowed unlimited, tax-free gold and currency imports. But the second tranche on November 5 covering Iran's vital oil sector could be far more damaging, even if several key customers such as China, India and Turkey have refused to significantly cut their purchases.

TOPIC: GS II, INDIA AND ITS NEIGHBOURHOOD RELATIONS

21. Indian aid to SAARC nations falls

Sources: The Hindu

Why in news:

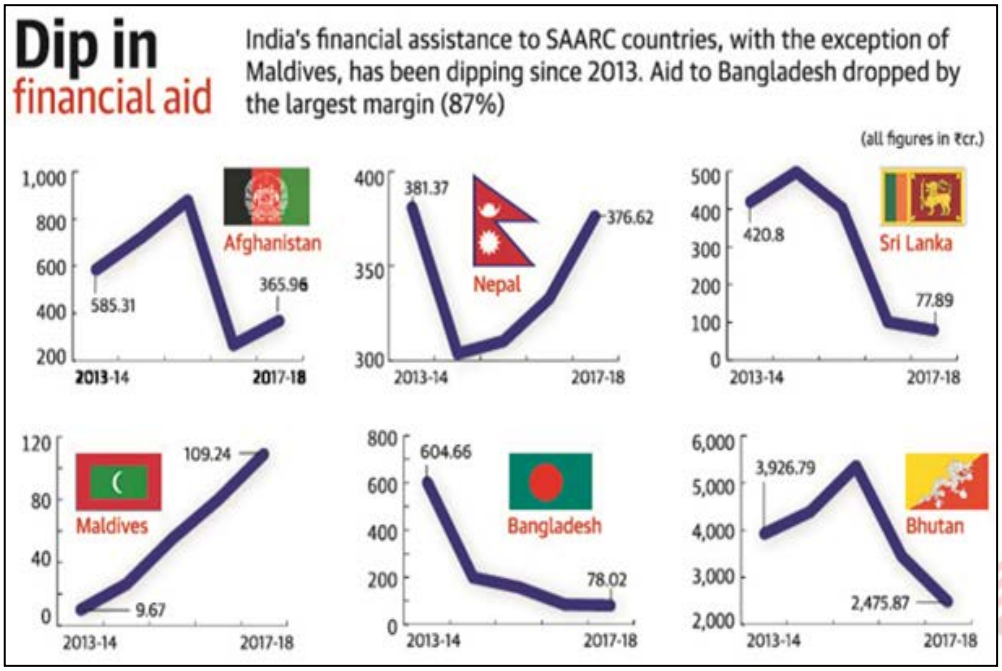
- India's financial assistance to SAARC neighbours declined considerably in the past five years.
- This has been revealed in the figures presented in the Lok Sabha on the matter of status of India's projects in the countries in its neighbourhood.

Status:

- The Grant Assistance (GA) actually fell from Rs.5,928.6 crore for 2013-14 to Rs.3,483.6 crore for 2017-18 for Afghanistan, Bangladesh, Bhutan, the Maldives, Nepal and Sri Lanka combined.
- The drop for most SAARC countries was most steep in 2014 when the government launched its tenure with the "Neighbourhood First" slogan. However, despite the dip in bilateral ties, Indian assistance has been consistently increasing year on year since 2013 to Maldives.

Reasons:

- The GA figures did not include the lines of credit extended to Nepal, Sri Lanka and Bangladesh. These lines of credit are given at the minimal interest rates of 1-2% compared with loans offered by China at 6-7%.
- Many projects had been completed in the neighborhood, and there were fewer projects started in the period since 2014.
- In Afghanistan, India has shifted to work on small development projects (SDPs) rather than the ambitious highways, dams and big building projects.
- In Bangladesh, the main grant for land acquisition for the Akhaura-Agartala rail "last link" project has now been completed.
- In Bhutan, which has always received the largest share of Indian assistance, the assistance required for major hydroelectric power plants like Punatsanghchu 1 and 2 and Mangdechu has been disbursed 75-90% while Indian assistance to Bhutan's 11th five-year plan (2013-2017) has been handed over nearly fully.
- In Sri Lanka, the decline was explained by delays in land acquisition for 15,000 homes to be built by India in the plantation areas, though the work on 45,000 homes in the north and east of the island has been completed.



- India is still completing three main projects in Maldives: a police academy, a coastal radar project, and the refit of MNDF ship Huravee. An offer to build a new defence ministry building is pending, which explains why the Maldives alone is the exception to declining trend in neighbourhood aid.

