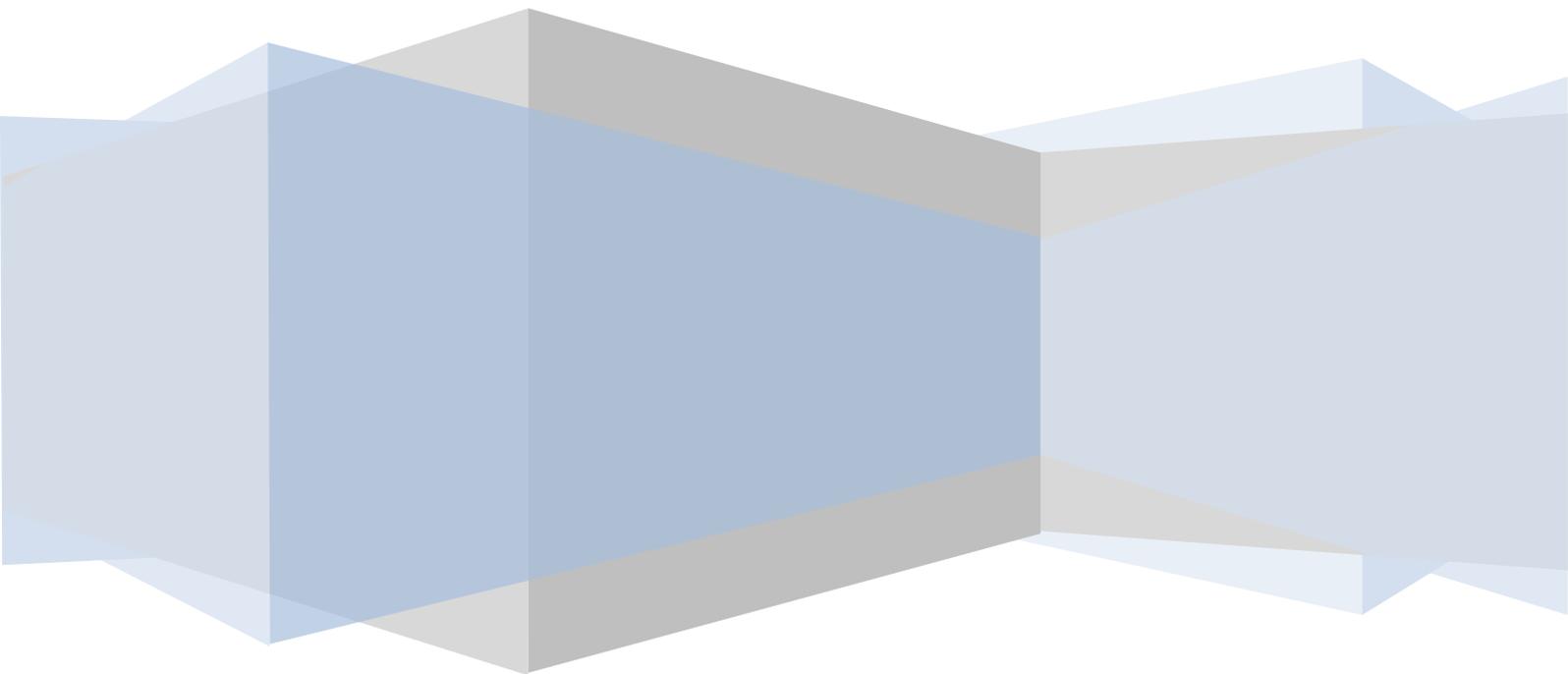


SESHAN'S ACADEMY
THIRUVANANTHAPURAM

Current Affairs

May 2019



POLITY AND GOVERNANCE

1. ELECTORAL BOND SCHEME

CONTEXT

Recently, the Supreme Court refused to stay the electoral bond scheme, a new mechanism to fund elections.

BACKGROUND

- * The SC is hearing a petition questioning the anonymity - based funding scheme on the grounds that it promotes opacity, opens up the possibility of black money being donated to parties through shell companies and empowers the ruling party.
- * The court has decided to examine the issue in detail because the rival concerns raised can have an impact on the electoral process.
- * As an interim measure, the Court asked political parties to disclose, to the Election Commission (EC) in sealed cover, details of the donations they have received through electoral bonds.

WHAT IS AN ELECTORAL BOND

Electoral Bonds Scheme Notified
To help cleanse the political funding system in the country

Nature

- Bearer instrument in the nature of a Promissory Note
- Interest free banking instrument

Eligibility

- A citizen of India or a body incorporated in India
- On fulfillment of all the extant KYC norms
- By making payment from a bank account

Value

- Issued/ Purchased in multiples of Rs.1,000, Rs.10,000, Rs.1,00,000, Rs.10,00,000 and Rs.1,00,00,000
- Available from the Specified Branches of the State Bank of India (SBI)

Lifespan

- Shelf life of only 15 days
- Can be used for making donation only to the political parties registered u/s 29A of the Representation of the Peoples Act, 1951

Period of Purchase

- Available for purchase for a period of 10 days each in the months of January, April, July and October, as may be specified by the Government

- * The 'electoral bonds' were introduced by the Finance Act, 2017 and the scheme was subsequently notified in 2018.
- * Electoral bonds are **bearer instruments** like promissory notes i.e. in effect these are similar to a bank note that is payable to the bearer on demand and free of interest.
- * The bonds can be purchased by an **Indian citizen** or a **body incorporated in the country**.
- * The bonds will not bear the name of the donor but the buyers of the bonds have to submit **full KYC details** at the time of buying

- * One can purchase bonds of **various denominations** from a designated bank (**not all banks**) within the 10-day window in every quarter of the financial year.
- * The purchasers of these bonds need to present these to the political parties of their choice, and the parties have to redeem them within 15 days.
- * Every registered political party that has secured at least one per cent of the votes polled in the most recent Lok Sabha or State election will be allotted a verified account by the Election Commission. Electoral bond transactions can be made only via this account.
- * A donor will get a deduction and the recipient, i.e, the political party, will get tax exemption.

CONCERNS

- * The Electoral Bonds Scheme is alleged to have opened the floodgates to unlimited corporate and anonymous financing to political parties.
- * The removal of cap on donations by companies and the legalisation of anonymity pose a danger to the autonomy of electoral process and can encourage corrupt practices in politics, and the unholy nexus between politics and corporate houses.
- * Ordinary citizens will not be able to know who is donating how much money to which political party and thus adversely impact the ability to vote with an informed decision making.
- * Nevertheless, the scheme has brought in a shift from the old electoral system in which massive amounts of political donations were being made in cash, and identity of the donors was not known as the system was wholly opaque and ensured complete anonymity.
- * On the contrary, the electoral bonds are purchased only by means of a demand draft, cheques or through the Electronic Clearing System; no black money can, therefore, be used for the purchase of these bonds.
- * The non-disclosure of the identity of the donor has the objective to safeguard the donor from political victimisation, in case they turn out to have supported the losing party.
- * Moreover, the KYC details are always available in the banking channel and can be received as and when required by enforcement agencies.

WAY AHEAD

- Given that political funding used to be a way to whitewash black money, the switch to a mechanism that operates through the banking system is undoubtedly a step forward in ensuring clean political funding.
- As a step towards transparency, the company should disclose in its yearly balance sheet the donations made by it so that the electors and company shareholders know how a party is being financed.
- The political class needs to debate more on the long-pending issue of political funding in order to resolve the anonymity vs. transparency impasse.

2. SPECIAL LEAVE PETITIONS

Why in news

Recently, Vedanta Ltd. has moved Supreme Court with a Special Leave Petitions (SLP) seeking interim access to undertake maintenance activities at its Sterile Copper plant in Tuticorin (**Toothukudi**), Tamil Nadu. The plant was ordered shut after protests in May 2018.



Special leave petition

- Special leave petition (SLP) means taking special permission to be heard in appeal against any judgement passed by any court or tribunal in the country (except military tribunal).
- It is not an appeal but a **petition filed for an appeal**. So after an SLP is filed, the Court, if it deems fit, may grant the 'leave' and convert that petition into an 'appeal'. SLP shall then become an Appeal. The Court will then hear the matter and pass a judgement.
- SLPs are filed before the **Supreme Court** under **Article 136** of the Constitution.
This provision contains the four aspects as under:
 - * It is a discretionary power and hence, cannot be claimed as a matter of right
 - * It can be granted in any judgement whether final or interlocutory
 - * It may be related to any matter - constitutional, civil, criminal, and labour, revenue etc.
 - * It can be granted against any court or tribunal
- Thus, the scope of this provision is very wide and it vests the Supreme Court with a plenary jurisdiction to hear appeals.
- While hearing an SLP, the SC is only concerned with question of law i.e. if the law was correctly applied or not.

PROCEDURE OF SLP

Once registered and presented in the court, the petitioner will get a hearing before the court. Subsequently, depending on the merits of the case, the court will issue a notice to the opposite parties who will then file a counter affidavit stating their views. It's at this point that the court will decide whether to grant leave to the petitioner or not. If the court grants leave, the case is then converted into a civil appeal and will be argued afresh in the Supreme Court.

The court can rescind or revoke the earlier judgement, modify it or stick by it. The court can also send the case back to the relevant lower court for fresh adjudication in light of principles laid down by it or on account of any issues missed out by the lower court.

According to article 141 of the Indian Constitution, the Supreme Court's judgement is declared as law of the land and is binding on all courts in India.

The petitioner usually gets 90 days from the date of receiving the final copy of the judgement of the court or relevant tribunal to file an SLP. But the court may be flexible on this deadline.

CONCLUSION

Special Leave Petition or SLP holds a prime place in Indian Judicial system and has been provided as residual powers in the hands of Supreme Court of India to be exercised only in the cases when substantial question of is involved or gross injustice has been done.

It is the discretionary power vested in the supreme court of India and court may in its refuse to grant to leave the appeal. The aggrieved party cannot leave to appeal under Article 136 as a right but it is privilege vested in the Supreme court of India to grant to leave or not.

3. LOKPAL AND LOKAYUKTAS

WHY IN NEWS

President Ram Nath Kovind, on 23 March 2019, administered the oath of office to justice Pinaki Chandra Ghose as the country's first Lokpal.

Former Chief Justice of different high courts- Justices Dilip B Bhosale, Pradip Kumar Mohanty, Abhilasha Kumari-besides sitting Chief Justice of Chhattisgarh High Court Ajay Kumar Tripathi was appointed as judicial members in the Lokpal.

Former first woman chief of Sashastra Seema Bal Archana Ramasundaram, ex-Maharashtra chief secretary Dinesh Kumar Jain, former IRS officer Mahender Singh and Gujarat cadre ex-IAS officer Indrajeet Prasad Gautam are the Lokpal's non-judicial members.

LOKPAL AND LOKAYUKTAS ACT

- The Lokpal and the Lokayukta Act, which envisages appointment of a Lokpal at the Centre and Lokayuktas in states to look into cases of corruption against certain categories of public servants, was passed on 2013.
- According to the rules, there is provision for a chairperson and a maximum of eight members in the Lokpal panel. Of these, four need to be judicial members.
- Not less than 50 per cent of the members of the Lokpal shall be from amongst the persons belonging to the scheduled castes, scheduled tribes, other backward classes, minorities and women, the rules say.
- Upon selection, the chairperson and members shall hold office for a term of five years or till they attain 70 years of age.
- The salary and allowances of the chairman will be the same as that of the Chief Justice of India. The members will be paid salary and allowances the same as that of a judge of the Supreme Court.

4. SC NOD FOR GREEN CRACKERS.

CONTEXT

The Supreme Court, on 11 April 2019, gave its nod for the manufacture of 'green crackers' on submission of a permissible formula by the Petroleum and Explosive Safety organization (PESO) to the Centre by April 30.

COURT VERDICTS

- Upon such approval of new formulation fireworks to the Union of India, the fireworks manufacturers may start to manufacture firecrackers in accordance with the new formulation and after due permission from the concerned authorities.
- Any licensed manufacturer might apply for requisite approval in accordance with the relevant rules and orders.
- This order shall be subject to such orders after the PESO has granted the approval and shall operate till such further orders that may be passed and shall not be construed to creating any equity in favour of anybody else.
- For the present the Bench rejected the prayer made on behalf of the fireworks manufacturers to permit manufacture of fireworks with Barium substitute i.e. Barium Nitrate. This is said to reduce the pollution to the extent of about 25 to 30 per cent.
- The Bench also permitted the Tiruchoor temples to celebrate Pooram festival on May 7 and 14 by displaying fireworks to be manufactured with the approval of PESO. However, they shall ensure that barium is not used in the fireworks. The applicants-temples must take care that the fireworks manufactured for the festivity are used and retained by them and do not find their way into the market.

PETROLEUM AND EXPLOSIVE SAFETY ORGANIZATION (PESO)

PESO is the apex department to control and administer manufacture, storage, transport and handling of explosives, petroleum, compressed gases and other hazardous substances in India.

- It functions under the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry.
- It is headed by Chief Controller of Explosives
- It is headquartered at Nagpur, Maharashtra

CONCLUSION

The court had in October last year banned used of firecrackers across the country to curb rising environmental pollution, allowing only a two - hour window on Diwali and other festival days. While banning conventional firecrackers the top court had, however, permitted the use of green crackers with less emission and noise decibels.

5. TRAVELLING ABROAD IS A BASIC HUMAN RIGHT

CONTEXT

Recently, the Supreme Court has ruled that the right to travel abroad is an important basic human right.

THE VERDICT

- The Court was hearing the plea of an IPS Officer who was denied permission to go abroad as he is facing departmental proceedings.
- SC observed that the pendency of departmental proceedings cannot be a ground to prevent the officer from travelling abroad.
- The Court observed that the right to travel abroad is an important basic human right for it nourishes independent and self - determining creative character of the individual, not only by extending his freedoms of action but also by extending the scope of his experience.

BACKGROUND

- Freedom of movement is one of the six freedoms under Article 19(1) of the Constitution i.e. freedom
 - * Of speech and expression.
 - * To assemble peaceably and without arms;
 - * To form associations or unions;
 - * To move freely throughout the territory of India;
 - * To reside and settle in any part of the territory of India; and
 - * To practice any profession, or to carry on any occupation, trade or business.
- The freedom of movement has two dimensions, Vis, right to move inside the country and right to move out of the country and to come back.
- Article 19 protects only the first dimension. The second dimension is dealt with by Article 21.
- In **Maneka Gandhi case** (1978), the Supreme Court took a wider interpretation of Article 21. The court held that the 'right to life' is not merely confined to animal existence or survival but it includes within its ambit the right to live with human dignity and all those aspects of life which make a man's life meaningful, complete and worth living.
- It also ruled that the expression 'personal liberty' in Article 21 is of the widest amplitude and it covers a variety of rights that go to constitute the personal liberties of a man

CONCLUSION

The Maneka Gandhi judgment was a balanced judgment and is one of the best judgments that Indian Supreme Court has ever given. The judgment's greatest feature was the interlinking it established between the provisions of Article 14, 19 & 21. By the virtue of this link the court made these provisions inseparable and a single entity. Now any procedure to be valid has to meet all the requirements mentioned under Article 14, 19 & 21. Therefore, it expanded the scope of personal liberty exponentially and protected the constitutional and fundamental right to life to a great extent.

The judgment while saved the citizens from unquestionable actions of Executive also saved the sanctity of Parliamentary law when it did not strike down Section 10(3)(c) & 10(5) of 1967 Act. The court also reminded the authorities to only rarely use the prerogative of section 10(5) so as to satisfy that their actions were rational and well thought. The court held that Section 10(3)(c) & 10(5) is an administrative order therefore, open to challenge on the grounds of mala fide, unreasonable, denial of natural justice and ultra vires.

6. NO CLINICAL TRIALS FOR NEW DRUGS

CONTEXT

The Ministry of Health and family Welfare has allowed waivers on conducting trials for new drugs in India in case the drug is approved and marketed in countries specified by the Central Drugs Standard Control Organisation (CDSCO).

HIGHLIGHTS OF THE NEWS

- New drugs approved for use in select developed markets will be automatically allowed in India provided global trials included Indian patients.
- If also removed a clause in the clinical trials that mandated the sponsor(the entity initiating the trial) to pay 60% of compensation upfront in case of death or permanent disability of a patient. Now, companies will pay the total amount once it is proven that the injury occurred because of the trial.
- Compensations in cases of death and permanent disability, or 'other' injuries to a trial participant will be decided by Drug Controller General of India (DCG).

- It removed regulations on tests conducted on animals in case of drugs approved and marketed for more than two years in well - regulated overseas drug markets.
- The new rules will end the unnecessary repetition of trials and speed up the availability of new drugs in the country. It is also expected to lower the cost of drugs and improve the ease of doing business for drug makers.

Central Drugs Standard Control Organisation (CDSCO)

- CDSCO is the Central Drug Authority for discharging functions assigned to the Central Government under the Drugs and Cosmetics Act, 1940.
- Its major functions include - regulatory control over the import of drugs, approval of new drugs and clinical trials and approval of certain licences as Central Licence Approving Authority.
- It works under the Directorate General of Health Services, Ministry of Health & Family Welfare.

Drugs and Clinical Trials Rules, 2019

The rules will apply to all new drugs, investigational new drugs for human use, clinical trials, bio-equivalence studies and ethics committees.

The rules has reduced time for approving applications, which has now come down to 30 days for drugs manufactured in India and 90 days for those developed outside the country. Also, in case of no communication from Drugs Controller General of India, the application will be deemed to have been approved.

As per the new rule, the requirement of a local clinical trial may be waived for approval of a new drug if it is approved and marketed in any of the countries (EU, U.K., Australia, Japan and U.S.) specified by the Drugs Controller General with the approval of the government.

The new rules will ensure patient safety and an ethics committee will monitor the trials and decide on the amount of compensation in cases of adverse events.

CONCLUSION

An amendment in the new rules said that companies will pay the total amount once it is proven that the injury occurred because of the trial. The earlier proposal said the interim compensation will not be recoverable even if investigations prove that the death or disability did not occur because of the trial.