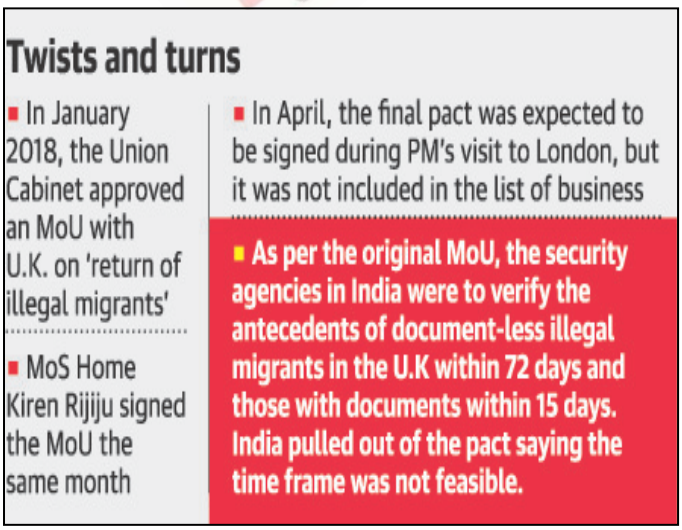
TOPIC: GS II, BILATERAL RELATION

22. India rejects U.K. proposal on DNA tests for 'illegal migrants'

Source: The Hindu

Why in news:

India has rejected a proposal by the UK to use DNA sampling to establish the nationality of illegal migrants living there citing privacy issues. Earlier, the U.K. authorities had suggested that the nationality of document-less illegal migrants suspected to be Indians could be established by matching DNA samples of their family members living there.



Background:

- Earlier, during her visit to India, the British Prime Minister said the U.K. would consider an improved visa deal if at the same time both the countries can work on returning Indians with no right to remain in the U.K.
- Earlier, India refused to sign the final pact during the visit of Indian Prime Minister to U.K. in April.
- As per the original MoU, security agencies in India were to verify the antecedents of illegal migrants without documents in the U.K. within 72 days and those with documents within 15 days. If no report was given within the stipulated time frame, the illegal migrant would be deported automatically.
- The agreement was put on indefinite hold after Indian National Security Adviser conveyed that the 15-day limit was unworkable.
- According to the British government's estimates, there are around 1,00,000 Indians overstaying their visa in the U.K. However, India has contested this and said that as per their estimate, the number will not be more than 2,000.

TOPIC: GS II, INDIA AND ITS NEIGHBOURHOOD RELATIONS

23. Indo Myanmar Relations and Act East Policy

Source: Indian Express

Why in news:

- Recently India and Myanmar operationalised a Land Border Crossing Agreement that had been in the pipeline for long. Now, any Myanmarese or Indian national with a valid passport and visa can now cross over without requiring special permission.
- The two crossing points are at Moreh in Manipur, opposite Tamu in Myanmar's Sagaing division, and Zokhawthar in Mizoram, opposite Rhikhawdar in Myanmar's Chin state.
- Earlier, these crossing points were meant only for people of the border villages on either side — for family visits, buying and selling in the border markets and, from the Myanmar side, to consult doctors or get diagnostic tests done.

- Border passes valid for up to three days were issued for these visits, and travel was restricted to 16 km from the crossing point. Passes were issued to other citizens, but they could not stay overnight across the border. Indian citizens could travel to Tamu for a day visit and to travel further on either side, cross-border visitors needed special permits.
- Under the new regime, local residents will continue to have the right to cross over with a border pass within 16 km. For all others with a passport and visa, the crossing points will be open routinely to travel anywhere in the other country.
- However this does not mean that one can now drive across to Myanmar with their own vehicle until the two countries sign a Motor Vehicles Agreement. The Land Border Agreement is 50% of the work done, the other 50% is the Motor Vehicles Agreement.

Motor Vehicles Agreement:

- The Motor Vehicles Agreement, first proposed in 2015 envisages to include Thailand as India is building a "Trilateral Highway" connecting the three countries as a key element of its "Act East" policy. The Trilateral Highway is aimed at increasing trade, tourism and people-to-people contact with ASEAN, through Myanmar and Thailand.
- India has a 1,643-km border with Myanmar in four Northeastern states. Myanmarese Buddhist pilgrims, medical tourists, and students travel to India. With the opening of the border crossing, the 110-km journey from Imphal to Moreh will take about three hours, and from Tamu to Mandalay another four. A pilgrim from Mandalay need not go to Yangon anymore, and instead could head to Imphal by road and then fly to Bodhgaya.

Where does the work on the Trilateral Highway stand?

- First proposed in 2002 by India, the Trilateral Highway was intended to connect India to Thailand, and beyond to Cambodia, Laos through Myanmar, and promote trade, business, tourism and people-to-people contacts, and spur the economic development of the Northeast.
- It was scheduled to open in 2016, but is now expected to be completed only by 2021. The road goes from Moreh/Tamu, and across Myanmar to Mae Sot in Thailand, covering a distance of nearly 2,000 km.
- A section of the Trilateral Highway — the Tamu-Kyigone-Kalewa (TKK) Road, also known as Friendship Road, constructed and upgraded by the Border Roads Organisation and handed over to the government of Myanmar in 2009 — India is repairing 69 bridges.
- It is also constructing/upgrading the Kalewa-Yagyi section of the highway in Myanmar.
- "Both these projects pass through challenging geographical terrain that prolong the process of project design and selection of executing agencies.

Kaladan Project:

- Besides the Trilateral Highway, India is also executing the ambitious $484 million Kaladan Mutlimodal Transport Project, to link the Indian mainland to the Northeastern states via Myanmar.
- Under this project, loaded freight ships will leave Kolkata port and dock at Sittwe, a port in Myanmar's Rakhine province. There, the goods will be loaded on barges that will transport them upstream on the Kaladan river to Paletwa. From Paletwa to Zorinpui on the Mizoram border, and further inland into the Northeast, the goods will be transported by road.

- While the dredging of the Kaladan, the construction of the unloading and loading terminals at Sittwe port and Paletwa have been completed, and seven barges readied and handed over to the Myanmar government, the road remains a work in progress.

The 109-km road construction project from Paletwa to Zorinpui began only in April this year, and given the challenging.

VI. SCIENCE & TECHNOLOGY

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

24. Axis Bank introduces Iris Authentication over micro ATMs for Aadhaar-based transactions

Source: Business Standard

Axis Bank has become the first bank in the country to introduce Iris Scan Authentication feature for Aadhaar-based transactions through its micro ATM tablets.

Key points:

- Micro ATMs completely eliminate the requirement of debit cards, passwords, PINs, user IDs, etc. and empower consumers to avail banking services using only their Aadhaar numbers and biometrics (iris scan/fingerprint scan).
- The Axis Bank has deployed highly secure iris powered micro ATM tablets which are STQC certified & UIDAI compliant registered devices with completely integrated iris sensors.
- The process of transaction through iris scan is very simple. Customer need to select the desired service (funds transfer, cash withdrawal) and feed-in their Aadhaar numbers in the micro ATM. Next, they will have to choose 'IRIS' as the desired mode of authentication. Verification will be done by scanning the eyes of the customers through the tablet's iris sensor camera in 3-5 seconds. The transaction will be completed after the biometric details are verified from the UIDAI database.
- Iris scan technology is completely contactless and provides up to 98.2% authentication success rate (as per study conducted by the International Centre for Biometric Research) and offers an edge over other prevalent biometric modes.

Significance:

- This service, which requires a customer to scan their iris on a tablet, will boost the bank's financial inclusion efforts by making Aadhaar authentication process hassle-free and offering easier access to digital banking for consumers especially in the rural parts of the country.

GS PAPER 3: SCIENCE AND TECHNOLOGY- ACHIEVEMENTS OF INDIANS IN SCIENCE & TECHNOLOGY

25. Gaganyaan Mission to take Indian Astronaut to Space by 2022

Sources: The Hindu, Indian Express

Why in news:

- India will send a manned flight into space by 2022, Prime Minister Narendra Modi announced while addressing the nation on the 72nd Independence Day from the Red Fort in New Delhi.
- An Indian astronaut, be it a man or a woman, will go on a space odyssey by 2022 on board 'Gaganyaan'.

What is a manned mission?

- A manned spaceflight, also known as Human space flight, is space travel with a crew aboard the spacecraft. A manned mission into space can include a spacecraft operated directly by a human crew or could also be partly controlled from a ground station on Earth.

Some facts:

- The first human spaceflight was launched by the Soviet Union (now Russia) on April 12, 1961 as part of their Vostok programme. Through this programme, cosmonaut Yuri Gagarin became the first human to journey into outer space. Within a month, on May 5, 1961, the United States launched their first manned mission, Mercury-Redstone 3, with Astronaut Alan Shepard on board.
- Over the years, many countries have been sending their astronauts and cosmonauts into space using Russia's, America's or China's vehicles. After the launch of the International Space Station in 1998, humans have been continuously present in space.
- However, the United States was forced to end its space shuttle program in 2011. Therefore, currently only Russia and China maintain human spaceflight capability with the Soyuz program and Shenzhou program respectively. Since the retirement of the space shuttle, the U.S. has been relying on Russia's Soyuz program.
- Until now only three countries namely, Russia, U.S., China have launched their own manned spacecraft and if India manages to launch its own manned spaceflight in 2022, we would be the fourth country to do so.