The Union health ministry's proposal drafted in February 2018 included a mandate for the company to pay 60% of the compensation within 15 days, if a person dies or suffers a permanent disability during the course of a trial.

7. NEW POST OF DEPUTY COMPTROLLER AND AUDITOR GENERAL

CONTEXT

The Union Cabinet has approved creation of one post of Deputy Comptroller & Auditor General in the Office of the Comptroller & Auditor General (CAG) of India.

BACKGROUND

- The new Deputy CAG shall oversee the coordination among, State Audits, audit of telecommunication and to coordinate the various Information Systems initiatives within the Indian Audit & Accounts Department (IA &AD).

- Until now, the office of the CAG had five deputies. Their scope of work includes government accounts, central revenue audit, defence & railways, commercial & reports of central, communications and information systems.

Comptroller and Auditor General (CAG)



RAJIV MEHRISHI

- **Article 148** of the Constitution provides for the CAG as the head of the Indian Audit and Accounts Department.
- CAG is the **guardian of the public purse** and controls the entire financial system **at both the levels - the Centre and the state.**
- As an agent of the Parliament, CAG **conducts audit of expenditure** on behalf of the Parliament. Therefore, he is **responsible only to the Parliament.** CAG has **no control over the issue of money from the consolidated fund.**
- CAG is **one of the bulwarks of the democratic system** of government in India; the others being Supreme Court, the Election Commission and the Union Public Service Commission.
- The CAG is **appointed by the President.** He holds office for a period of **six years** or up to be age of **65 years**, whichever is earlier. He does not hold the office till the pleasure of the President.
- He can resign by addressing his **resignation to the President.**
- He can be **removed** by the President on a resolution passed by both the Houses of Parliament with **special majority**, either on the ground of **proved misbehaviour or incapacity.**
- After he ceases to hold his office, he is **not eligible for further office.**
- His salary and other services conditions are **determined by the Parliament.**

INTERNATIONAL RELATIONS

1. PRESIDENT OF INDIA VISITS BOLIVIA

CONTEXT

Recently, the President of India completed his visit to the Plurinational State of Bolivia.



BOLIVIA

SIGNIFICANCE OF THE NEWS

- First ever visit by an Indian President to Bolivia.
- Bolivia also conferred the highest *State Honour of Bolivia* on the President

OUTCOME OF THE VISIT

- 8 Memorandum of Understandings (MoUs) were signed between India and Bolivia concerning fields of culture, visa waiver for diplomats, the exchange between diplomatic academies, mining, space, traditional medicine, the establishment of Centre of Excellence in IT and the bi-oceanic railway project.
- Bolivia also joined the International Solar Alliance by signing the framework agreement.
- **Lithium deposit exploration**
- **Financial aid**
Under the framework of South – South Cooperation, India gave a \$100 million Line of Credit to Bolivia for financing development projects in sectors that Bolivia may choose.

India – Bolivia relations

- The Indian Embassy in Peru is concurrently functioning for Bolivia since April 1981.
- Bolivia opened a resident Mission in India in 2012.
- **Trade relations**
 - India – Bolivia bilateral trade has grown in the last two years and it stood at \$875 million in 2018.
 - 60% of Bolivian gold is exported to India.
 - Bolivia is the 8th leading trading partner of India in the Latin America region.
 - There is a scope for diversifying trade basket to further strengthen the bilateral trade

2. PRESIDENT VISIT TO CHILE

CONTEXT

Recently, the President of India completed his visit to the Republic of Chile.

HIGHLIGHTS OF THE NEWS

- India-Chile commemorated the 70th anniversary of the establishment of diplomatic relations between Chile and India.
- India and Chile are partners in the International Solar Alliance.

- India – Chile signed three Memorandums of Understanding (MoUs) in the fields of – mining, culture and disability.
- Chile is India’s window to Latin America and to the Pacific Alliance.
- Chile is the fifth largest trading partner of India in the Latin American region.
- India – Chile signed the Preferential Trade Agreement in 2017 to enhance the trade.
- The bilateral trade is growing and stood at \$ 2.8 billion in 2017-18.

REPUBLIC OF CHILE



- The capital of Chile is **Santiago**
- It is South American country occupying a narrow strip of land between the Andes to the east and the Pacific Ocean to the west.
- It borders Peru to the north, Bolivia to the northeast, Argentina to the east, and the Drake Passage in the south.
- The **Atacama Desert**, one of the driest places in the world touches Chile in its northern side and is a source of sodium nitrate fertilizer. It owes its aridity due to a constant temperature inversion of cool north-flowing Humboldt Ocean current.

3. PARLIAMENTARY ELECTION IN MALDIVES

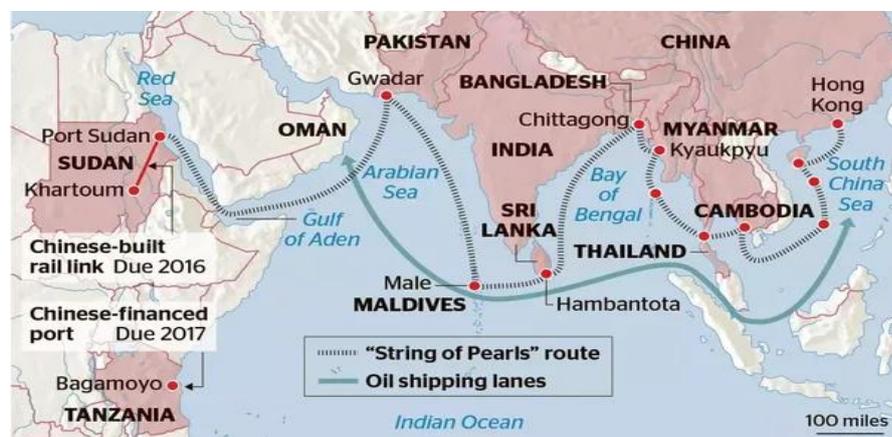
CONTEXT

The Maldivian Democratic Party (MDP) has won a landslide victory in the parliamentary election in the 87-Member People’s Majlis (Maldivian Parliament).

SIGNIFICANCE OF INDIA

- After a downward trend in relation during the presidency of Abdulla Yameen, the relation between India and Maldives are warming up again under the new President Ibrahim Solih.
- Since September 2018, India and Maldives have seen a number of bilateral visits.

INDIA-MALDIVES RELATIONS



- India and the Maldives share deep historical, cultural, and economic ties.

- India was among the first to recognize the Maldives after its independence in 1965 and to establish diplomatic relations with the country. India established its mission at Male in 1972.
- India's bilateral and financial assistance to the Maldives has been reciprocated through an "India first" policy by the Maldives.

IMPORTANCE OF MALDIVES FOR INDIA

- Maldives is an important aspect of India's 'Neighbourhood first' Policy.
- Strategically located in the Indian Ocean, Maldives archipelago comprising 1200 coral Islands lies next to key shipping lanes when ensure uninterrupted energy supplies to countries like China, Japan, and India.
- As the pre – eminent South Asian power and a 'net security provider' in the Indian Ocean region, India needs to cooperate with the Maldives in security and defence sectors.
- India is also a preferred destination for Maldivians for education, medical treatment, recreation, and business.
- Maldives is also a member of SAARC. It is important for India to have Maldives on board to maintain its leadership in the region.
- Since China's naval expansion into the Indian Ocean, Maldives significance has steadily grown and now it's at the heart of international geopolitics.
- There is significant Indian Diaspora in Maldives. Innumerable Indians work across the hospitality, education, and health –care sectors of Maldives economy.

South Asian Association for Regional Cooperation (SAARC)

- The South Asian Association for Regional Cooperation (SAARC) is a regional intergovernmental organization and geopolitical union in South Asia formed in 1985 in Dhaka.
- The member states include Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and Sri Lanka.
- The organization promotes the development of economic and regional integration; It launched the South Asian Free Trade Area in 2006.
- SAARC maintains permanent diplomatic relations at the UN as an observer and has developed links with multilateral entities.
- Headquarters: Kathmandu, Nepal.

5. INDO-PACIFIC WING IN MEA

CONTEXT

India has set up an Indo-Pacific division in the Ministry of External Affairs.

IMPORTANCE OF SEPERATE DIVISION

- The new division is intended to give a coherent architecture to the policy, which was articulated by the Prime Minister at the Shangri-La Dialogue in 2018.
- MEA's territorial divisions are crucial for policy making, so the creation of an Indo-Pacific division is a big step by the government.
- The division will integrate the Indian Ocean Rim Association (IORA), ASEAN region and the Quad.
- India is planning to put greater energy to the IORA because the core of its Indo – Pacific policy is rooted in the Indian Ocean.
- The Us also recently renamed its Pacific Command to the Indo-Pacific Command as it seeks to give significance to its Indo – Pacific policy.

HIGHLIGHTS OF PM ADDRESS OF SHANGRI – LA

- By projecting an equivalence in ties with the Us, Russia, and China – India reaffirmed its principle of **strategic autonomy** and cautioned against the return of the ‘great power rivalries’.
- India’s Indo – Pacific strategy is not aimed at China’s containment.
- India sees the Indo-Pacific as primarily a geographic domain – a “natural region”.
- The Indo-pacific region is ultimately multi-polar, hence rejecting or contesting the idea that either China or the United States could be the one regional hegemonic power.
- India is indispensable to the security of the Indian Ocean.
- Signified the interconnectedness of the Indian and Pacific Oceans and the importance of the oceans to security and commerce.

SHANGRI – LA DIALOGUE

- The Shangri-La Dialogue (SLD) is an intergovernmental security forum held annually by an independent think tank, the International Institute for Strategic Studies in Singapore.
- The Shangri- La Dialogue has evolved into a key strategic gathering of the Asia – Pacific region.
- It is attended by defence ministers, permanent heads of ministries and military chiefs of Asia – Pacific states.

Indian Ocean Rim Association



- The Indian Ocean Rim Association is an intergovernmental organization which was established in 1997.
- IORA has 21 Member States, mainly littoral Indian Ocean states, and 7 other states as Dialogue Partners.

6. OPERATION SAHAYATA

CONTEXT

Cyclone IDAI made landfall in East & Southern Africa around 15 March 2019 causing widespread destruction and loss of human lives in Mozambique, Zimbabwe and Malawi.

HIGHLIGHTS OF THE NEWS

- In response to a request from the Republic of Mozambique, the Government of India immediately diverted **3 Indian naval ships** to the port city of **Beira**.

- Over the last several days, the 3 Indian ships, **INS Sujata**, **ICGS Sarathi** and **INS Shardul** are undertaking HADR (Humanitarian Assistance Disaster Relief) in coordination with local authorities and the **High Commission of India**, Maputo.
- As of now, **Indian naval crew** has rescued more than 192 people. Medical assistance has been provided to 1381 persons in medical camps set up by the Indian Navy.
- **IN Helicopter Chetak** took several sorties to facilitate aerial survey by Disaster management officials of Mozambique, for evacuation of people in coordination with local authorities and for dropping of food & water packets in cyclone affected areas.
- **Indian Navy ships** have also been providing fresh water in relief camps, undertaking community service including clearing of debris and repairing damaged roads etc. Food supplies have also been provided to about 700 persons working in the port area.
- To sustain HADR operations, another ship **INS MAGAR**, suitably loaded with relief materials is being sent to Mozambique. The HADR brick loaded on board contains **medicines, dry provisions, ready-to-eat meals, daily essentials and clothing items**.

CONCLUSION

India Navy was the first responder in the evolving humanitarian crises in the aftermath of **Cyclone IDAI** that hit Mozambique on 15 March 2019. Assistance is also being sent to Zimbabwe and Malawi, two other countries hit by the cyclone.

7. INDO-PAK KARTAPUR CORRIDOR

CONTEXT

India wants the construction of a km-long bridge on the Ravi River while Pakistan suggested the need to construct a road.



BACKGROUND

The Kartarpur Corridor is a proposed border corridor between the neighbouring nations of India and Pakistan, connecting the Sikh shrines of Dera Baba Nanak Sahib (located in Punjab, India) and Gurdwara Darbar Sahib Kartarpur (in Punjab, Pakistan). Currently under planning, the corridor is intended to allow religious devotees from India to visit the Gurdwara in Kartarpur, 4.7 kilometres (2.9 miles) from the Pakistan-India border, without a visa.

The Kartarpur Corridor was first proposed in early 1999 by the prime ministers of India and Pakistan, Atal Bihari Vajpayee and Nawaz Sharif, respectively, as part of the Delhi–Lahore Bus diplomacy.

HIGHLIGHTS OF THE NEWS

- The ambitious Kartarpur corridor linking Pakistan’s **Gurudwara Darbar Sahib** with India’s **Dera Baba Nanak shrine** has hit a roadblock after the technical experts from both the countries could not find a consensus on building a bridge over the Ravi’s floodplain.
- The experts from Pakistan and India on Monday held a meeting to discuss the modalities for the corridor at the **Kartarpur Zero Point**.
- The Indian officials objected to the road, citing the possibility of floods in the river. However, the Pakistani officials said that a dam could be built around the road and the inclination of the road could be kept high to avoid flood water
- **Ministry of External Affairs, Ministry of Home Affairs, Land Ports Authority of India, National Highways Authority of India** attended the meeting. The Pakistani side was represented by **the officials of Federal Investigation Agency, customs, construction, Pakistan Rangers Punjab and Survey of Pakistan**.
- The Kartarpur corridor is expected to provide **visa-free access** to Indian Sikh pilgrims to the Gurdwara in Kartarpur Sahib — a small town in Narowal, four kilometres from the Pakistan-India border, where Sikhism founder Baba Guru Nanak spent the last 18 years of his life

CONCLUSION

The corridor will be opened in November this year in connection with the **550 birth anniversary of Baba Guru Nanak**.

8. BCIM NOT A PART OF BRI: CHINA

CONTEXT

China has stated that the Bangladesh – China – India – Myanmar (BCIM) Corridor will not be a part of the Belt & Road initiative.

HIGHLIGHTS OF THE NEWS

- India’s decision to skip the Belt and Road Forum (BRF) may have led to the exclusion of the Bangladesh-China-India-Myanmar (BCIM) Economic corridor from the list of projects covered by the China – led Belt and Road Initiative (BRI) umbrella.
- Citing sovereignty concerns, India, for the second time has not officially participated in the BRF, as China Pakistan Economic Corridor (CPEC) – a flagship of the BRI – passes through Pakistan occupied Kashmir (PoK).
- In the official communiqué of BRF, South Asia is covered by three major undertakings – the China-Myanmar Economic Corridor (CMEC), the Nepal – China Trans-Himalayan Multidimensional Connectivity Network and the China Pakistan Economic Corridor (CPEC).



BANGLADESH-CHINA-INDIA-MYANMAR (BCIMO CORRIDOR)

- The 2800 km BCIM corridor proposes to link Kunming in China’s Yunnan province with Kolkata, passing through nodes such as Mandalay in Myanmar and Dhaka in Bangladesh before heading to Kolkata.

China – Myanmar Economic Corridor (CMEC)

- The 1,7000 –km corridor provides China another node to access the Indian Ocean.
- The CMEC will run from Yunnan Province of China to Mandalay in Central Myanmar.
- From there it will head towards Yangon, before terminating at the Kyaukpyu Special Economic Zone (SEZ) on the Bay of Bengal.
- The CMEC will reduce Beijing’s trade and energy reliance on the Malacca Strait- the narrow passage that links the Indian Ocean with the Pacific.
- China is worried that US Naval domination over the Malacca strait can threaten one of China’s major economic lifeline.

Nepal – China Trans – Himalayan Multi – dimensional Connectivity Network

- The Nepal – China Trans – Himalayan connectivity network starts at Chengdu, from where it is linked to Tibet by the Sichuan – Tibet Highway and Railway.
- China has visualized that railway can eventually be connected with the Indian railway network, linking China and India across the Himalayas.

China Pakistan Economic Corridor (CPEC)

- The CPEC is a bilateral project between Pakistan and China, intended to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial and other Infrastructure development projects.
- CPEC links the Western part of China to the Gwadar Port in Balochistan, Pakistan running some 3000 km from Xinjiang to Balochistan via Khunjerab Pass in the Northern parts of Pakistan.

9. Iran Oil Import Waiver Lifted

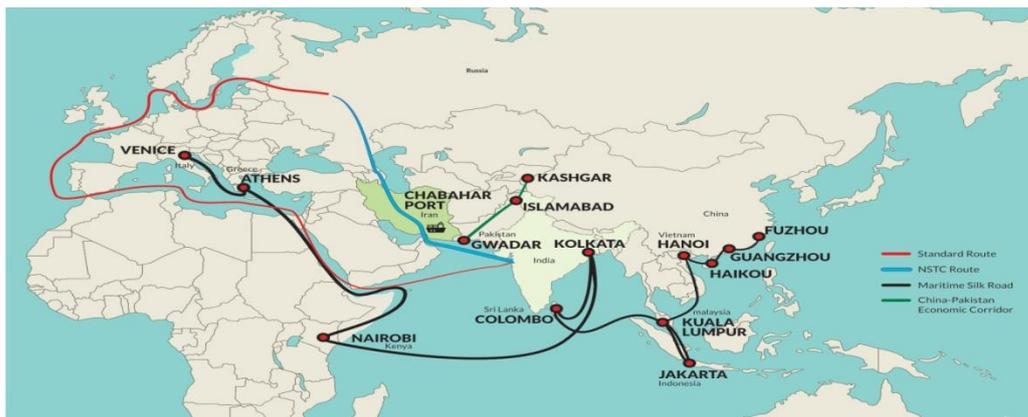
CONTEXT

The US has stated that it will not renew exemptions from its sanctions for importing oil from Iran. There will be no **Significant Reduction Exceptions (SREs)** to any nation anymore.

Highlights of the News

- The exemptions were granted last November for a 180 – day period to India and seven other countries, and they expired on May 2.