Indian Human Space Flight Programme:

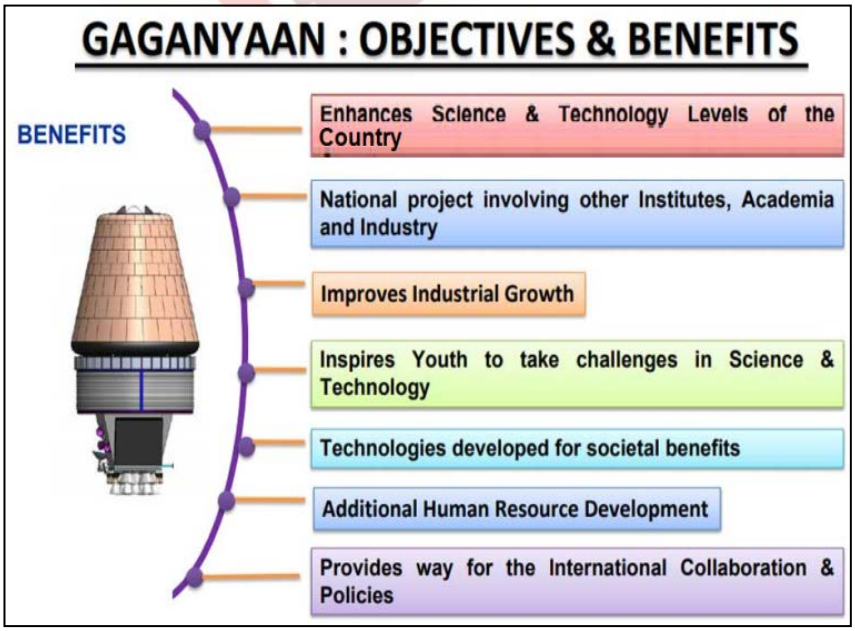
- India plans to build a crew vehicle that can accommodate 2 or 3 astronauts and human rate its GLSV Mk-III launcher. In 2004, ISRO prepared a document with the road-map for developing technologies relevant to human spaceflight.
- Initially, a manned space flight was proposed before 2017, at a budget of Rs 12.4 billion ($242 million), using a fully autonomous orbital vehicle carrying two or three crew members to 400-km (250 miles) low Earth orbit for up to 7 days and back. The planning commission approved the mission and the government sanctioned Rs 95 crore to study all aspects of the manned space mission.
- ISRO has initiated pre-project Research and Development activities focusing on critical technologies for Human Space Flight Program.

Technological Challenges:

- Three major areas that ISRO needs to master are, environmental control and life support (ECLS) system, crew escape system and flight suite and it's currently working on them, under pre-project studies for which the Government sanctioned Rs 145 crore.

Recent progress:

- In what appears to be a preparation for the Gaganyaan mission, ISRO last month conduced its first 'pad abort' test that was successful.
- The 'pad abort' test or Crew Escape System is an emergency escape measure that helps pull the crew away from the launch vehicle when a mission has to be aborted. The test was conducted at the Satish Dhawan Space Centre, Sriharikota.
- The Pad Abort Test demonstrated the safe recovery of the crew module in case of any exigency at the launch pad.



Way ahead:

- A manned space mission is very different from all other missions that ISRO has so far completed. In terms of complexity and ambition, even the missions to the Moon (Chandrayaan) and Mars (Mangalyaan) are nowhere in comparison.
- For a manned mission, the key distinguishing capabilities that ISRO has had to develop include the ability to bring the spacecraft back to Earth after flight, and to build a spacecraft in which astronauts can live in Earth-like conditions in space.

GS PAPER 3: SCIENCE AND TECHNOLOGY- ACHIEVEMENTS OF INDIANS IN SCIENCE & TECHNOLOGY

26. Aerogel: Scientists develop Super-insulating Transparent Gel

Source: The Indian Express

Why in news:

Scientists have developed a transparent heat-resistant gel using beer waste.

About Aerogel:

- Aerogel looks like a flattened plastic contact lens.
- Aerogels are at least 90 per cent gas by weight, but their defining feature is air. Their thin films are made up of crisscrossing patterns of solid material that trap air inside billions of tiny pores, similar to the bubbles in bubble wrap. It is that trapping capacity that makes them such good insulators.
- It is also cheaper to produce because it comes from beer waste.
- It is a thin, flexible film that is roughly 100 times lighter than glass.

Potential Applications:

- It may one day be used to build greenhouse-like habitats for human colonised on Mars.
- It could also be used on buildings on Earth to help make huge savings on energy costs.
- It could harvest sunlight through that thermally-insulating material and store the energy inside, protecting us from those big oscillations in temperature that we have on Mars or on the moon.
- It is being enabling for so many other applications, including smart clothes, for insulating cars and protecting firefighters.

TOPIC: GS III, SCIENCE AND TECHNOLOGY - DEVELOPMENTS

27. Giant Metrewave Radio Telescope (GMRT)

Source: The Hindu

Why in news:

- Astronomers have used an Indian telescope to discover the most distant radio galaxy ever known, located at a distance of 12 billion light-years. The galaxy, from a time when the universe was only 7% of its current age was found using the Giant Metrewave Radio Telescope (GMRT) in Pune.
- The distance to this galaxy was determined using the Gemini North telescope in Hawaii and the Large Binocular Telescope in Arizona.

About radio galaxies:

- Radio galaxies are very rare objects in the universe. They are colossal galaxies with a supermassive black hole in their centre that actively accretes gas and dust from its surroundings.
- This activity initiates the launch of high-energy jet streams, which are capable of accelerating charged particles around the supermassive black hole to almost the speed of light.
- The discovery of such galaxies at extremely large distances is important for our understanding of the formation and evolution of galaxies.

About GMRT:

- The Giant Metrewave Radio Telescope (GMRT), located near Pune in India, is an array of thirty fully steerable parabolic radio telescopes of 45 metre diameter, observing at metre wavelengths.
- It is operated by the National Centre for Radio Astrophysics, a part of the Tata Institute of Fundamental Research, Mumbai.
- At the time it was built, it was the world's largest interferometric array offering a baseline of up to 25 kilometres (16 mi).
- One of the aims for the telescope during its development was to search for the highly redshifted 21-cm line radiation from primordial neutral hydrogen clouds in order to determine the epoch of galaxy formation in the universe.

TOPIC: GS III, BIOTECHNOLOGY

28. India's first genetic bank for wildlife conservation inaugurated in Hyderabad

Source: Times of India

Why the news:

- In a step that would further the cause of conservation of endangered and protected animals, India got its first scientific and most modern national wildlife genetic resource bank.
- The bank was dedicated to the nation by union minister of science and technology at the Laboratory for the Conservation of Endangered Species (LaCONES), a research wing of the Centre for Cellular and Molecular Biology (CCMB) at Hyderabad.

About the National wildlife genetic resource bank:

- The state-of-the-art bank is equipped with sophisticated equipment to preserve the genetic resources that could be utilised to virtually resurrect an animal species in case it goes extinct.
- The bank contains genetic resources of about 250 wildlife species.
- The bank will store genetic material of Indian species.
- It will also help in protecting India's biodiversity and environment.

About Laboratory for the Conservation of Endangered Species (LaCONES):

- It is India's only research facility engaged in conservation and preservation of wildlife and its resources. It was established in 1998 with the help of Central Zoo Authority of India, CSIR and the government of Andhra Pradesh.
- LaCONES has helped the Mouse Deer Conservation Breeding Centre at Nehru Zoological Park to increase the population of mouse deer in Telangana forests. Amrabad forest, for instance, ran out of mouse deer and through the efforts of LaCONES, the animal is now reintroduced in Amrabad Tiger Reserve. At one stage there were only six mouse deer left in the country. Today the mouse deer population in India has increased to about 300.
- Earlier, LaCONES has developed universal DNA based marker for identification of wild animals from parts and remains. It has a DNA banking of more than 250 species of mammals, birds and reptiles.