- India, China, and US allies Japan, South Korea, and Turkey will be the most impacted by the non-renewal of waivers.
- The other three currently exempted countries – Italy, Greece, and Taiwan – have already reduced their imports to zero.
- The US has said that India’s “escrow account” used to Rupee – Rial trade cannot be operated after May 2 deadlines.
- However, there is no change in the exemption given for India’s investments in Chabahar port as a trade route to Afghanistan.
- US will place financial curbs on any entity or company violating the oil sanctions, including a ban on the use of the SWIFT banking international transaction system by the companies, seizure of any US assets of those companies, and curtailing any other dollar transactions.



Concerns

- India is the world’s third – biggest oil consumer. It meets more than 80% of its crude oil requirements and around 40% of its natural gas needs through imports.
- India is Iran’s top oil buyer after China. In 2018-19, almost 10% of India’s total crude oil import was from Iran.
- Iran was the fourth largest supplier of oil to India in 2018 – 19, and other suppliers may not provide the same benefits in the form of price and credit facilities.

Impact of sanctions

- On Iran: The significant reduction in oil export will deny Iran its principal source of revenue.
- On Global Oil Supplies: Iran has a 4% share of global oil production in 2018. The Sanctions are likely to impact global oil supply chains leading to significant rise in oil prices.
- Iran has also threatened to close the Strait of Hormuz (a channel linking the Persian Gulf with the Arabian Sea) which can disrupt global trade.
- However, the United States, Saudi Arabia, and the United Arab Emirates, three of the world’s largest energy producers have said that they are committed to ensuring that global oil markets remain adequately supplied.

Impact on India

- Oil Supply for Refineries: The decision of the US is likely to irk India, particularly since the US has also imposed sanctions on another of India’s top suppliers, Venezuela.
- Current Account Deficit: Higher crude oil prices will widen the trade deficit and Current Account Deficit, given that the value of imports goes up with crude oil.
- Rupee and inflation: The currency could be impacted if the trade and Current Account Deficits were to widen. An increase in the import bill will tend to put pressure on the rupee. The rise in crude oil prices passed on to the consumer will increase inflation.

10. Crisis in Libya

CONTEXT

General Khalifa Haftar, head of the Libyan National Army (LNA), has launched an offensive on the capital Tripoli of Libya

Background

- Anti –government protests began on February 15, 2011, leading to civil war between opposition forces and Muammar Gaddafi loyalists.
- The capital city, Tripoli was captured and the government was overthrown after military intervention by western powers.
- In Libya, a UN – backed internationally recognized government was put in place called the Government of National Accord (GNA).
- Libya has no single government currently. With LNA backing the Tobruk – based parliament which governs the East of Libya, and the GNA control was replete with inter – militia battles a kidnappings.
- The GNA commands no security forces, public administration scarcely exists, water petrol and power shortages abound, and few banks operate.

Impact

- The civil war in Libya may lead to a new migrant crisis from Africa into Europe.



- Libya has the largest oil reserve in Africa and one of the largest oil produces in the world. Instability in Libya may increase oil prices globally. This will impact India directly.
- Libya is a mostly desert and oil – rich country in northern Africa. Libya gained independence in 1951.
- Colonel Gaddafi seized power in 1969 and ruled for four decades until he was toppled in 2011 following an armed rebellion assisted by Western military intervention.
- Capital : Tripoli; Currency : Libyan dinar

ECONOMICS

1. SC Scraps RBI's Circular on Resolving Bad Debt

Context

The Supreme Court (SC) recently quashed the Reserve Bank of India's (RBI) February 12, 2018 circular which provided a revised frame work for quick recognition and resolution of stressed assets of banks.

Highlights of the news

- SC ruled that the RBI February 12 circular was ultravires of Section 35AA of the Banking Regulation Act, 1949.
- The Court said that the circular was unconstitutional and that a reference under the insolvency and Bankruptcy Code(IBC), 2016 has to be on a case-to-case basis and with the authorisation of the Central Government.
- Section 35AA of the act says that the Central Government may, authorise the RBI to issue directions to any banking company or banking companies to initiate insolvency resolution process in respect of a default, under the provisions of the insolvency and Bankruptcy Code, 2016.
- The SC verdict could delay the process of stressed assets resolution as all loan restructuring schemes were disbanded as part of the simplified generic framework for resolution of stressed assets on February 12.

February 12 circular of RBI

- Through a notification issued on February 12, 2018, the RBI laid down a revised frame work for the resolution of stressed assets, which replaced all its earlier instructions on the subject, such as, Strategic Debt Restructuring Scheme (SDR) and scheme for Sustainable Structuring of Stressed Assets (S4A).
- Banks were required to immediately start working on a resolution plan for debts of over Rs. 2,000 crore, which was to be finalised within 180 days, with a grace period of 90 days. In the case of non-implementation, lenders were required of file and insolvency application to the National Company Law Tribunal (NCLT).
- The circular mandated banks to disclose defaults even if interest repayment was overdue by one day.
- The circular was ostensibly intended to stop the “evegreening” of bad loans – the practice of banks providing fresh loans to enable timely repayment by borrowers on existing loans.
- Several companies from the power and shipping sectors had challenged the circular, arguing that the time given by the RBI was not enough to tackle bad debt.

Insolvency and Bankruptcy Code, 2016

- The insolvency and Bankruptcy Code (IBC), 2016 was promulgated by the Government to tackle the ‘twin balance sheet’ problem. Twin balance sheet problem refers to the stress on balance sheets of banks due to non-performing assets (NPAs) or bad loans on the one hand, and heavily indebted corporate on the other.
- Under IBC, the National Company Law Tribunal (NCLT) adjudicates insolvency resolution for companies and the Debt Recovery Tribunal (DRT) adjudicates insolvency resolution for individuals.
- If the default is over Rs 1 lakh, the creditor may initiate insolvency resolution process and approach the NCLT.
- The Code is quite different from the earlier resolution systems as it shifts the responsibility to the creditor to initiate the insolvency resolution process against the corporate debtor.
- After a case is admitted by the NCLT, the resolution process will have to be completed within 180 days. It can also be extended by another 90 days.
- There is also a provision for fast – tracking the resolution process so as to complete it in 90 days (which can be extended by another 45 days).

- However, only small companies (private entities having a paid up capital of up to Rs. 50 lakh or turnover of up to Rs 2 crore) and start-ups can opt for this method.
- The resolution processes are conducted by licensed Insolvency Professionals (IPs). An IP must have at least ten years of experience as chartered accountants, company secretaries, cost accountants, lawyers or in management.
- Insolvency and Bankruptcy Board of India (IBBI) exercises regulatory oversight over insolvency professionals, insolvency professional agencies and information utilities.

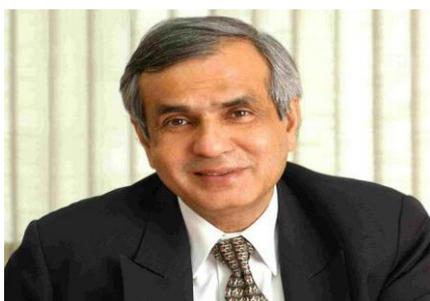
2. Fin Tech Conclave 2019

CONTEXT

Recently, NITI Aayog organised Financial Technology (Fin Tech) Conclave 2019 in New Delhi. The Conclave featured representatives from across the financial space. It was inaugurated by the Reserve Bank of India (RBI) Governor.

- The Indian Fin Tech ecosystem is the **third largest in the globe** and brings nearly \$6 billion investments since 2014.

Highlights of the news



Rajiv Kumar: Vice-chairman of the NITI Aayog

- Deliberations were held on various dimensions of the future of the FinTech, particularly the areas of
 - Digital On boarding of Customers and Merchants for Financial Inclusion
 - Building Financial Products for Bharat
 - Emerging Areas of Fin Tech
 - Fast-tracking investment in the Fin Tech industry
 - Financial inclusion of MSMEs
- Further, the RBI announced that it will issue norms for the **Introduction of a regulatory sandbox** in the next two months to **promote innovation in the financial sector**, which enables the conduct of live experiments with limited chances of failure.
- The objective of the conclave is to **shape India's continued ascendancy in FinTech, build narrative for future strategy and policy efforts, and to deliberate steps for comprehensive financial inclusion**. India's ambition is to emerge as a \$10 trillion economy and this is not possible without a revolution in the FinTech sector.

FinTech Sector

- FinTech is used to describe new technology that seeks to improve and automate the delivery and use of financial services such as payment, peer to peer lending, retail banking etc.

- The FinTech movement has the potential to fundamentally transform the financial landscape where consumers will get to choose from a larger set of options at competitive prices and financial institutions could improve efficiency through lower operational costs.
- Challenges
 - Difficulty of **regulating an evolving technology**
 - Monitoring activity **outside the regulated sector**.
 - Since there is no connection with the customer as the application is completely processed online there is a **higher risk of Non Performing Assets (NPAs)**.

Recommendations

- Bring **clarity to existing policies**, and ensure **consistent and formal guidelines** are evolved through consensus among the regulators and the stakeholders.
- Open up access to data within a larger framework of informed consent and adequate privacy safeguards.
- Increase funding sources and capital supply for MSMEs by introducing sectoral caps and increased margin size.
- Introduction of a new sub – class of Non – Banking Finance Companies (NBFCs) exclusively for FinTech-centric companies to encourage innovation and targeted policy.
- Introduction of 100 % paperless and presence – less eKYC and eSign.
- Building capacity by creation of ‘smart MSMEs expanding access to alternate data sources for underwriting and democratising access to government – led MSME ecosystem.

3. Jet Airways Crisis

CONTEXT

Recently, Jet Airways which was once India’s largest private carrier suspended all its domestic and international flight operations due to cash crunch. The suspension of operations follows the troubles at Kingfisher, Air Deccan, and Sahara.

Why do India’s airlines keep struggling?

- **High Costs, Low Yields:** Aviation Turbine Fuel (ATF) prices constitute about 40% of costs for an Indian carrier and are taxed higher here than anywhere else in the world. Also, a depreciating rupee has further increased the fuel price. These, combined with typical low-ticket pricing in India’s price – sensitive market make flying less profitable for the airlines as they are unable to pass down the cost fully to the passengers.
- **Government Apathy:** Airlines in India have been appealing to the government for a decade for a reduction in taxes on fuel.
- The archaic **Route Dispersal Guidelines (RDG)** mandate airlines to fly a certain percentage of flights in smaller, unprofitable air routes. The current form of RDG drives up costs and introduces inefficiencies.
- **Crew shortage:** The gap between the crew and fleet is widening in India.

Aviation Turbine Fuel (ATF)

- ATF is a Kerosene based fuel used for powering jet and turboprop engine aircraft.
- ATF doesn’t come under the GST (Goods and Services Tax) regime.

- Indian states charge as much as 30% in sales tax on aviation turbine fuel, on top of excise duty charged by the centre, making it the costliest in Asia.
- Bringing the fuel under the national tax regime will make it easier for airlines to make payments as the rate will be uniform across the country unlike now where it varies from state to state.

History of Indian aviation sector

- For four decades, after eight independent domestic airlines – Deccan Airways, Airways India, Bharat Airways, Himalayan Aviation, Kalinga Air Lines, Indian National Airways, Air India (formerly Tata Airlines), and Air Services of India – were merged to create state – owned Indian Airlines in 1953, India’s aviation sector remained a national monopoly.
- Policy changes came in the 1990s – and liberalisation and economic reforms allowed private airlines to operate.
- Besides repealing the **Air Corporation act, 1953** the government announced an **Open Skies policy in 1992**, liberalising rules and regulations to open up the commercial aviation market. Under the Air Corporation Act, only the state-owned carriers had the monopoly to operate as scheduled airlines.
- In December 2004, the government announced a major policy change, allowing Indian scheduled carriers with a minimum five year’s continuous operations and a minimum of 20 aircraft (the so called 5/20 rule) to fly international routes.
- In 2016, the government scrapped the 5/20 rule and replaced it with 0/20, private airlines to launch international flights in the following years.

4. Country –by-Country Report

CONTEXT

Recently, India and the US signed an Inter-Government Agreement for the automatic exchange of country – by- country (CbC) reports.

Key points

- It will **reduce the compliance burden** for Indian subsidiary companies of U.S. parent companies and also help to check cross –border tax evasion.
- The Agreement for Exchange of CbC Reports, along with the **Bilateral Competent Authority Agreement** will enable both the countries to automatically exchange CbC reports filed by the ultimate parent entities of multinational enterprises (MNE) in the respective jurisdictions, pertaining to the years commencing on or after January 1, 2016.
- It will also obviate the need for Indian subsidiary companies of US MNEs to do local filing of the CbC reports.
- The move is a key step in making India compliant with the **Base Erosion and Profit Shifting (BEPS) project** of the organisation for Economic Co-operation and Development (OECD), of which it is an active participant.

Country – by – Country Reporting

- The BEPS Action 13 report provides a template for MNEs to report annually the information regarding their income, earnings, and taxes paid etc, for each tax jurisdiction in which they do business. This report is called the Country-by- Country (CbC) Report.

Bilateral Competent Authority Arrangement

- It is an arrangement between India and the US to improve international tax compliance. It requires, in particular, the exchange of certain information with respect to US and Indian reportable accounts on an automatic basis for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on Income.

Base Erosion and Profit Shifting (BEPS)

- BEPS refers to the activities of multinational corporations to shift their profits from high tax jurisdictions to lower tax jurisdiction, thereby eroding the tax base of the high tax jurisdictions and depriving them of tax revenue.
- Under the OECD/G20 Inclusive Framework on BEPS, over 125 countries and jurisdictions are collaborating to implement the BEPS measures such as Automatic Exchange of Information (AEOI) to tackle BEPS.
- AEOI provides for the exchange of non-resident financial account information with the tax authorities in the account holder's country of residence. Participating jurisdictions that implement AEOI send and receive pre-agreed information each year, without having to send a specific request.

Organisation for Economic Cooperation and Development

- The OECD is an intergovernmental economic organisation, founded in 1961 to stimulate economic progress and world trade.
- Most OECD members are high – income economies with a very high Human development Index (HDI) and are regarded as developed countries.
- Headquarters: Paris, France.
- India is not a member, but a key economic partner.
- Reports and Indices released by OECD are :
 - Government at a Glance report
 - International Migration Outlook
 - OECD Better Life Index

5. Advance – Pricing Agreement

CONTEXT

Recently, the Central Board of Direct Taxes (CBDT) entered into 14 Unilateral Advance Pricing Agreements (UAPA) which include 3 Bilateral Advance Pricing Agreements (BAPA) with the US, Australia & Netherlands.

Highlight of the news

- These Advances – Pricing Agreements (APAs) pertain to various sectors and sub-sectors of the economy like anti –friction bearings, risk management solutions platforms, BPO, ATMs etc.
- The progress of the APA scheme strengthens the Government's resolve to **foster a non-adversarial tax regime.**
- APAs enhance tax revenues and make the country an **attractive destination for foreign investments.** These agreements would be **binding both on the taxpayer as well as the Government.**

Advance – Pricing Agreement (APA)

- An APA is a **contract between a taxpayer and a tax authority specifying the pricing method that the taxpayer will apply to its related – company transactions.**
- The APA scheme was **introduced in the Income – Tax Act in 2012.** It allows the CBDT to enter into APA with taxpayers for a maximum period of 5 years.
- The primary goal of APA is to **provide certainty to taxpayers in respect of the transfer price** of the cross-border transactions undertaken by such taxpayers with their group entities.
- Rapid growth in international trade through an increasing number of Multi-National Enterprises (MNEs) has given rise to numerous tax disputes on the issue of transfer pricing.
- An **APA is a mechanism to resolve transfer pricing disputes in advance**, i.e., before the cross – border related party transaction actually takes place.
- The **transfer price of goods and services transacted between group entities is decided in advance** by the tax authorities and the taxpayers, so as to **prevent any dispute arising from such transfer pricing.**
- An APA can be unilateral, bilateral, or multilateral.
 - **Unilateral APA** involves only the taxpayer and the tax authority of the country where the taxpayer is located.
 - **Bilateral APA** involves the taxpayer, Associated Enterprise (AE) of the taxpayer in the foreign country, the tax authority of the country where the taxpayer is located and the foreign tax authority.
 - **Multilateral APA** involves the taxpayer, two or more AEs of the taxpayer in different foreign countries, tax authority of the country where the taxpayer is located, and the tax authorities of AEs.

Central Board of Direct Taxes (CBDT)

- CBDT functions under the Central Board of Revenue Act, 1963.
- It is a part of the Department of Revenue in the Ministry of Finance.
- CBDT provides inputs for policy and planning of direct taxes in India and is also responsible for the administration of direct tax laws through the income Tax Department.

6. IMO’s New Rule on Electronic Information Exchange

CONTEXT

International Maritime Organisation (IMO) has mandated new rules for national governments to introduce electronic information exchange between ships and ports.

Highlight of the news

- The new rules took effect from April 2019 and, seeks to make cross – border trade simpler and the logistics chain more efficient
- The requirement, mandatory under IMO’s Convention on Facilitation of International Maritime Traffic (FAL Convention), is part of amendments under the revised Annex to the FAL Convention, adopted in 2016.
- It encourages the use of a “single window” for data, to enable all the information required by public authorities in connection with the arrival, stay and departure of ships, persons and cargo, to be submitted via a single portal, without duplication.

- Under the requirement for electronic data exchange, all national authorities should now have provision for the electronic exchange of this information.

India's initiatives

- India launched a Port Community System – 'PCS1x' – at ports in December 2018.
- Port Community System (PCS1x) is a cloud – based new generation technology, with a user – friendly interface.
- This system enables maritime trade to have improved communications with the customs.

International Maritime Organization (IMO)



IMO Headquarters, London, UK

- The International Maritime Organization is a specialized agency of the United Nations.
- IMO is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships
- It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic.
- It was established by means of Convention adopted under the auspices of the United Nations in Geneva in 1948 and met for the first time in January 1959.
- It currently has 174 Member States.

FAL Convention

- The Facilitation of International Maritime Traffic (FAL Convention) was adopted in 1965.
- The main objective of the convention is to achieve the most efficient maritime transport as possible, looking for smooth transit in ports of ships, cargo, and passengers.

7. Gig Economy

CONTEXT

Delhi has emerged as the top destination for migrant workers joining India's tech – enabled gig economy.

Highlight of the news

- The gig economy is a labour market characterised by the prevalence of short – term contracts or freelance work, as opposed to permanent jobs”.
- An estimated 56% of new employment in India is being generated by the gig economy companies across both the blue – collar and white – collar workforce.
- The reasons for this exponential growth are :

- In the digital age, the worker need not sit at a fixed location – the job can be done from anywhere, so employers can select the best talent available for a project without being bound by geography.
- The millennial generation seems to have quite a different attitude to careers. They seek to do work that they want to do rather than have careers that may not satisfy their inner urges.
- This suits businesses as well. In a gig economy, they save resources in terms of benefits like provident fund, paid leave and office space.
- Heightened migration and readily available job training.

Concerns

- The gig economy thrives largely unregulated; therefore workers have little job security and few benefits. But, with the tech companies coming in, there is data available, making it a possibility to enable job security.
- A worker needs to be skilled enough. Unless a person is extremely talented, his bargaining power will necessarily be limited.
- There are already many more potential online independent workers than jobs, and this demand-supply mismatch will only get worse over time, depressing wages.

Way forward

- There is a need for the government to step in and implement radical changes in labour laws or implement tax rebates and concessions that can be passed on directly to drivers or delivery partners as health or insurance benefits.
- The gig economy is providing employment to a large semi – skilled and unskilled workforce. Therefore, It is important to hand – hold this sector and help it grow. The economy needs policies and processes that give clarity to the way the sector should function.

8. Activity Report of the Bank Board Bureau

CONTEXT

The Bank Board Bureau (BBB) recently released its activity report for October 2018 to March 2019.

Key recommendations

- The report has proposed incentives like the Employee Stock Option Scheme (ESOS) to the employees and empowerment of PSU banks by giving complete autonomy to boards to decide the organisational structure.
- The BBB suggested revamping credit governance architecture in nationalised banks to reinforce efforts to minimise credit costs and enhance the efficiency of credit allocation.
- It has proposed improvement in the operating environment as well as the process for search and selection of directors to nudge and attract the best board level talent.
- Performance assessment of WTDs (whole – time directors) and senior management personnel should be undertaken by the Board.
- To help nationalised banks take on the present and emerging challenges as well as help create a leadership pipeline, the Bureau has identified 75 personnel from a pool of 450 senior management personnel across nationalised banks.

- Shortly, a globally ranked Indian Institution will be identified where every year the identified personnel will undergo an intensive leadership development journey.

Bank Board Bureau

- It is an autonomous body of eminent officials that recommends senior executive appointments in the public sector banks (PSBs).
- It was announced by the Union Government in August 2015 as part of seven point Indradhanush Mission to revamp PSBs and started function in April 2016.
- It performs the following functions
 - Gives recommendations for appointment of full-time Directors as well as non - Executive Chairman of PSBs.
 - Gives advice to PSBs in developing differentiated strategies for raising funds through innovative financial methods and instruments and to deal with issues of stressed assets.
 - Guides banks on mergers and consolidation and governance issues to address bad loan problem among other issues.

9. Mind the Gap – State of Employment in India

CONTEX

Oxfam India has released its 'Mind the Gap – State of Employment in India' report.

Highlights of the news

- **Lack of quality jobs and increasing wage disparity** are key markers of inequality in the Indian labour market.
- **Regressive social norms continue to hamper women's participation** in the workforce.
- The largest number of jobs was generated in the unorganised sector.
- **Job generation was adversely impacted after demonetisation** and hit the women workforce most. **Women were forced to move out of the labour force** to make way for men to get the few jobs that were available.
- **Caste and class continue to play crucial roles** in determining employment for men and women, especially in stigmatised vocations like sanitation, rag- picking, and jobs in the leather industry.

Recommendations

- Economic factors can be improved by way of policy interventions.
- A shift in development focus towards labour-intensive sectors can create more jobs and push for better work conditions to make jobs more inclusive.
- Substantially higher investments in health and education can improve productivity.

10. World Economic outlook 2019.

CONTEXT

The international Monetary Fund has recently released its biannual World Economic Outlook Report.

Highlights of the news

- IMF has cut down the global growth to 3.3% in 2019. Few reasons being: US – China trade tensions, macroeconomic stress in Turkey and Argentina, tighter credit policies in China, mounting debt levels and increasing inequality etc.
- Beyond 2020, the IMF predicts that global growth will stabilise at around 3.5%, buoyed mainly by growth in China and India.
- The International Monetary Fund (IMF) has cut India's Gross Domestic Product (GDP) growth forecast for 2019 – 20, following similar action by the Asian Development Bank (ADB) and the Reserve Bank of India (RBI).
- India's growth is projected to be 7.30% in 2019 (2019-20) and 7.5% in 2020. The growth will be driven by :
 - The continued recovery of investment and robust consumption.
 - A more expansionary stance of monetary policy and some expected impetus from fiscal policy.

EMERGING MARKET ECONOMIES IN 2019



Recommendations

- At the global level, the report stated that there is a need for greater multilateral cooperation to resolve trade conflicts, to address climate change and risks from cyber security, and to improve the effectiveness of international taxation.
- The following are the recommendations specific to India.
 - In terms of the policy, it has called for continued implementation of structural and financial sector reforms in order to lower public debt & aid growth.
 - The report emphasized enhancing governance of public sector banks and reforms to hiring and dismissal regulations that would incentivize job creation and absorb the country's large demographic divided.
 - Continued fiscal consolidation is needed to bring down public debt, strengthening goods and services tax compliance and lowering subsidies.

11. Global Financial Stability Report 2019

CONTEXT

Recently, the International Monetary Fund (IMF) released its biannual Global Financial Stability Report (GFSR) 2019. The GFSR provides an assessment of balance sheet vulnerabilities across financial and non – financial sectors in advanced and emerging market economies.

Highlights of the news

- The latest GFSR has introduced a way to quantify vulnerabilities in the financial system, encompassing six sectors: **corporate, households, governments, banks, insurance companies, and other financial institutions.**
- The report specifically focuses on corporate sector debt in advanced economies, the sovereign-financial sector nexus in the Euro area, China’s financial imbalances, and volatile portfolio flows to emerging markets and downside risks to the housing market.
- It recommends action by policymakers, including through the clear communication of any changes in their monetary policy outlook, the deployment and expansion of macro prudential tools, the stepping up of measures to repair public and private sector balance sheets, and the strengthening of emerging market resilience to foreign portfolio outflows.

Science & Technology

1. SCIENTISTS INSERT HUMAN BRAIN GENES INTO MONKEYS.

CONTEXT

Chinese scientists have implanted human brain genes into monkeys, in a study intended to provide insights into the unique evolution of human intelligence. Researchers inserted human intelligence.

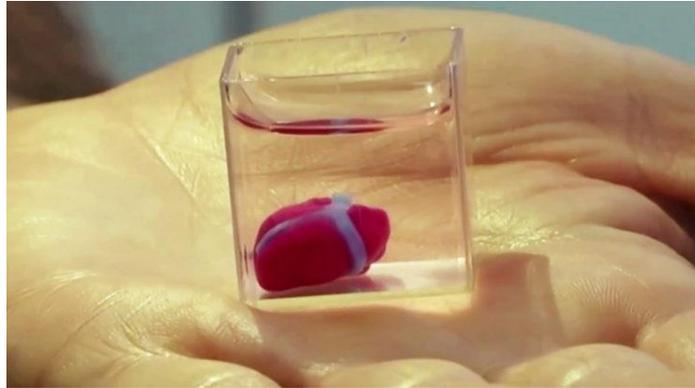
HIGHLIGHTS OF THE NEWS

- Researchers inserted human versions of MCPH1; a gene that scientists believe plays a role in the development of the human brain, into 11 rhesus monkeys.
- They found the monkey’s brains – like those of humans –took longer to develop, and the animals performed better in tests of short-term memory as well as reaction time compared to wild monkeys.
- The monkeys did not grow bigger brains than the control group.
- The test, the latest in a series of biomedical experiments in China to have fuelled medical ethics debates, has already drawn ethical concerns.
- It was conducted by researchers at the Kunming Institute of Zoology and the Chinese Academy of Sciences, working with US researchers at the University of North Carolina.

2. FIRST 3D PRINTED HEART HAS HUMAN CELLS, VESSELS.

CONTEXT

In a major medical breakthrough, scientists in Israel on 15 April 2019 created a 3D printed heart with human tissue and vessels which can help advance the possibilities for transplants.



BACKGROUND

- The researchers at the Tel Aviv University took a biopsy of fatty tissue from a patient that was then used in the development of the “ink” for the 3D print.
- The patient along with patches to regenerate defective hearts.

WAY AHEAD

Researchers are now looking to teach the printed hearts “to behave” like real ones as the cells currently are able to contract, but do not have the ability to pump yet. After this they plan to transplant these printed hearts into animal model

3. LONG RANGE CRUISE MISSILE NIRBHAY TEST FIRED

CONTEXT

Nirbhay, the long – range, sub – sonic, cruise missile was successfully tested with a sharper 'terrain hugging capability'.

HIGHLIGHTS OF THE NEWS



- The indigenously developed missile was manoeuvred at low altitudes of as less as 5 meter to a range of 2.5 km.
- The **Nirbhay missile** has a range of 700 km to 1,000 km.
- After its launch in typical missile style, it can be controlled in aircraft mode.

- Travelling at sub-sonic speeds of different Mach, the hit capacity is enhanced by control and by homing in on targets at different altitudes.
- It is the sixth launch, of which **three have been successful**.
- The missile has the capability to loiter and cruise at 0.7 Mach, at low altitudes.
- The mission achieved all the objectives from lift-off to the final splash.
- The guidance, control and navigations systems of the missile are configured around the **indigenously designed Ring Laser Gyroscope and MEMS based, Inertial Navigation System**.

4. "83 SUPERMASSIVE BLACK HOLES" DISCOVERED IN EARLY UNIVERSE.

CONTEXT

Astronomers have discovered 83 quasars powered by super massive black holes 13 billion light – years away from the Earth, from a time when the universe was less than 10 per cent of its present age.

BACKGROUND

It published in **The Astrophysical Journal**, increases the number of black holes known at that epoch considerably, and reveals, for the first time, how common they are early in the universe’s history. Previous studies were sensitive only to the very rare, most luminous quasars, and thus the most massive black holes.

HIGHLIGHTS OF THE NEWS

- It provides new insight into the effect of black holes on the physical state of gas in the early universe in its billion years.
- Super massive black holes, found at the centres of galaxies, can be millions or even billions of times more massive than the Sun.
- They are prevalent today, it is unclear when they first formed, and how many existed in the distant early universe.
- A super massive black hole becomes visible when gas accretes onto it, causing it to shine as a “quasar”.
- The new discoveries probe the population of fainter quasars, powered by black holes with masses comparable to most black holes seen in the present – day universe.

ABOUT THE RESEARCH

The team used data taken with “Hyper Supreme-Cam” (HSC) instrument, mounted on the Subaru Telescope of the National Astronomical Observatory of Japan, which is located on the summit of Maunakea in Hawaii.

They then carried out an intensive observational campaign to obtain spectra of those candidates, using three telescopes 1. The Subaru Telescope 2. The Gran Telescopio Canarias on the island of La Palma in the Canaries, Spain 3. The Gemini South Telescope in Chile.

- The survey revealed 83 previously unknown very distant quasars.

5. CHINA DEVELOPS WORLD'S FIRST ARMED AMPHIBIOUS DRONE BOAT.

CONTEXT

China has successfully tested the world's first armed amphibious drone boat built by Wuchang Shipbuilding Industry Group under China Shipbuilding Industry Corporation (CSIC), the drone ship is named "**Marine Lizard**".



HIGHLIGHTS OF THE NEWS

- Having a maximum operating range of 1,200 kms, the Marine Lizard can be remotely controlled via satellites.
- In ship form, the 12 – meter-long Marine Lizard is a trimaran propelled by a diesel – powered hydro jet can reach a maximum speed of 50 knots while maintaining stealth.
- When approaching land, the amphibious drone ship can release four continuous track units hidden under its belly, and travel at 20 kms and hour on land.
- The Marine Lizard's payloads include an electro-optical system and a radar system.
- In the weapon department, it is equipped with two machine guns and a vertical launching system for anti-ship and anti-aircraft missiles.
- It can autonomously sail, avoid obstacles and plan routes and also suitable for island assault operations as a swarm of such drone ships could lead an attack following the first wave of artillery and air strikes.

6. THE WORLD'S FIRST GENE- EDITED LIZARD

CONTEXT

For the first time, four lizards have been genetically modified using the CRISPER-Cas 9 gene editing tool.



HIGHLIGHTS OF THE NEWS

- Researchers from the University of Georgia (UGA) were able to target the pigmentation genes of *Anolis sagrei* lizards to create four albino offspring.
- This feat is particularly noteworthy because reptile embryos are very difficult to manipulate and work with given their soft shells and difficult to pinpoint fertilization.
- But the researchers were able to overcome these challenges and micro injects CRISPER proteins into multiple immature eggs or oocytes located in the ovaries of 21 *Anolis* lizards.
- The team specifically targeted the tyrosine's gene and successfully injected the gene editing solution into 146 oocytes.
- After just four weeks, four albino lizard offspring hatched from their eggs, and the team's efforts paid off.

CONCLUSION

Albinism is a trait inherited from both parents and in this study; the researchers found that the CRISPER protein targeted the tyrosine's protein from both the mother and father of the offspring which means that the CRISPER solution was active long after fertilization.

The researchers say that the results of their study could have far-reaching implications for future gene-editing research and also human genetics as the tyrosine's gene is necessary for some aspects of eye development.

7. ARTIFICIAL ATOMS CREATED FOR QUANTUM COMPUTING.

CONTEXT

Scientists, on 15 April 2019, created artificial atoms that generate single photons, and advance that may be a big step in efforts to develop all-optical quantum computing.

BACKGROUND

Artificial atoms were discovered three years ago in flakes of 2 D hexagonal boron nitride, a single insulating layer of alternating boron and nitrogen atoms in a lattice that is also known as white graphene.

Motivated by the observation that artificial atoms are frequently found near an edge, the searchers first created edges in the white graphene by drilling circles 500 nanometers wide and four nanometers deep. The devices were then annealed in oxygen at 850 degrees Celsius to remove carbon and other residual material and to activate the emitters.

Confocal microscopy revealed tiny spots of light coming from the drilled regions. Zooming in, scientists saw that the individual bright spots were emitting light at the lowest possible level – a single photon at a time.

HIGHLIGHTS OF THE NEWS

- The artificial atoms – which work in air and at room temperature ---were created by drilling holes into a thin two – dimensional sheet of hexagonal boron nitride with a gallium – focused on beam.

- Researchers are using the discovery to produce and use photons as sources of single photons and qubits in quantum photonic circuits.
- Traditional approaches for using atoms in quantum research have focused on capturing atoms or ions, and manipulating their spin with lasers so they exhibit quantum superposition.
 - The ability to be in a simultaneous combination of “off” and “on” states.
 - However, such work has required working in vacuum in extremely cold temperatures with sophisticated equipment.

WAY AHEAD

The individual photons conceivably could be used as tiny, ultra-sensitive thermometers, in quantum key distribution, or to transfer, store and process quantum information.

8. ARTIFICIAL INTELLIGENCE CAN TRACK NEURONS FASTER THAN HUMANS

CONTEXT

Scientists have developed an artificial intelligence (AI) based automated process that can track and map active neurons as accurately as humans can, in a fraction of the time.

BACKGROUND

- The technique, described in the journal Proceedings of the **National Academy of Sciences on 13 April 2019**, interprets video images, addressing a critical roadblock in neuron analysis.
- It allows researchers to rapidly gather and process neuronal signals for real-time behavioural studies, said researchers at Duke University in the US.

HIGHLIGHTS OF THE NEWS

- To measure neural activity, researchers typically use a process known as two – photon calcium imaging, which allows them to record the activity of individual **neurons** in the brains of live animals.
- These recordings enable researchers to track which neurons are firing, and how they potentially correspond to different behaviours.
- While these measurements are useful for behavioural studies, identifying individual neurons in the recordings is a painstaking process.
- Currently, the most accurate method requires a human analyst to circle every ‘spark’ they see in the recording, often requiring them to stop and rewind the video until the targeted neurons are identified and saved.

WAY AHEAD

- Investigators are often interested in identifying only a small subset of active neurons that overlap in different layers within the thousands of neurons that are imaged. This process, called segmentation, is fussy and slow.
- In contrast, a new open source automated algorithm can accurately identify and segment neurons in minutes.
- The advance is a critical step towards allowing neuroscientists to track neural activity in real time.

9. ANOTHER PLANET FOUND HIDING IN THE KEPLER 47.

CONTEXT

San Diego State University astronomers played a role in the recent discovery of a third planet within the Kepler -47 planetary system.

HIGHLIGHTS OF THE NEWS

- A team of researchers, led by astronomers from SDSU, on 16 April 2019 discovered a **new Neptune – size planet orbiting the system’s two suns** between two previously discovered planets.
- The planet, named **Kepler 47d**, was discovered using a method called, “transit method”. (The method measures a level of brightness to help detect masses)

Previously, the planet’s signal was too weak to detect. “We saw him of a third planet back in 2012, but with only one transit we needed more data to be sure,” SDSU astronomer said.



- Kepler – 47d is about seven times the size of Earth and takes 87 days to orbit around its suns. The entire Kepler -47 system itself is interesting as well.
- ***With two suns, it’s the only known*** multi – planet circumbinary system. The system is extremely compact and would fit inside the orbit of Earth.
- It’s located about 3340 light-years away in the direction of constellation Cygnus.

10. EMISAT SATELLITE.

CONTEXT

The ISRO has launched the EMISAT satellite on onboard the **PSLV-C45** from the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh.