TOPIC: GS III, AWARENESS IN SPACE

29. Parker Solar Probe

Sources: Indian Express, NASA

Why in news:

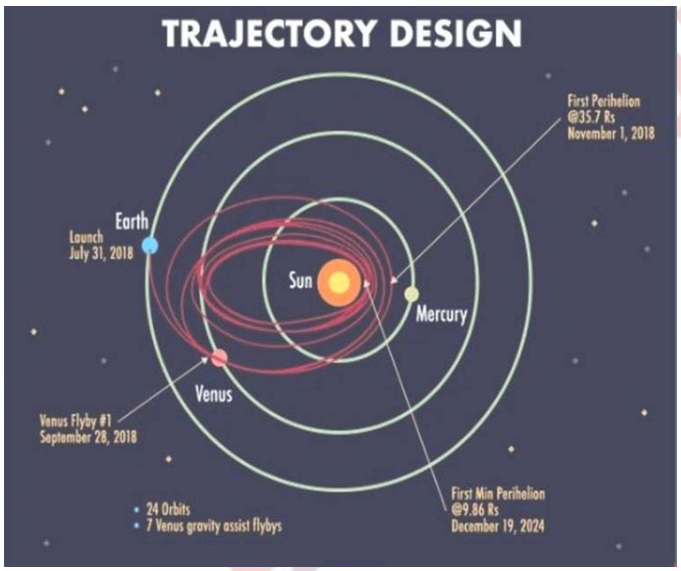
NASA launched the Parker Solar Probe – the space agency's first mission to the sun – that will explore the sun's atmosphere and its outermost atmosphere, the corona.

About Parker Probe:

- The probe, about the size of a car, will fly through the Sun's atmosphere and will come as close as 3.8 million miles to the star's surface, well within

the orbit of Mercury and more than seven times closer than any spacecraft has come before (Earth's average distance to the Sun is 93 million miles). The Parker probe is expected to make 24 loops of the Sun over seven years.

- During the journey, the spacecraft will fly by Venus at speeds of 4,30,000 mph, the equivalent of flying from New York to Tokyo in one minute. In order to reach an orbit around the sun, the Parker Solar Probe will take seven flybys of Venus that will essentially give a gravity assist, shrinking its orbit over the course of nearly seven years.
- The specially shielded Parker Solar Probe will have to endure temperatures up to 2,500 degrees Fahrenheit (1,370 degrees Celsius) and solar radiation intensities 475 times higher than we're used to here on Earth.
    - The spacecraft is named after 91-year old solar physicist Eugene Parker, 91, who was the first scientist to describe solar wind in 1958.
    - The probe was launched from Cape Canaveral, Florida, on a United Launch Alliance Delta IV Heavy rocket, one of the world's most powerful rockets.



Main objectives of Parker Solar Probe:

- The mission, which hopes to uncover the Sun's mysteries, will accumulate a gamut of data about its structure and magnetic and electric fields, as well as the energetic particles cruising near and away from Earth's star. These events can affect satellites and astronauts as well as the Earth — including power grids and radiation exposure on airline flights.
- The information will help researchers and scientists solve two longstanding mysteries:
    - How the solar wind is accelerated.
    - Why the sun's outer atmosphere, or corona, is so much hotter than the solar surface, NASA officials have said?
    - Explore mechanisms that accelerate and transport energy particles?

What part of this mission will 'touch' the Sun?

- The Solar Probe Cup, dubbed 'the bravest little instrument', is a sensor that will extend beyond the heat shield to "scoop up samples" of the Sun's atmosphere. The cup will glow red when the probe makes its closest approach to the sun, sampling the solar wind and effectively touching the sun.

Mission to end in 2025

- The mission is scheduled to end in June 2025. The first data download from the Parker Solar Probe is expected in early December after the probe reaches its first close approach of the sun in November. "Eventually, the spacecraft will run out of propellant. In 10 to 20 years, a carbon disk will be floating around the sun in orbit, and it will be around until the end of the solar system," CNN quoted Andy Driesman, Parker Solar Probe project manager at the Johns Hopkins Applied Physics Lab, as saying.

Why do we study corona?

- The corona is hotter than the surface of the sun. The corona gives rise to the solar wind, a continuous flow of charged particles that permeates the solar system. Unpredictable solar winds cause disturbances in our planet's magnetic field and can play havoc with communications technology on Earth. Nasa hopes the findings will enable scientists to forecast changes in Earth's space environment.

Why do we study the Sun and the solar wind?

- The Sun is the only star we can study up close. By studying this star we live with, we learn more about stars throughout the universe.
- The Sun is a source of light and heat for life on Earth. The more we know about it, the more we can understand how life on Earth developed.
- The Sun also affects Earth in less familiar ways. It is the source of the solar wind; a flow of ionized gases from the Sun that streams past Earth at speeds of more than 500 km per second (a million miles per hour).
- Disturbances in the solar wind shake Earth's magnetic field and pump energy into the radiation belts, part of a set of changes in near-Earth space known as space weather.
- Space weather can change the orbits of satellites, shorten their lifetimes, or interfere with onboard electronics. The more we learn about what causes

space weather – and how to predict it – the more we can protect the satellites we depend on.

- The solar wind also fills up much of the solar system, dominating the space environment far past Earth. As we send spacecraft and astronauts further and further from home, we must understand this space environment just as early seafarers needed to understand the ocean.

Europe's Solar Probe in works:

- The European Space Agency is also building a similar solar probe. Solar Orbiter, or SolO as it's sometimes known, is undergoing final assembly and testing in the UK. It is expected to launch in 2020, arriving at its closest position to the Sun towards the end of Parker's planned seven years of operations. SolO will go to within 42 million km of the Sun's surface. That's further away than Parker but it will still need an impressive shield.

TOPIC: GS III, DISASTER MANAGEMENT

30. Four additional battalions of National Disaster Response Force

Source: The Hindu

Why in news:

Union Cabinet has given approval for raising of four additional battalions of National Disaster Response Force (NDRF) to strengthen the India's disaster response set up. These battalions will be placed in Jammu and Kashmir, Himachal Pradesh, Uttarakhand and Delhi National Capital Region based on their disaster vulnerability profile.

Key facts:

- The objective of raising four additional battalions is to reduce response time keeping in view vast geographic area of the country. These four battalions will initially be raised as two battalions in Indo-Tibetan Border Police (ITBP) and one battalion each in Assam Rifles (ARs) and Border Security Force (BSF). Later these four battalions will be converted into NDRF battalions.

National Disaster Response Force (NDRF):

- NDRF is India's elite disaster mitigation combat force established in 2006 under The Disaster Management Act, 2005. It is headquartered in New Delhi. It functions under Union Ministry of Home Affairs. It works under National Disaster Management Authority (NDMA) which lays down policies, plans and guidelines for disaster management.
- At present there are 12 battalions in NDRF which are deployed strategically across country to provide immediate response.

Role and Mandate of NDRF:

- Specialized response during disasters.
- Proactive deployment during impending disaster situations.
- Acquire and continually upgrade its own training and skills.
- Liaison, Reconnaissance, Rehearsals and Mock Drills.
- Impart basic and operational level training to State Response Forces (Police, Civil Defence and Home Guards).
- Community Capacity Building Programme.
- Organize Public Awareness Campaigns.

VII. PRELIMS/MISCELLANEOUS

31. Unnat Bharat Programme 2.0

Source: PIB

Why in news:

- The Government has recently launched Unnat Bharat Abhiyan 2.0, which is the phase-2 of scheme. It covers 750 Higher Educational Institutes.
- Unnat Bharat Abhiyan aims to link the Higher Education Institutions with atleast (5) villages, so that these institutions can contribute to the economic and social betterment of these village communities using their knowledge base.
- Unnat Bharat Abhiyan is inspired by the vision of transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an Inclusive India.
- It aims to create a virtuous cycle between the society and an inclusive university system, with the latter providing knowledge base; practices for emerging livelihoods and to upgrade the capabilities of both the public and private sectors.

Objective:

- To engage the faculty and students of Higher Educational Institutions in understanding rural realities.
- Identify and select existing innovative technologies, enable customization of technologies, or devise implementation methods for innovative solutions, as required by people.
- To allow Higher Educational Institutions to contribute to devising systems for smooth implementation of various Government Programs.

32. Global Innovation Index, GII- 2018 launched in India

Source: PIB

Why in news:

- Global Innovation Index 2018 has been launched in New Delhi on Wednesday 8th August 2018.
- India's rank on the Global Innovation Index (GII) has improved from 60 in 2017 to 57 in 2018. India has been consistently climbing the GII ranking for the past two years indicates that the culture of spending on research and development is growing in India.

Need to improve:

- Transform India's Innovation Ecosystem by formulating a New Innovation Policy to attract R&D investment into cutting edge technologies and build appropriate infrastructure and institutions.
- Tap Global hotspots of Innovation in latest technologies like AI, Blockchain and Robotics etc.
- Connect Tinkering labs in schools with start-ups, business and high end educational institutions.
- Target efficient, productive and outcome driven R&D in the Government Sector.

33. India rejects report of World Economic Forum

Source: The Hindu

Why in news:

- The Union Environment Ministry has dismissed as arbitrary and unscientific a 2017 World Economic Forum-ranking that placed India at the bottom in terms of environment performance.
- The report ranked India 177 out of 180 countries on the Environmental Performance Index 2018.
- India slipped 36 points from 141 in the 2016 report, prepared by Yale and Columbia Universities along with the WEF.
- India's low ranking — 177 among 180 countries — was linked to poor performance in the environment health policy and deaths due to air pollution categories.