BACKGROUND

- This was the first time when the PSLV has placed objects in three different orbits.
- The fourth stage was restarted and stopped twice to bring PSLV to the altitude of 507 km after EMISAT launch.
- At the fourth stage three experimental payloads were deployed :
 - **Automatic Identification System (AIS)** for Maritime satellite applications capturing messages transmitted from ships.
 - **Automatic Packet Repeating System (APRS) from AMSAT** (Radio Amateur Satellite Corporation), India – assisting amateur radio operators in tracking and monitoring position data.
 - **Advanced Retarding Potential Analyzer for ionospheric Studies (ARIS)** from Indian Institute of Space Science and Technology (IIST) – for the structural and compositional studies of the ionosphere.

HIGHLIGHTS OF THE NEWS

- The PSLV –C45 was also carrying 28 International nanosatellites.
- The flight of PSLV was also the longest mission of the PSLV, lasting around three hours.
- It was successfully placed in its intended **Sun-Synchronous Polar Orbit (SSPO)** of 748 km.
- It is all weather and all terrain condition satellite, which will allow it to work through clouds, rain, forest and coastal areas.
- EMISAT is an ELINT (Electronic Intelligence) satellite, which means it will have radar to **measure the electromagnetic spectrum** – so as to intercept and analyze radar signals, find their location, identify the hostile radars based on their Radio Frequency (RF) signature.
- This will be a vital tool for India when EMISAT along with the Airborne Warning and Control System (AWACS) can effectively locate, tackle and silence enemy radars, and secure Indian airspace.

Polar Orbit

- *A polar orbit travels north – south over the poles and takes approximately 90 minutes for a full revolution.*

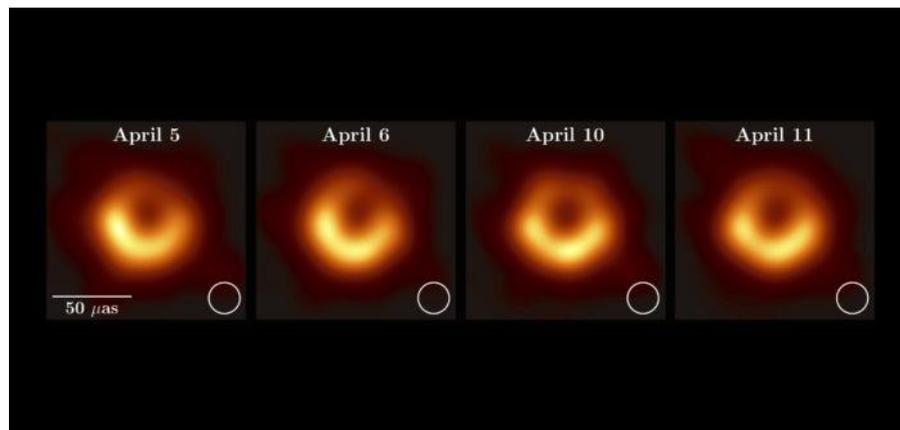
- *These orbits have an inclination near 90 degrees. This allows the satellite to see virtually every part of Earth as the Earth rotates underneath it.*
- *An orbit is called sun – synchronous when the angle between the line joining the center of the Earth and the satellite and the Sun is constant throughout the orbit.*

11. FIRST IMAGES OF A BLACKHOLE

CONTEXT

The scientists at **Event Horizon Telescope (EHT) Project** have released the first-ever image of a **Black Hole** (more precisely, of its shadow on April 10, 2019).

- The targeted black hole is located in the center of galaxy **Messier 87**, in the constellation **Virgo**. It is located about 35 million light- years away from earth.



Observations from the Event Horizon Telescope of the super massive black hole at the center of the elliptical galaxy M87, for four different days. (EHT Collaboration et al 2019)

What is a black hole?

- The term 'black hole' was coined in the mid-1960s by **American Physicist John Archibald Wheeler**.
- Black hole refers to a point in space where matter is so compressed as to create a gravity field from which even light cannot escape.
- It was theorized by Albert Einstein in 1915.

Event Horizon Telescope (EHT) Project

- EHT is an array of **8 radio telescopes (used to detect radio waves from space)** located in different parts of the world that EHT pick up the radiation emitted by particles in the galaxy heated to billion degrees as they revolve around the black hole close to the speed of light.

- It combines data from several Very – Long – Baseline Interferometry (VLBI) stations around Earth with angular resolution sufficient to observe the objects having size of black hole’s event horizon.

Black Holes & Dark Matter

An international research team has ruled out the possibility that primordial black holes (formed in the early age of the universe) might be the primary source of dark matter.

- The theory that primordial black holes are a source of dark matter was proposed by **Professor Stephen Hawking**.

What is Dark Matter?

- Dark matter, though never detected, is believed to be present in the entire universe, its existence presumed because a number of observable celestial phenomena could not be possible if the universe did not have much more matter than is seen.
- It is believed to make up more than **95% of the Universe**.
- Its gravitational force prevents stars in our Milky Way from flying apart.

Presence of Dark Matter in Universe.

- Laws of gravity expect us to see stars closer to the center of galaxies rotating faster than the stars on the edge.
- However, in most galaxies, the stars closer to the center and the stars at the edge of the galaxies take almost the same time one revolution.
- **This implied that something Invisible matter enveloping the galaxies was giving an extra push to the outer stars, speeding them up.** This entity is named as ‘Dark Matter’.
- The material is considered to be a ‘mater’ since it has gravitational attraction and it is ‘dark’ because it does not seem to interact with light (or any part of the electromagnetic spectrum).

Primordial Black Holes

- When the big bang hypothesis was proposed, two Soviet Physicists, Yakov Borisovich Zel’dovich and Igor Dmitriyevich Novikov, showed that at the initial instant of the big bang, the densities would have been very high at many points, resulting in the formation of small black holes.
- They were named ‘primordial black holes’.
- Stephen Hawking investigated them in 1971. He computed that the mass of the primordial black holes could range from as low as one – hundredth of a milligram to as high as more than the mass of Thousand Suns.

12. METEORITE SHEDS LIGHT ON THE SUN'S INFANT YEARS.

CONTEXT

By analyzing a piece of meteorite found in Kazakhstan in 1962, researchers have envisaged how the Sun behaved in its infancy.

Key findings

- Researchers found that **during initial years Sun was able to generated super flares** which were a million times stronger than the strongest solar flare ever recorded at the 1859 Carrington event.
- The **solar storm of 1859 (also known as the Carrington Event)** was a powerful geomagnetic storm during solar cycle 10 (1855-1867).
- A **solar flare is a sudden flash of increased brightness on the Sun**; sometimes they are also accompanied by a **Coronal Mass Ejection**.
- A coronal mass ejection (CME) is a significant release of plasma and accompanying magnetic field from the solar corona.
- Such super flares must have taken place 4.5 billion years ago when the Sun was barely forming.
- Researchers also inferred that irradiation by such super flares from the Sun is the **sources of elements like beryllium – 7**.
- **Among the Calcium – Aluminium – rich Inclusions (CAI)**. The CAIs are nearly 4.5 billion years old.

Asteroid

- These rocks are generally **found between Mars and Jupiter** in an orbit called the **asteroid belt**.

Comet

- It is a **chunk of ice and rock originating from the outer solar system**. Some of them occasionally get gravitationally pulled towards the inner solar system.
- When passing close to the Sun, **the comet warms and beings to release gases process called out gassing**.
- This produces a **visible atmosphere or coma, and sometimes also a tail**.

Meteoroid

- **It a space rock that's bigger than a dust grain but smaller than an asteroid**. The dividing line between asteroid and meteoroid is fuzzy, but generally, space rocks bigger than boulders are asteroids and smaller ones are meteoroids.

Meteor

- The streak of light seen when a space rock – an asteroid or a comet – enters the earth's atmospheres and starts burning up. It's the scientific synonym for 'shooting star'.

Meteorite

- If a meteor doesn't entirely burn up, a piece of space rock that lands on Earth is called a meteorite.

Bolides

- Astronomers use the term to describe a bright fireball from an incoming meteor; geologists use it as a catch – all term for a comet or an asteroid that hits the Earth.

13. UNIVERSE'S FIRST MOLECULE

CONTEXT

Scientists have detected the **most ancient type** of molecule in our universe in space for the first time ever.

Highlight in the news

- **Helium Hydride ion (HeH⁺)** was the first molecule that formed when, almost 14 billion years ago, the falling temperatures allowed recombination of the lighter elements (hydrogen, helium, deuterium and traces of lithium) produced in the Big Bang.
- Helium combined first with free electrons to form the first ever neutral atom, at that time hydrogen was still ionised or present in form of bare protons.
- Helium atoms combined with this hydrogen ion into the "helium hydride ion (HeH⁺)", the universe's first molecular bond.
- Once the universe cooled down, hydrogen atoms started to interact with helium hydride, creating molecular hydrogen, which set the **stage for star formation**.
- Despite its importance in the history of the early Universe, HeH⁺ has so far escaped detection in astrophysical nebulae-cloud of gas and dust in outer space.
- Helium hydride ion was detected roughly 3,000 light-years from Earth by NASA's **Stratospheric Observatory For Infrared Astronomy (SOFIA)**.
- The molecule was found in a **planetary nebula, NGC 7027**, which is the dusty remnant of a sun-like star.
- While helium hydride has been produced and tested in a laboratory setting, this discovery marks the first time that this molecule has been detected in space – which sheds light on the chemistry of the early universe.

Stratospheric Observatory For Infrared Astronomy (SOFIA)

- It is **Boeing 747SP jetliner** modified to carry a 100 – inch diameter telescope. It is a joint project of **NASA** and **the German Aerospace Centre**.
- It is flown at approx 45,000 feet, where its observations are not impacted by interference from Earth's atmosphere.

14. YOUNG SCIENTIST PROGRAMME (YUVIKA)

CONTEXT

The ISRO has launched a special programme for School Children called “Young Scientist Programme” or “YUva Vigyani KAryakaram” from this year.

HIGHLIGHTS OF THE NEWS

- The Programme is primarily aimed at imparting basic knowledge on Space Technology, Space Science and Space Applications to the younger ones with the intent of arousing their interest in the emerging areas of Space activities.
- The programme will be of two weeks duration during summer holidays (second half of May 2019) and the schedule will include invited talks, experience sharing by the eminent of arousing their interest in the merging areas of space activities.
- The programme will be of two weeks duration during summer holidays (second half of May 2019) and the schedule will include invited talks, experience sharing by the eminent scientists, facility and lab visits, exclusive sessions for discussion with experts, practical and feedback sessions.
- It is proposed to select 3 students each from each State/Union Territory to participate in this programme covering CBSE, ICSE and State syllabus.
- The selection is based on the 8th Standard academic performance and extracurricular activities.
- Students belonging to the rural area have been given special weightage in the selection criteria.

ENVIRONMENT AND ECOLOGY

1. OCEAN HEAT HITS RECORD HIGH: UNITED NATIONS

CONTEXT

Ocean heat hit a record high in 2018; the United Nations said on 28 March 2019, raising urgent new concerns about the threat global warming is posing to marine life.

BACKGROUND

The agency said the UN had data for heat content in the upper 700 metres (2,290 feet) of the ocean dating back to 1955). Last year also saw new heat records for the ocean's upper

2,000 metres, but data for that range only goes back to 2005. The previous records for both rangers were set in 2017. The year of 2018 saw new records for ocean heat content in the upper 700 metres,” a WMO statement

HIGHLIGHTS OF THE NEWS

- In its latest State of the Climate overview, the **World Meteorological Organization (WMO)** reaffirmed that the last four years had been the hottest on record – figures previously announced in provisional drafts of the flagship report.
- UN Secretary-General António Guterres described the latest findings as “another strong wake-up call” for governments, cities and businesses to take action.



António Guterres: Secretary-General of the United Nations

WAY AHEAD

- The United Nations is hosting a major summit on September 23 that is billed as a last – chance opportunity for leaders to tackle climate change, which Guterres has described as the defining issue of our time.
- About 93 percent of excess heat – trapped around the Earth by greenhouse gases that come from the burning of fossil fuels --- accumulates in the world’s oceans.
- Research showed that warming in the oceans is on pace with measurements of rising air temperature. Some models predict the temperature of the top 2,000 metres of the world’s oceans will rise nearly 0.8 degrees Celsius by the end of the century if nothing is done to reduce greenhouse gas emissions.
- Oceans are also not warming evenly across the planet. The WMO report said the highest rates of ocean warming are occurring in the southern ocean, where warming has also reached the deepest layers.

2. BLEACHING HITS WORLD'S SOUTHERNMOST CORAL REEF.

CONTEXT

The world’s southernmost coral reef has been hit by bleaching this summer. The corals off **Lord Howe Islands –some 600 kilometres offshore from Sydney—were affected by elevated temperatures this summer**, despite escaping severe bleaching that damaged the Great Barrier Reef in 2016 and 2017.

HIGHLIGHTS OF THE NEWS

- Bill Leggat of the University of Newcastle and other scientists from several Australian universities and the **US national Oceanic and Atmospheric Administration** found severe bleaching of up to 90 percent at Lord Howe’s inshore, shallow lagoon reefs.
- Deeper – water corals in the marine park, which contains species not found anywhere else and like the Barrier Reef is a World Heritage site, were still “looking quite healthy” having mostly escaped the bleaching.
- Increasing baseline temperatures caused by climate change, and local factors such as elevated temperatures in the area this summer, caused the bleaching to occur.

BLEACHING

Bleaching occurs when abnormal environmental conditions, such as warmer sea temperatures, cause corals to expel tiny photosynthetic algae, draining them of their colour. Corals can recover if the water temperature drops and the algae are able to decolonise them.

CONCLUSION

Swathes of coral at the Barrier Reef –the world’s largest living structure – died or were damaged in the unprecedented successive events in 2016 and 2017. ***Coral reefs make up less than one percent of Earth’s marine environment, but are home to an estimated 25 percent of ocean life, acting as nurseries for many species of fish.***

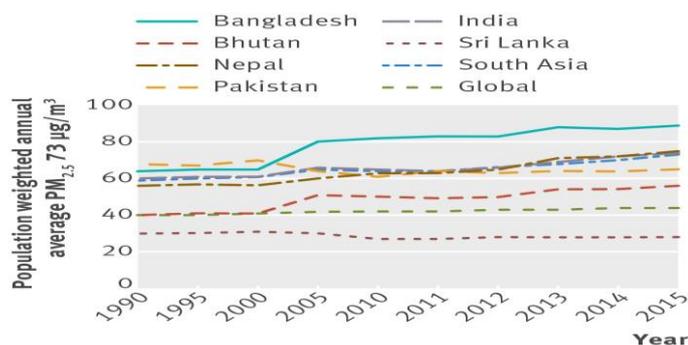
3. AIR POLLUTION SHORTENED LIFESPAN BY 30 MONTHS

CONTEXT

The current high level of air pollution has shortened the average lifespan of a South Asian child by two-and-a-half years while globally the reduction stands at 20 months.

BACKGROUND

State of Global Air 2019, published by Health Effects Institute (HEI). The study found that China and India together were responsible for over half of the total global attributable deaths, with each country witnessing over 1.2 million deaths from all air pollution in 2017. China has made initial progress, beginning to achieve air-pollution decline. Overall, long-term exposure to outdoor and indoor air pollution contributed to nearly 5 million deaths from stroke, diabetes, heart attack, lung cancer, and chronic lung disease in 2017.



HIGHLIGHTS OF THE NEWS

- The report describes that worldwide, air pollution was responsible for more deaths than many better – known risk factors such as malnutrition, alcohol abuse and physical inactivity.
- ***In India, air pollution is the third-highest cause of death among all health risks, ranking just above smoking;*** each year, more people globally die from air pollution related disease than from road traffic injuries or malaria.
- The South Asian region --- Bangladesh, India, Nepal and Pakistan --- led the world as the most pollution related deaths according to the report.
- The report also highlighted that nearly half of the world’s population – a total of 3.6 billion people – were exposed to household air pollution in 2017. Globally, there has been progress : the proportion of people cooking with solid fuels has declined as economies develop

WHY IN NEWS?

Meanwhile, for the first time, this year’s report included worldwide estimates of the effect of air pollution on life expectancy. Worldwide, air pollution reduced life expectancy by an average of 20 months in 2017, a global impact rivalling that of smoking; the means a child born of smoking ; this means a child born today will die 20 months sooner, on average, than would be expected without at pollution.

WAY AHEAD

The State of Global Air 2019 annual report and accompanying interactive website are designed and implemented by the Health Effects Institute in cooperation with the Institute of Health Effects Institute in cooperation with the Institute of Health Metrics and Evaluation (IHME) at the University of Washington, the University of British Columbia, and the University of Texas, Austin.

4. INDIA'S CARBON DIOXIDE EMISSIONS UP 5%.

CONTEXT

India emitted 2, 299 million tonnes of carbon dioxide in 2018, a 4.8% rise from last year, according to a report by the International Energy Agency (IEA) on March 26, 2019.

HIGHLIGHTS OF THE NEWS

- India’s emissions growth this year was higher than that of the United States and China, the two biggest emitters in the world, and this was primarily due to a rise in coal consumption.
- India’s per capita emissions were about 40% of the global average and contributed 7% to the global carbon dioxide burden. The United States, the largest emitter, was responsible for 14%.

- Global energy consumption in 2018 increased at nearly twice the average rate of growth since 2010, driven by a robust global economy and higher heating and cooling needs in some parts of the world.
- ***Demand for all fuels increased, led by natural gas, even as solar and wind posted double digit growth. Higher electricity demand was responsible for over half of the growth in energy needs. Energy efficiency saw lacklustre improvement.***

BACKGROUND

As per its commitments to the United Nations Framework Convention on Climate Change. India has promised to reduce the emissions intensity of its economy by 2030, compared to 2005 levels. It has also committed to having 40% of its energy from renewable sources by 2030 and, as part of this, installs 100 GW of solar power by 2022.

WAY AHEAD

The IEA report showed that India's energy intensity improvement declined 3% from last year even as its renewable energy installations increased 10.6% from last year. India says It will cost at least \$2. 5trillion (Rs. 15 trillion approx.) to implement its climate pledge, around 71% of the combined required spending for all developing country pledges.

5. INDONESIA THREATENS TO QUIT PARIS CLIMATE DEAL.

CONTEXT

Indonesia, on 27 March 2019, threatened to withdraw from the 2015 Paris climate agreement if the European Union goes ahead with a plan to phase out palm oil from transport fuel by 2030.

HIGHLIGHTS OF THE NEW

- The European Commission has concluded that palm oil cultivation results in deforestation. But the Indonesian government argues that palm requires far less land to produce oil compared to other crops.
- Palm cultivation is often blamed for deforestation and destroying the habitat of endangered animals such as orang-utans and Sumatran tigers.
- Under the Paris climate accord, Indonesia has committed to reducing its greenhouse gas emissions unconditionally by 29 percent and conditionally by 41 percent by 2030.
- Indonesia claims palm is being discriminated against by the EU to protect the market of European oils such as sunflower and rapeseed oils.

6. THE HUMP- BACKED MAHSEER IS NOW 'CRITICALLY ENDANGERED'.

CONTEXT

"The hump – backed mahseer" – a large freshwater fish also called the '**tiger of the water**' and found only in the Cauvery river basin (including Kerala's Pambar, Kabini and Bhavani rivers) – is now "Critically Endangered" : more threatened than the tiger is, as per the International Union for Conservation of **Nature's Red List of Threatened Species**.



IUCN CLASSIFY HUMP-BACKED MAHSEER AS CRITICALLY ENDANGERED

BACKGROUND

The fish is one of the 229 species added to the Red List last November ; this update also reveals that the threat status of 12 other Indian species, including great hornbills, has increased.

The inclusion of the mahseer in the Red List, an inventory of the conservation status of the world's species, was possible only once the fish got its **scientific name last June - 'Tor remadevii'**.

HIGHLIGHTS OF THE NEWS

- The team recognised 16 species of mahseer in India and Five other species have also made it to threatened categories : two wild orchids, the Arabian scad (a marine fish) and two wild coffee species found only in a few localities in the Western Ghats.
- 31 species that were already in the Red List have been down – listed (since threats are not as significant as earlier thought or due to conservation efforts), the threat status of 12 species has increased.
- The great hornbill (found in India and southeast Asia) was earlier categorised as “Near Threatened”. It is now “Vulnerable” due to high hunting pressure coupled with habitat loss and deforestation, while the wreathed hornbill has moved from “Least Concern’ to “Vulnerable”.

WAY AHEAD

Now, securing the future of the hump- backed mahseer would depend on the strong willingness and cooperation of a range of stakeholders in three states – Kerala, Tamil Nadu and Karnataka – in the Cauvery, one of India's most contested rivers.

7. 'ECO' TOILET ON MOUNT EVEREST.

CONTEXT

Climbers with pressing needs on Mount Everest will soon find an “eco-friendly” toilet at a Chinese campsite 7,028 metres above sea level in an ongoing campaign to deal with the peak's waste problem.



Climber traffic jams on Mount Everest

HIGHLIGHTS OF THE NEWS

- Decades of commercial mountaineering have turned Mount Everest into the world's highest rubbish dump.
- As an increasing number of big-spending mountaineers pay little attention to the ugly footprint they leave behind.
- Fluorescent tents, discarded climbing equipment, empty gas canisters and even human excrement pollute the well-trodden route to the summit of the 8,848-metre peak.

WAY AHEAD

During the climbing season this spring, a Chinese expedition company will add an "eco-friendly" loo at the higher campsite on the northern slope in Tibet. The toilet makes it easy to collect human waste produced by the climbers as there is a barrel with rubbish bags underneath the toilet. The waste will be collected and brought down the mountain. Similar facilities were installed at lower camps, including at the 5,200-metre north base camp, in previous years

8. ISLAND PROTECTION ZONE

CONTEXT

The Ministry of Environment, Forest and Climate Change (MoEFCC) has recently notified Island Protection Zone (IPZ), 2019 for Andaman and Nicobar Islands.

Highlights in news

- It allows eco-tourism projects up to 20 metres from the high tide line (HTL) in smaller islands like Baratang, Havelock and Car Nicobar, and up to 50 metres in larger ones.
- It also allows for eco-tourism activities like mangrove walks, tree huts and nature trails in Island Coastal Regulation Zone IA (classified as the most eco-sensitive region of the island which includes turtle nesting grounds, marshes, coral reefs etc).
- The notification further allows for the construction of roads, roads on stilts by reclaiming land in exceptional cases for defence installations, public utilities or strategic purposes in eco-sensitive zones.

- In case construction of such roads pass through mangroves, a minimum three time the mangrove area destroyed during the construction process shall be taken up for compensatory plantation of mangroves elsewhere.
- The new notification also allows a number of new activities in the inter-tidal zone between low Tide Line (LTL) and HTL which includes land reclamation and bunding for foreshore facilities like ports, harbours, and jetties, transfer of hazardous substances from ships to ports, manual mining of atomic minerals, and mining of sand for construction purposes in non-eco-sensitive sites.
- The legal changes in the IPZ are aligned with the NITI Aayog's proposal for holistic development in the Islands which is being taken forward under the guidance of the **Island Development Agency**.

Concerns

- The notification has brought the norms for Andaman and Nicobar at par with Coastal Regulation Zone (CRZ) norms for other Islands close to the mainland and backwater islands where a No Development Zone (NDZ) is only **20 metres** from HTL has been stipulated.

High Tide Line (HTL) is defined as line up to which highest high tide reaches in spring tides.

Low Tide Line (LTL) is the limit up to which the lowest low tide recedes during spring tide.

- Earlier, IPZ 2011 stipulated an NDZ of 200 meters from the HTL for all islands.
- The Changes can affect the fragile ecology of the region like marine biodiversity including corals and turtle nesting sites.

Island Development Agency (IDA)

- The Island Development Agency (IDA) was set up in 2017 for the holistic development of islands.
- The IDA has identified 10 islands for development which include 5 islands in Andaman & Nicobar Islands (Smith, Ross, Little Andaman, Long and Avis) and 5 in Lakshadweep (Minicoy, Bangaram, Cheriyam, Suheli and Thinnakara).
- The Union Home Minister is the Chairman of the Agency. Other members of the Agency include cabinet secretary, home secretary, secretary (environment, forests and climate change), secretary (tourism) and secretary (tribal welfare).

9. INDIA DENMARK ON OFF-SHORE WIND ENERGY

CONTEXT

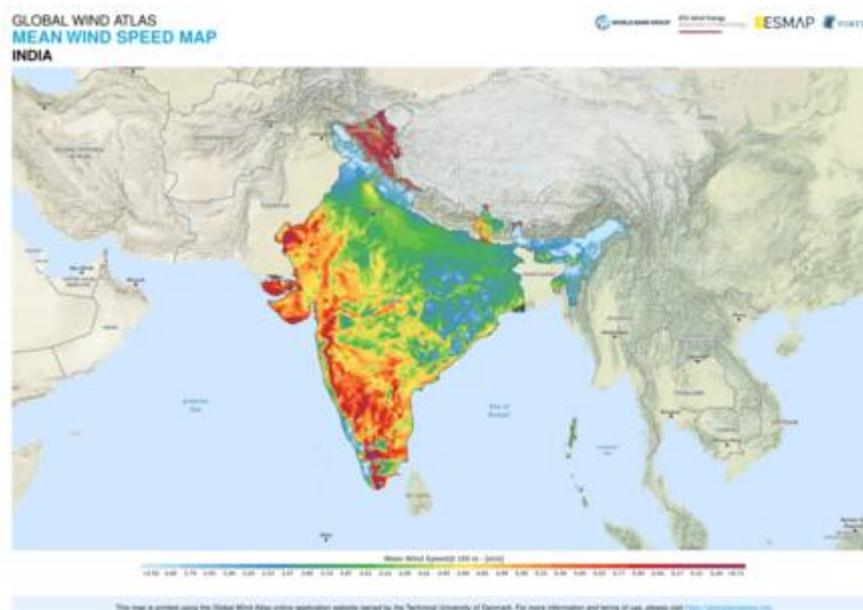
Recently, the Government has given its approval for a Cooperation Agreement between Ministry of new and Renewable Energy of India and Ministry for Energy, Utilities and Climate of the Kingdom of Denmark on strategic sector cooperation in the field of Renewable

Energy with a focus on **Off-shore Wind Energy** and a Letter of intent to establish and **Indo – Danish Centre of Excellence for renewable energy** in India.

Highlight in news

- The objective of the Cooperation Agreement is to promote cooperation between the two countries in the field of renewable energy with a special focus on off-shore wind.
- The areas of cooperation would include technical capacity building for management of off-shore wind projects, measures to develop and sustain a highly efficient wind industry, on-shore as well as off-shore, forecasting and scheduling of off-shore wind etc.
- The 'Indo – Danish Centre of Excellence in Integrated Renewable Power' would work on renewable energy resource assessments with a focus on the on-shore and off-shore wind; hybridisation of wind, solar, hydro and storage technologies; integration of renewable energy, testing and R & D ; and skill building.

Wind energy in India



- India has the 4th **largest installed capacity** in wind power after China, U.S and Germany. The total installed capacity of wind power in India as on March 2017 is around 32 GW.
- The potential of wind energy is concentrated in the states of – Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Telangana. Tamil Nadu has the highest Installed capacity in the country followed by Maharashtra and Gujarat.
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- As per the National Institute of Wind Energy (NIWE), India has wind energy potential of 302 GW at 100 – meter hub-height. India has targeted to achieve 60 GW of power from wind by 2022.
- India is implementing **National Off-shore Wind Energy Policy, 2015** with an objective to develop the off-shore wind energy in the Indian Exclusive Economic Zone (EEZ) along the Indian Coastline.

10. SUPREME COURT SUSPENDED ENVIRONMENT CLEARANCE FOR AIRPORT IN GOA

CONTEXT

The Supreme Court (SC) has suspended the Environmental Clearance (EC) granted for the development of Greenfield International Airport at Mopa in Goa.

Highlights in the news

- The SC cited procedural flaws in the grant of EC
 - People living in the proposed project – area were not consulted properly.
 - Non-disclosure of vital information in the application form for clearance and in Environment Impact Assessment (EIA) Report.
 - Expert Appraisal Committee (EAC) did not analyze the EIA report properly before approving the EC.
 - National Green Tribunal(NGT) did not carry out the merit review of the appeal made against the EC given to the Mopa Airport
- A phrase '**Environmental Rule of Law**' was coined by SC. The court said that every branch of governance and institutions across the country should strive to enforce environmental rule of law.
- Proper structures for environmental decision making find expression in the guarantee against arbitrary action and the affirmative duty of fair treatment under Article 14 (Right to Equality) of the Constitution.
- The health environment is the key to preserving the Right to Life as a constitutionally recognized value under Article 21 (Protection of Life and Personal Liberty) of the Constitution.

Environmental Rule of Law

- The environmental rule of law is based on four pillars of sustainable development – **economic, social, and environmental** and peace.
- It **integrates environmental needs with the essential elements of the rule of law** and provides the basis for improving environmental governance.

- It **highlights environmental sustainability by connecting it with fundamental rights** and obligations.
- It reflects **universal moral values and ethical norms of behaviour**, and it provides a foundation for environmental rights and obligations.
- Without environmental rule of law and the enforcement of legal rights and obligations, environmental governance may be arbitrary, that is, discretionary, subjective, and unpredictable.

11. IMD's Monsoon Forecast

CONTEXT

The Indian Meteorological Department (IMD) has released its Monsoon forecast.

Key points

- India is likely to have a **'near normal' Monsoon**. The monsoon seasonal (June to September) rainfall is likely to be 96% of the Long Period Average (LPA) with a model error of 5%. The LPA of the season rainfall over the country as a whole for the period 1951-2000 is 89 cm.
- Below normal is 90% while near normal is 96 to 104%. So 96% falls in both categories.
- IMD uses two models to make the monsoon forecast- Statistical Ensemble Forecasting System (SEFS) and the Climate Forecast System (CFS).
- The SEFS model has predicted 96% of LPA while the CFS model has predicted 94% of LPA which falls under the below normal category.
- Weak El Nino is likely to prevail during the Monsoon season with reduced intensity in the later part of the season.
- Another reason for expecting a near – normal monsoon this year is the neutral Indian Ocean Dipole (IOD) which may turn positive during the monsoon season.
- Overall, the country is expected to have well –distributed rainfall scenario during the 2019 monsoon season, which will be beneficial to farmers in the country during the ensuing Kharif season.

Statistical Ensemble Forecasting System (SEFS)

- SEFS uses five predictors. These predictors along with some equations are used by scientists to carry out statistical analysis to finally come out with a forecast.
- The Five predictors are North Atlantic Sea Surface Temperature; Equatorial South Indian Ocean Sea Surface Temperature; East Asia Mean Sea Level Pressure ; NW Europe Land Surface Air Temperature ; and Equatorial Pacific Warm Water Volume.
- The problem with this model is that it uses data from the past 100 years to come up with a forecast when many of the relationships between global climate factors have changed.

Climate Forecast System (CFS)

- The Climate Forecast System (CFS) is a model representing the global interaction between Earth's Oceans, land, and atmosphere.
- CFS uses the latest scientific approaches for taking in or assimilating, observations from data sources including surface observations, upper air balloon observations, aircraft observations, and satellite observations.

Indian Meteorological Department (IMD)

- The vision of India Meteorological Department is to provide efficient Weather and Climate Services for the safety of life and property and to contribute towards the National development.
- IMD was established in 1875. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology, seismology and allied Science.
- It functions under the Ministry of Earth Science.

Indian Ocean Dipole (IOD)

- IOD is a system of oscillating sea surface temperatures in which the western Indian Ocean becomes alternately warmer and then colder than the eastern part of the ocean.
- A positive IOD occurs when the sea surface temperatures are greater than normal in the Arabian Sea and less than normal in the tropical eastern Indian Ocean. When the reverse is the case, a negative IOD is said to have developed.
- A positive IOD leads to greater monsoon rainfall and more active (above normal rainfall) monsoon days while negative IOD leads to less rainfall and more monsoon break days (no rainfall).

12. AGREEMENT TO SAVE COASTAL WETLANDS.

CONTEXT

The Central Marine Fisheries Research Institute (CMFRI) and the Indian Space Research Organisation (ISRO) has signed a Memorandum of Understanding (MoU) to map, validate and protect smaller wetlands in coastal regions.

Highlights of the news

- It is an attempt to build resilience against the impact of climate change.
- MoU signed between the CMFRI and the space Applications Centre of ISRO Includes:
 - Identify and demarcate wetlands, and restore them through suitable livelihood options such as coastal aquaculture.
 - Develop a mobile app and a centralized web portal that will have a comprehensive database of wetlands that are smaller than 2.25 hectares in the country.
- The collaborative move is part of a national framework for fisheries and wetlands, developed recently by the National innovations in Climate Resilient Agriculture (NICRA) project of CMFRI.

National Innovations in Climate Resilient Agriculture (NICRA)

- National Innovations on Climate Resilient Agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in February 2011.
- The project aims to **enhance the resilience of Indian agriculture to climate change** and climate vulnerability through strategic research and technology demonstration.

- The research on adaptation and mitigation covers crops, livestock, fisheries, and natural resource management.

Central Marine Fisheries Research (CMFRI)

- The Central Marine Fisheries Research Institute was established by Government of India in 1947 under the Ministry of Agriculture and Farmers Welfare and later it joined the Indian Council of Agricultural Research (ICAR) in 1967.
- ICAR is the largest network of agricultural research and education institutes in the world function under the Department of Agricultural Research and Education, Ministry of Agriculture & Farmers Welfare.

13. RESILIENT CITIES ASIA- PACIFIC CONGRESS 2019.

CONTEXT

Recently, the fourth edition of Resilient Cities Asia-Pacific (RCAP) Congress was held in New Delhi. The first three were held in New Delhi. The first three were held in Thailand, Malaysia and Vietnam in 2015, 2016 and 2017 respectively.

Highlights of the news

- The 4th Resilient Cities Asia – Pacific Congress 2019 was organised by the International Council for Local Environmental Initiatives (ICLEI) – Local Governments for Sustainability.
- The Vice President of India highlighted the need to make sustainable solutions such as harvesting solar energy, enhancing green cover and water conservation an essential part of town planning.
- It offered cities and regions from Asia – Pacific a variety of innovative solutions that build resilience to climate change at the sub – national level.
- The event also offered a combination of high – level planning and technical sessions on the implementation and achievement of the Nationally Determined Contributions (NDCs) and the New Urban Agenda of 2016.
- Discussions were held on the need for localizing the global frameworks; ensuring that targets that go along with Sustainable Development Goals consider local contexts, challenges, and realities.
- Some of the challenges discussed at the session were lack of continuous engagement with relevant stakeholders; limited engagement of the private sector. Lack of infrastructure to mitigate vulnerability etc.

Objectives of the conference

- To share and learn about good urban resilience practise.
- To provide local governments with exposure and access to tools and processes that help mainstream resilience considerations into policy and practice.
- To bring together funders and cities and facilitate the match – making between available financial resources and current cities’ needs.

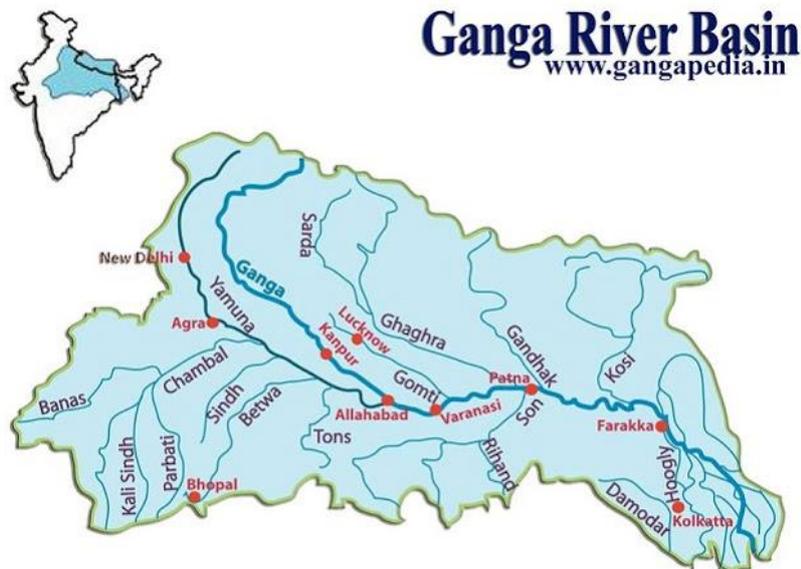
Resilient Cities Asia-Pacific

- Resilient Cities is the annual global platform for urban resilience and climate change adaptation where dialogues are conducted to forge partnerships, with the ultimate goal of identifying implementable solutions and creating lasting impacts for cities in the region.
- It was launched in 2010.