34. Eradication of Polio

Source: PIB

- India has been certified Polio free by the Regional Polio Certification Commission on the 27th March 2014.
- Last case of Wild poliovirus in the country was reported on 13th January, 2011 from Howrah, West Bengal and no wild poliovirus case have been reported thereafter from any State/UT of the country.
- To maintain the polio-free status of the country, government is taking following measures:
  - Population immunity against polio is being maintained by observing polio campaigns every year. In the year 2018, two National Immunization Days (NID) have been conducted and two sub- national polio immunization rounds (SNID) are planned, in addition to polio vaccination through routine immunization. Inactivated Polio Vaccine (IPV) has also been introduced across the country to further boost the population immunity as additional protection against polio.
  - Vaccination to international travellers to and from 8 other countries and continuous vaccination at the international borders of India are being carried out throughout the year to mitigate risk of importation.
  - Sensitivity of polio surveillance is maintained through Acute Flaccid Paralysis (AFP) surveillance in human and environment surveillance to detect any polio threat as early as possible and respond quickly to mitigate the risk of circulation.

35. World Biofuel Day 2018

Source: PIB

Why in news:

- "World Biofuel Day 2018" event was organized in New Delhi today, with the Prime Minister addressing a diverse gathering, consisting of farmers, scientists, entrepreneurs, students, government officials, and legislators.
- PM unveiled a Booklet on "National Policy on Biofuels 2018", and launched "Pro Active and Responsive facilitation by Interactive and Virtuous Environmental Single window Hub" [PARIVESH].
- World Biofuel day is being observed since 2015 to create awareness about the importance of non-fossil fuels as an alternative to conventional fossil fuels and to highlight the various efforts made by the Government in the Biofuel sector.

36. POSHAN Abhiyan

Source: PIB

Why in news:

- It has been announced that all the districts will be covered under the POSHAN Abhiyan by the year 2019-20.

- POSHAN Abhiyaan (National Nutrition Mission - NNM) set up by Government on November, 2017 aims to reduce the level of stunting, under-nutrition, anemia and low birth weight babies.
- The important components of the Abhiyaan are:
  1. Ensuring convergence with various programmes
  2. Incentivizing States/ UTs for achieving goals
  3. IT enabled Real Time Monitoring (ICT-RTM)
  4. Evaluation
  5. Jan Andolan - to educate the people on nutritional aspects
  6. On-line Course on Nutrition for Children
  7. Nutrition message from folk songs and songs on WASH
  8. Yoga for children at AWCs
  9. Strengthening human resource
  10. Measuring height and length of children below 6 years of age.
- Under POSHAN Abhiyaan, the Government has fixed targets to reduce stunting, under-nutrition, anemia (among young children, women and adolescent girls) and reduce low birth weight by 2%, 2%, 3% and 2% per annum respectively.
- Mission also strives to achieve reduction in Stunting from 38.4% (NFHS-4) to 25% by 2022 (Mission 25 by 2022).

37. Pune tops Ease of Living index; Patna ranked lowest of 111 cities

Source: PIB

Why in news:

- Three cities in Maharashtra — Pune, Navi Mumbai and Greater Mumbai — top the first Ease of Living Index brought out by the Union Ministry of Housing and Urban Affairs.
- A city's ranking reflects its ability to provide data, as well as its actual performance on four different parameters — institutions or governance, social indicators, economic indicators and physical infrastructure.
- The urban local bodies are required to respond to 553 questions in 15 different categories under the four parameters. The cities which were unable or unwilling to provide data received low scores.
- New Delhi is ranked 65 among 111 cities, while Chennai is in 14th place. Kolkata did not participate in the survey.
- The three cities at the bottom of the rankings are Rampur, Kohima and Patna.
- Particular complications were seen in indicators such as health —where local governments did not have access to data from private hospitals.

Way forward:

- The ranking marks a shift to a data-driven approach to urban planning and management.
- The future editions of the Index may also incorporate citizen and stakeholder feedback rather than relying on government data alone.

38. Coloured stickers for petrol, CNG, orange for diesel

Source: PIB

Why in news:

- The Supreme Court on Monday agreed to a proposal of the Ministry of Road Transport and Highways (MoRTH) to have hologram-based coloured stickers on vehicles to indicate the nature of the fuel used in them.
- Hologram-based sticker of light blue colour will be used for petrol and CNG-run vehicles while similar sticker of orange colour would be placed on diesel vehicles.
- The date of registration of the vehicle would also be printed on these stickers.
- Green number plates for electric and hybrid vehicles.