14. ANTIBACTERIAL PROPERTIES OF GANGA

CONTEXT

The study, 'Assessment of Water Quality and Sediment to Understand Special Properties of River Ganga,' was commissioned by the Ministry of Water Resources, River Development & Ganga Rejuvenation and conducted by the Nagpur – based National Environmental Engineering and Research Institute (NEERI).



Sources: State boundaries (ML Infomap 2009), basin boundaries, rivers and catchments (IWM 2009), other administrative layers (World Bank 2010), water quality monitoring stations data (Central Pollution Control Board 2010).

Highlight of the news

- The study found that the Ganga river water contains a significantly higher proportion of organisms with antibacterial properties.
- Other Indian rivers also contain these organisms but the Ganga – particularly in its upper Himalayan stretches – has more of them.
- As part of the assessment, five pathogenic species of bacteria (*Escherichia*, *Enterobacter*, *Salmonellia*, *Shigella*, and *Vibrio*) were selected and isolated from the Ganga, Yamuna and

the Narmada and their numbers compared with the bacteriophages present in the river water.

- In the river Ganga, the bacteriophages were detected to be approximately 3 times more in proportion than bacterial isolates.
- Samples drawn from the Ganga contained almost 1,100 kinds of bacteriophages, and proportionally there were less than 200 species detected in the samples obtained from the Yamuna and the Narmada.
- The antibacterial properties varied widely along the length of the river. For instance, the stretch from Gomukh to Tehri and 33% more bacteriophages isolates than from Mana to Haridwar and Bijnor to Varanasi. In the stretch from Patna to Gangasagar, the bacteriophages were only 60% of that in the Gomukh to Tehri stretch.
- The bacteriophages isolated from Ganga and decoded for its lysine gene and cloned to produce lysine protein at IIT Roorkee holds great potential as an antibacterial pharmaceutical.
 - Lysine is an amino acid (building block of protein).

15. DECLINE IN USABLE GROUNDWATER

CONTEXT

A team from the Indian Institute of Technology (IIT) Kharagpur and Athabasca University, Canada, has compiled the first estimates of Usable Groundwater Storage (UGWS) at the state-level across India using both in situ and satellite-based measurements.

Highlights of the news

- More than 85% of the groundwater usage in India is linked with irrigation abstraction practices.
- The estimates show rapid depletion of usable groundwater storage during 2005-2013 in most of the eastern parts and the northern parts of the country like Assam, Bihar, Punjab and Haryana.
- The southern and western Indian states like Andhra Pradesh, Maharashtra, Gujarat, Chattisgarh have shown replenishing usable groundwater storage trends.
- Factors behind ground water storage trends.
 - **Lock of an organised water supply** leads to increased dependence on groundwater.
 - Depletion in groundwater is positively linked with the **increased cropping practice of water – intensive crops**.
 - **Overexploitation of the groundwater:** About 85% of rural drinking water needs and 65% of irrigation needs and 50% of urban drinking water and industrial needs are fulfilled from the groundwater.

Implications of groundwater depletion

- Rapid depletion in UGWS would accelerate the **decline in food production** and **availability of drinking water**, two of the prime goals under UN Sustainable Development Goals 2030. This would affect more than 120 million people in the Gangetic states.
- **Summer groundwater drought** that some states are facing, would intensify in recent future years and will become severe to very severe by 2050, with the possibility of spreading over all the seasons.
- **Decline in the flow in the adjoining rivers**, including Ganga, thus also **impacting river – aquifer interaction**.

16. ENERGY TRANSITION REPORT

CONTEXT

World Economic Forum has recently published 'Fostering Effective Energy Transition 2019 Report'. The report contains the **Energy Transition Index (ETI)**, which compares the energy sectors of 115 countries and analyses their readiness for the energy transition.

Highlights of news

- Energy systems have globally become less affordable and less environmentally sustainable than they were five years ago.
- Access to energy has improved and currently, less than 1 billion people are living without access to electricity.
- The biggest challenge facing attempts to future proof global energy demands is the lack of readiness among the world's largest emitters.
- Environmental sustainability of energy production has improved marginally, indicating a general lack of substantive progress.
- India is amongst the countries with high pollution levels and has a relatively high CO₂ emission intensity in its energy system.
- Despite this, India has made significant progress in improving energy access in recent years.
- India has made fast progress towards universal electrification due to strong political commitment, a stable policy regime, use of grid expansion and decentralized generation sources, and a supportive environment for investment in infrastructure.

Energy Transition Index



- Energy transition Index ranks countries on how well they are able to balance energy security and access with environmental sustainability and affordability.
- **Sweden** is at the top followed by Switzerland and Norway in the top three.
- **India** has moved up two places from last year to rank **76th** on a global energy transition index.
- India is the second best in BRICS bloc of emerging economies, with Brazil being the best at 46th place globally.

17. GLOBAL DEAL FOR NATURE

CONTEXT

A group of scientists have proposed a bold new science policy to reverse the sixth mass extinction, called as Global Deal for Nature (GDN).

Highlights of the news

- The Global Deal for Nature is a time – bound, science based plan to save the diversity and abundance of life on Earth.
- It analyzed how much of the planet we need to maintain to ensure that our ecosystems continue to harbour an abundance of species, and provide services essential for human life, including carbon sequestration.
- The **three overarching goals of the GDN** are :
 - To protect biodiversity by conserving at least 30% of the earth’s surface by 2030.
 - Mitigate climate change by conserving the earth’s natural carbon storehouse; and reduce major threats.
 - As a complement to the protection targets, GDN offers policy recommendations for reducing the threats that exert pressure on the natural world; such as :
 - Slowing and stopping the clearing of intact natural habitats for agriculture, directing cropland to lands that have already been degraded, and focusing on reducing foods waste.
 - Putting in place proactive approaches to govern roads, dams and energy development projects.
 - Managing fisheries according to scientific targets.
 - Reducing plastic and chemical pollution, which harms the air, water, land and species on which we depend.
- GDN estimates that the cost of nature conservation measures could be \$100 billion per year. Current spending on conservation is less than 10% of that.

DEFENCE

1. DHANUSH ARTILLERY GUNS

CONTEXT

Recently, the Ordnance Factory Board (OFB) has handed over the first batch of six indigenously built Dhanush Artillery guns to the Army.

Highlight in the news

- Dhanush is an **upgraded version of the Swedish 155-mm Bofors howitzers**, which India procured in the mid – 1980s.
- It is a 155 –mm, 45 – calibre gun with a maximum range of 40km in salvo mode (simultaneous discharge of artillery). It can be deployed in both deserts and mountains.
- The gun is fitted with inertial navigation system with Global Positioning System – (GPS) based gun recording and auto-laying, an enhanced tactical computer for onboard ballistic

computations, an onboard muzzle velocity recording, an automated gun sighting system equipped with camera, thermal imaging and laser range finder.

- It has achieved indigenization to the extent of about 81% and by the end of 2019, the indigenization level of the gun will go up to 91%

“Dhanush” is also a surface-to-surface short range nuclear capable ballistic missile with a strike range of 350 kms developed by the Defence Research and Development Organisation (DRDO)

2. VIRTUAL REALITY CENTRE OF INDIAN NAVY

CONTEXT

Recently, Chief of Naval Staff Admiral Sunil Lanba inaugurated the first ‘**state-of-the-art**’ **Virtual Reality Centre (VRC)** at the Directorate of Naval Design (Surface Ship Group), New Delhi.

- This center would provide a major boost to the Indigenous warship design capabilities of the Indian Navy.
- It will also provide impetus to self-reliance and greater fillip to warship construction under “Make in India” initiative of the Indian government.
- **Augmented Reality (AR)** : An enhanced version of reality where lived direct or indirect views of physical real – world environments are augmented with superimposed computer generated images over a user’s view of the real-world, thus enhancing one’s current perception of reality.
- **Virtual Reality (VR)** : **It can be referred** to as immersive multimedia or computer – simulated reality which replicates an environment that simulates a physical presence in places in the real world or an imagined world, allowing the user to interact in that world.
- **Mixed reality (MR)** : It can be referred to as **hybrid reality that is the merging of real and virtual worlds to produce new environments and visualizations where physical and digital objects co-exist and interact in real time.**
- **Extended reality**: Extended Reality (XR) is an **umbrella term** encapsulating **Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR)**, and everything in between.

3. NIRBHAY MISSILE

CONTEXT

Recently, Defence Research & Development Organisation (DRDO) has successfully conducted the sixth flight test of “Nirbhay” cruise missile from the Integrated Test Range (ITR), Chandipur Odisha.

KEY HIGHLIGHTS

- Nirbhay is an indigenously designed & developed **Long Range Sub-Sonic Cruise Missile** that can be armed with a 200 – 300 – kilogram warhead.
- This nuclear – capable, solid fuel, missile has the capability to cruise at 0.7 Mach, and at altitudes as low as 100 m.
- The missile can be deployed from multiple platforms and has a **range of 1000 km.**

HEALTH

1. ENZYME TO ARREST BACTERIA CELL GROWTH DISCOVERED.

CONTEXT

Recently, the scientists at the **Centre for Cellular & Molecular Biology (CCMB)** have come up with a way to **inhibit the multiplication of bacteria even before the cell wall begins to grow.**

HIGHLIGHT IN THE NEWS

- They have discovered a new enzyme “Murein EndopetidiaseK” which helps in **breaking cell walls of bacteria.** The finding is significant for it offers a potential for a **new drug delivery route to arrest** the anti-bacterial resistance through existing antibiotic drugs.
- Regular antibiotics target the machinery that creates the bacterial cell wall – a mesh-like structure that is made up of cross-linked sugars and peptides.
- However, this experiment shows how to garget cell-wall formation at the beginning itself, earlier than when the present set of antibiotics act.
- With rapid rise of antibiotic resistance, researchers across the world are exploring new ways to target bacteria. In this context, the new findings can play a crucial role in fighting the battle against antibiotic resistance.

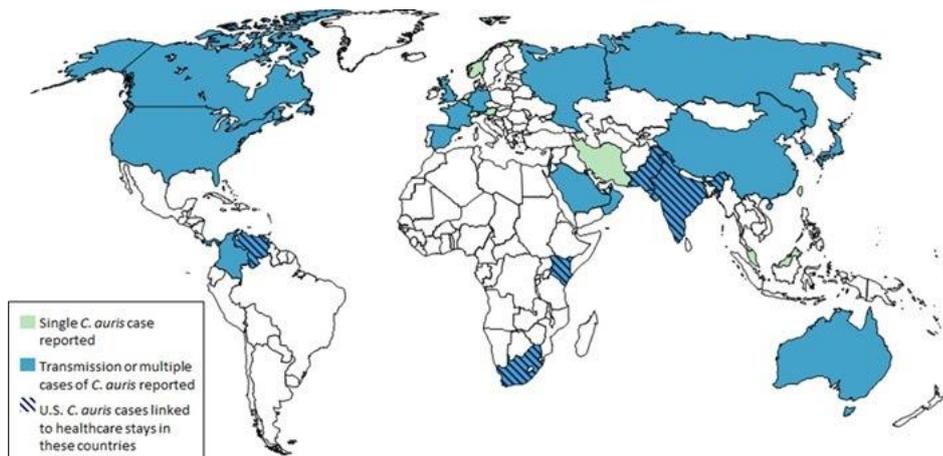
Centre for Cellular & Molecular Biology (CCMB)

- It is a premier research organization which conducts high quality basic research and training in frontier areas of modern biology, and promotes centralized national facilities for new and modern techniques in the interdisciplinary areas of biology.
- It is located in **Hyderabad and operates under the aegis of the “Council of Scientific and Industrial Research” (CSIR).**
- It is designated as “**Center of Excellence**” by the **Global Molecular and Cell Biology Network, UNESCO**

2. DRUG RESISTANT FUNGAL INFECTION

CONTEXT

A fungal infection resistance to drugs is being detected in patients across the hospitals in the world.



HIGHLIGHT IN THE NEWS

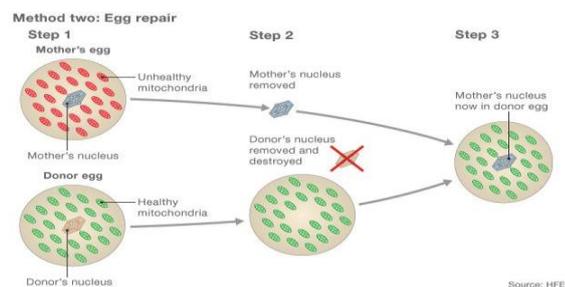
- The fungus is named as **Candida Auris (C.Auris)**, which attacks people with weakened immune systems.

- It is quietly spreading across the globe. Over the past five years, it has been detected in US, Venezuela, Spain, Britain, India, Pakistan, and South Africa.
- *C. Auris* is impervious to major antifungal medications, making it a new example of one of the world's most intractable health threats, the rise of drug-resistant infections.
- The symptoms of infection are fever, aches, and fatigue. Nearly half of patients who contract *C. Auris* **die within 90 days**, according to the Centre for Disease Control USA.

3. THREE- PERSON BABY

CONTEXT

A team of Greek and Spanish doctors has produced a baby (in Crece) using **genetic material from two women and a man**.



- The technique used is called as '**Maternal Spindle Transfer**' in which maternal DNA is put into the egg of a donor woman, which is then, fertilized using the father's sperm.
- The procedure was developed to help existing IVF treatments in which mothers have **mitochondrial diseases**.
- Mitochondrial diseases are long – term, genetic, often inherited disorders that occur when mitochondria fail to produce enough for the body to function properly.

4. ANTIBIOGRAMSCOPE DEVICE

CONTEXT

A team of professors at Anna University, Chennai has developed a device called AntibioGramscope to deal with **antibiotic resistance**.

HIGHLIGHT IN THE NEWS

- The team developed a liquid **Antibiotic Sensitivity Testing (AST) medium**. To this a commercially available fluorescent molecule is added along with the sample (body fluid).
- This is transferred to the antibioGramscope's micro wells which are coated with one type of antibiotic.
- When bacteria grow in the medium, it produces a compound called **erucamide**, which binds to the fluorescent molecule, turning off its fluorescence.
- This means if we see fluorescence in some micro wells, those antibiotics are effective in killing the bacteria.
- No fluorescence means the bacteria is growing despite the antibiotic which highlights antibiotic resistance.
- AntibioGramscope has **cleared validation tests** at National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited microbiological lab.

National Accreditation Board for Testing and Calibration Laboratories (NABL)

- **NABL is a Constituent Board of Quality Council of India.**
- **NABL** has been established with the objective of providing Government, Industry Associations and Industry in general with a scheme of Conformity Assessment Body's accreditation which involves third-party assessment of the technical competence of testing including medical and calibration laboratories, proficiency testing providers and reference material producers.
- Quality Council of India (QCI) is a non-profit autonomous society registered under Societies Registration Act, 1860.
- The aim of QCI is to establish an accreditation structure in the country and to spread quality movement in India by undertaking a National Quality Campaign.
-

5. SCIENTISTS RESTORE BRAIN CELL ACTIVITY

CONTEXT

In a radical experiment, scientists have **restored brain circulation** and some **cell activity in pigs' brains**, hours after the animals died in a slaughter house.

HIGHLIGHT IN THE NEWS

- The results, though done in pigs and not humans, **challenge the long-held view** that, after death, brain cells undergo sudden and irreversible damage.
- It was held that the brain cannot long survive without blood. Within seconds, oxygen supplies deplete, electrical activity fades, and unconsciousness sets in. If blood flow is not restored, within minutes, neurons start to die in a rapid, irreversible, and ultimately fatal wave.
- In the study, the researchers developed a novel system for studying intact, post-mortem brains, dubbed as **BrainEx**.
- BrainEx is a **network of pumps that pipe** a synthetic solution – a substitute for blood – into the brain's arteries at a normal body temperature.
- The brains were placed in the BrainEx system four hours after the pigs' death, and were allowed to "perfuse" with the synthetic blood substitute for 6 hours.
- During this time, the BrainEx system not only preserved brain cell structure and reduced cell death, but also restored some cellular activity.
- For example, some cells were metabolically active, meaning they used glucose and oxygen and produced carbon dioxide. Other cells reacted with an inflammatory response when stimulated with certain molecules.
- In contrast, the brains that were not treated with BrainEx rapidly decomposed.

Ethical concerns

- Although scientists are a long way from being able to restore brain function in people with severe brain injuries. If some restoration of brain activity is possible, then the **definition of brain death** will need to change.
- More guidelines are required around the ethical issues raised by the study, which raises long – standing assumptions about what makes an animal – or a human- alive
- One concern is also of '**how to detect consciousnesses** and how long systems like BrainEx should be allowed to run.

Significance

- The work could provide scientists with new ways of studying the brain, allowing them to examine functions in the entire, intact brain in a way that haven't been possible before.

- However, the researchers stressed that they did not observe any kind of activity in the pigs' brains that would be needed for normal brain function or things like awareness or consciousness.
- The new technology opens up **opportunities to examine complex cell and circuit connections of brain** and functions that are lost when specimens are preserved in other ways.
- The work also could stimulate research on ways to promote brain recovery after loss of blood flow to the brain, such as during a heart attack.

6. BUBBLE BOY DISEASE

CONTEXT

As per the recent study, U.S. scientists used 'HIV' in making a gene therapy that cured eight infants of "**bubble boy**" disease. The study details how scientists turned the enemy 'HIV virus' into a saviour, altering it so it couldn't cause disease and then using it to deliver a gene that babies with "bubble boy" disease lacked.

HIGHLIGHT IN THE NEWS

- Bubble Boy Disease, also known as **Severe Combined Immunodeficiency Syndrome (SCID)** is caused by a genetic flaw that keeps the bone marrow from making effective versions of blood cells that comprise an immune system.
- It affects 1 in 2, 00,000 newborns, almost exclusively males. Without treatment, it often kills in the first year or two of life.
- The nickname '**bubble boy disease**' has come from a famous case in the 1970s - a Texas boy with SCID, lived for 12 years in a protective plastic bubble for isolation from germs.
- A bone marrow transplant from a genetically matched sibling can cure SCID, but most people lack a suitable donor and transplants are risky too.
- Doctors think **gene therapy** could be a solution. It involves removing some of a patient's blood cells, using the modified HIV to insert the missing gene, and returning the cells to the body.

7. WORLD'S FIRST MALARIA VACCINE

CONTEXT

The world first malaria vaccine "**RTS, S/AS01**" has been rolled out in Malawi, Africa for children of age under two.

HIGHLIGHTS IN THE NEWS

- **RTS,S/AS01, trade name Mosquirix**, is an injectable vaccine targeting **P. falciparum**, the most prevalent malaria strain in Africa.
- It is the first and only vaccine to show partial protection in young children. In clinical trials, the vaccine was found to prevent approximately 4 in 10 malaria cases, including 3 in 10 cases of life-threatening severe malaria.
- The WHO-coordinated pilot programmes is a collaborative effort with Governments of Ghana, Kenya and Malawi and a range of in – country and international partners, including **PATH**, a non – profit organization, and GSK, the vaccine developer and manufacturer, which is donating up to 10 million vaccine doses for this pilot.
- **PATH** is an international non-profit team of innovators which advises & partners with public institutions, businesses, grassroots groups, & investors to tackle the world's tightest global health problems, including malaria.
- The malaria vaccine pilot aims to reach about 360,000 children per year across the three countries.
- Recently, the World Bank released "World Malaria Report, 2018", according to which Malaria occurs in 91 countries but about 90% of the cases and deaths are in sub – Saharan Africa.

Working of vaccine

- The vaccine aims to trigger the immune system to defend against the first stages of malaria when the P. falciparum parasite enters the human host's bloodstream through a mosquito bite and infects liver cells.
- The vaccine is designed to prevent the parasite from infecting the liver, where it can mature, multiply, re-enter the bloodstream, and infect red blood cells, which can lead to disease symptoms.

Malaria in India

India ranks very high in the list of countries with a serious malaria burden. In 2018, 3,99,134 cases of malaria and 85 deaths due to the disease were reported in the country, according to data from the National Vector Borne Disease Control Programme.

MISCELLANEOUS

1. CLOUD HONEYPOTS

CONTEXT

According to a report by Sophos (an IT security company) "Exposed: Cyber attacks on Cloud Honey pots", over five million attacks were attempted on the global network of **honeypots**.

- Cybercriminals attempted attacks on a **Mumbai Cloud server honeypot** more than 678,000 times in a month, which was second to Ohio in the US that recorded more than 950,000 login attempts.

What is a Honeypot?

- A honey pot is a system **intended to mimic likely targets of** cyber attackers for security researchers to monitor cybercriminal behaviour.
- It is used to trap attackers into thinking that they have penetrated a network, allowing time for defenders to analyze their threat parameters and generate appropriate threat indicators to block an impending attack.

2. NEW HUMAN ANCESTOR SPECIES FOUND

CONTEXT

Scientists have identified a new human ancestor's species previously unknown. It has been named as **Homo Luzonensis**.

HIGHLIGHT IN THE NEWS

- Homo Luzonensis is classified as a **separate species** on the basis of 13 bones and teeth from two adults and one child found in a cave on the island of **Luzon in the Philippines**.
- The Homo Luzonensis were around 3-4 feet tall and lived on the island of Luzon at least **50,000 to 67,000 years ago**.
- It is not a direct ancestor of modern day humans, but rather a distant ancient relative.

Significance

- The fossils have an **unexpected mix of both ancient and more advanced traits of hominine** (the group consisting of modern humans, extinct human species and all our immediate ancestors).
- The **teeth's small sizes and relatively simple shapes point to a more modern species**. Foot bone resembles those of the ancient australopithecines.
- The discovery also adds to a growing body of evidence that human evolution is not as linear as was once thought.

- There are some questions which are unanswered such as how the species arrived on the island and who its ancestors were.

3. MISSION DELHI

CONTEXT

Recently, Indian Council of Medical Research (ICMR) launched “**Mission DELHI**” (**Delhi Emergency Life Heart-Attack Initiative**) project.

- In the pilot phase, it will cater only to people living in a three-kilometre radius of the All India Institute of Medical Sciences (AIIMS).
- The project aims to reduce the mortality from a serious type of heart attack called **ST-Elevation Myocardial Infarction (STEMI)**, wherein one of the heart’s major arteries, supplying oxygen-rich blood to the heart muscle, gets completely blocked.
- It aims to reduce the time it takes for people with a serious heart attack to receive clot-busting medicine.

HISTORY ART AND CULTURE

1. 100 YEARS OF ROWLATT SATYAGRAHA & JALLIANWALA BAGH MASSACRE

CONTEXT

April 2019 marks the **100 years anniversary of Rowlatt Satyagraha** and the Jallianwala Bagh Massacre.

Rowlatt Satyagraha

- In response to the British government enacting the Anarchical and Revolutionary Crimes Act of 1919, popularly known as the **Rowlatt Act**, Gandhiji called for a countrywide campaign against it.
- This Act was passed on the recommendations of Sedition Committee chaired by Sir Sidney Rowlatt.
- The Act gave the government enormous powers to repress political activities and allowed detention of political prisoners without trial for two years.

Response to Gandhi’s call

- Mahatma Gandhi wanted non-violent civil disobedience against such unjust laws, which would start with a **hartal on 6 April 1919**.
- But before it could be launched, there were large-scale violent, anti-British demonstrations in Calcutta, Bombay, Delhi, Ahmadabad, etc.
- Especially in Punjab, the situation became explosive due to wartime repression, forcible recruitments, and ravages of disease.
- In towns across the North and West India, life came to a standstill, as shops shut down and schools closed in response to the bandh call.
- The Satyagraha lost momentum with the Jallianwala Bagh Massacre on 13th April 1919.

Jallianwala Bagh Massacre

- On April 9, 1919, two nationalist leaders, **Saifuddin Kitchlew** and **Dr. Satyapal**, were arrested by the British officials without any provocation except that they had addressed protest meetings, and taken to some unknown destination.
- This caused resentment among the Indian protestors who came out in thousands on April 10 to show their solidarity with their leaders.

- Soon the protests turned violent because the police resorted to firing in which some of the protestors were killed. To curb any future protests government put martial law in place and law and order in Punjab was handed over to **Brigadier – General Dyer**.
- On **13th April, Baisakhi day**, a large crowd of people mostly from neighbouring villages, unaware of the prohibitory orders in the Amritsar gathered in the Jallianwala Bagh.
- Brigadier-General Dyer arrived on the scene with his men. The troops surrounded the gathering under orders from general Dyer and blocked the only exit point and opened fire on the unarmed crowd killing more than 1000 men, women, and children.

Hunter Commission

- On October 14, 1919, the Government of India announced the formation of the **Disorders Inquiry Committee** to investigate the Jallianwala Bagh shooting.
- The committee was commonly known as **Hunter Commission** after the name of chairman, Lord William Hunter. It also had Indian members.
- In the final report submitted in March 1920, the **committee unanimously condemned Dyer's actions**.
- However, the Hunter Committee **did not impose any penal or disciplinary action against action against General Dyer**.

Nationalist response

- Rabindranath Tagore renounced his knighthood in protest.
- Mahatma Gandhi gave up the title of Kaiser-i-Hind, bestowed by the British for his work during the Boer War.
- Gandhi was overwhelmed by the atmosphere of total violence and withdrew the movement on April 18, 1919.
- The Indian National Congress (INC) appointed its own non-official committee that included Motilal Nehru, C.R. Das, Abbas Tyabji, M.R. Jayakar, and Gandhi to look into the shootings.
- They criticized Dyer's act as inhuman and also said that there was no justification in the introduction of the martial law in Punjab.

British apology

- Britain has never officially apologized for the massacre.
- The Labour Party in Britain has been asking for a formal apology saying that those who lost their lives in the massacre deserve a full, clear and unequivocal apology for what took place.
- Recently, British Prime Minister Theresa May described the Jallianwala Bagh massacre in Amritsar as a "shameful scar" on British Indian history but stopped short of a formal apology.

2. ALEXANDER STATUE IN ATHENS

CONTEXT

Recently, a bronze statue of **Alexander the Great** has been installed in central Athens, Greece. Three decades after it was finished by **Yannis Pappas**, one of the greatest Greek sculptors of the 20th century.

About Alexander

- In 326 BCE, Alexander invaded India, after crossing the river Indus he advanced towards Taxila.
- He then challenged **king Porus**, ruler of the kingdom between the rivers Jhelum and Chenab.
- The Indians were defeated near Jhelum River in the fierce **battle of Hydaspes**.
- Alexander captured Porus and, like the other local rulers he had defeated, allowed him to continue to govern his territory.
- Alexander remained in India for **19 months (326-325 BCE)**, which were full of fighting and in July 325 BCE Alexander and his army returned westward for home.

3. WORLD HERITAGE DAY

CONTEXT

Every year, **April 18** is celebrated as World Heritage Day. In 1982, International Council on Monuments and Sites (ICOMOS) observed April 18 as the International Day for Monuments and Sites. UNESCO approved it the following year.

HIGHLIGHT IN THE NEWS

- The theme for the year's celebration is '**Rural Landscapes**', which is related to the theme of the 2019 ICOMOS Scientific Symposium on Rural heritage that will take place in Marrakesh, Morocco in October.
- This year's International Day for Monuments and Sites offers the opportunity for national and international scientific committees to raise awareness about the relevance of rural landscapes and the challenges that encompass their conservation.
- In the ICOMOS "Principles concerning rural landscapes as heritage", rural landscapes are defined as "**terrestrial and aquatic used for the production of food and other renewable natural resources, via agriculture, animal husbandry, fishing, forestry, hunting, and extraction of other resources, such as salt.**"
- Rural landscapes are multifunctional resources. At the same time, all rural areas have **cultural meanings** attributed to them by people and communities: **all rural areas are landscapes**".

Related Information

The International Council on Monuments and Sites (ICOMOS)

ICOMOS is the only **global non-government organization (headquartered in Paris)**, which is dedicated to promoting the application of theory, methodology, and scientific techniques to the conservation of the architectural and archaeological heritage.

United Nations Educational, Scientific and Cultural Organization (UNESCO) and World Heritage Sites

- Formed in 1945, it is a specialized agency of the United Nations (UN) based in Paris.
- It seeks to build peace through international cooperation in Education, Science and Culture.
- As of January 2019, it has 193 member states.
- UNESCO selects landmarks or areas around the world which are of cultural, historic or scientific significance, known as **World Heritage Sites**.
- A UNESCO **World Heritage** site can be any place such as a forest, lake, building, island, mountain, monument, desert, complex or a city; which has a special physical or cultural significance. There are currently 1,092 sites on this list, of which 37 are in India.
- In India, out of 37, 29 are Cultural properties, 7 are Natural properties and 1 is named as mixed.
- **Khangchendzonga National Park** is the only World Heritage site in India which is categorized as **Mixed**.

4. MAHAVIR JAYANTI

- 17th April 2019 marked the occasion of 'Mahavir Jayanti'.
- It is one of the most auspicious festivals in the Jain community.
- This day marks the **birth of Vardhamana Mahavira**, who was the 24th and the last Tirthankara who succeeded the 23rd Tirthankara, Parshvanatha.
- The idol of Mahavira is carried out on a chariot, in a procession called *rath yatra*. On the way, 'stavans' or Jain prayers are recited. The statues of the Lord Mahavira are given a ceremonial bath called **abhisheka**.

Jainism

- The word Jaina comes from the term **Jina, meaning conqueror**.
- Jainism attaches utmost importance to ahimsa or non-violence. It preaches **5 mahavratas (the 5 great vows)** :

- i. Ahimsa (Non-violence)
 - ii. Satya (Truth)
 - iii. Asteya or Acharya (Non –staling)
 - iv. Aparigraha (Non-attachment/Non-possession)
 - v. Brahmacharya (Celibacy/Chastity)
- Among the 5 teachings, the Brahmacharya (Celibacy/Chastity) was added by Mahavira.
 - **The three jewels or Triratna** of Jainism include **Samyak Darshana (right faith), Samyak Gyana (right knowledge) and Samyak Charitra (right conduct)**.
 - Jainism is a **religion of self-help**. There are no gods or spiritual beings that will help human beings. It does not condemn the Varna system.
 - In later times, it got divided into two sects: **Shvetambaras (white – clad)** under **Sthalabahu** and **Digambaras (sky-clad)** under the leadership of **Bhadrababhu**.
 - The important idea in Jainism is that the entire world is animated: even stones, rocks, and water have life. Non-injury to living beings, especially to humans, animals, plants, and insects, is central to Jaina philosophy.
 - According to Jaina teachings, the cycle of birth and rebirth is shaped through **karma**. Asceticism and penance are required to free oneself from the cycle of karma and achieve the **liberation of the soul**.
 - The practice of **“Santhara”** is also a part of Jainism. It is the ritual of fasting unto death. Swetambara Jains call it Santhara whereas Digambaras call it **Sallekhana**

Lord Mahavira

Mahavir was **born to King Siddartha of Kundagrama** and Queen Trishala, a Lichchhavi princess in the year **540 BC** in the **Vajji kingdom**, identical with modern day Vaishali in Bihar. Mahavira belonged to the **Ikshvaku dynasty**. Lord Mahavir was named as **Vardhamana**, which means **“one who grows”**.

He abandoned the wordly life at the age of 30 and attained ‘kaivalya’ or omniscience at the **age of 42**. It is believed that the Mahavira passed away and attained nirvana (liberation from the cycle of birth and death) at the age of 72 in 468 BC at a place called **Pavapuri** near modern Rajgir in Bihar.

5. KONYAK DANCE

CONTEXT

Recently, the Guinness World Records has acknowledged Konyak dance as record holder for the “largest traditional dance”.

HIGHLIGHT IN THE NEWS

- Around 4,700 Konyak Naga women, in their colourful traditional attire came together on April 5, 2019, in an attempt to set a Guinness World Record for the “Largest Traditional Konyak Dance”.
- In their attempt, Konyak people danced to the beats of traditional instruments and sang a ceremonial song for five minutes and one second.

- The programme was organised at Mon (Nagaland) during the **Aoleang Monyu festival** of the Konyak tribe which is celebrated every year in the first week of April to welcome the spring.

Konyak tribe is one of the 16 Naga tribes and people of this community live mainly in the Mon district of Nagaland, India. They are recognized among other Naga by their tattoos, which they have all over their face and hands. The Konyak language belongs to the Northern Naga sub branch of the Sal subfamily of Sino – Tibetan.

6. BATTLE OF KANGLA TONGBI

CONTEXT

The platinum jubilee of the Battle of Kangla Tongbi was commemorated on 07 April 2019 by Army Ordnance Corps at Kangla Tongbi War Memorial near Imphal.

Highlight in the news

- The Battle of Kangla Tongbi, was fought by Ordnance personnel of 221 Advance Ordnance Depot (AOD) on the night of 6/7 April 1944 against the advancing Japanese forces.
- The position of 221 AOD was not at all sound from a tactical point of view. It was exposed to the enemy from all sides.
- For this act of gallantry, Major Boys was awarded the Military Cross (MC), Conductor Panken, the Military Medal (MM) and Hav/Clerk Store Basant Singh, the Indian Distinguished Service Medal (IDSM).

SOCIAL ISSUES

1. THE SHAPE OF AN URBAN EMPLOYMENT GUARANTEE

CONTEXT

India is in the midst of a massive job crisis especially Indian cities and towns as per leaked Periodic Labour Force Survey (PLFS) report of the National Sample Survey Office (NSSO).

HIGHLIGHT IN THE NEWS

- As per the report, unemployment rate in India has reached 45-year high (6.1%) in 2017-18 affecting India's cities and towns aggravatingly.
- Aside from unemployment, low wages and precarity continue to be widespread along with having majority of the population working in the informal sector.
- As per Census 2011, India has 4,041 cities and towns with an Urban Local Body (ULB) in the form of a Municipal Corporation, Municipal Council or Nagar Panchayat.
- However, many programmes have been launched to transform urban area, but most Urban Local Bodies are struggling to carry out basic functions because of a lack of financial and human capacity.
- Further, with increasing unchecked urbanisation, they are facing more challenges due to the degradation of **urban ecological commons**.

- To propel the economic engine of the country, there is a need to promote the sustainable development of India's small and medium towns.

An idea of Urban Employment Guarantee Programme

In the context of the present employment crises, it is worthwhile to consider introducing an **employment guarantee programme** in urban areas. Urban informal workers with limited formal education would undertake public works such as building and maintenance of roads, footpaths and bridges for a guaranteed 100 days in a year, at Rs. 500 a day. Such a programme would give urban residents a statutory right to work and thereby ensure the right to life guaranteed under Article 21 of the Constitution.

Along with addressing the concerns of underemployment and unemployment, such a programme can bring in much – needed public investment in towns to improve the quality of urban infrastructure and services, restoring urban commons, skilling urban youth and increasing the capacity of ULBs. Another novel aspect is the creation of a skilling and apprenticeship programme for unemployed youth with higher education to assist with administrative functions in municipal offices, government schools, or public health centres, and for the monitoring, measurement, or evaluation of environmental parameters.

A new set of “green jobs” which include the creation, restoration/ rejuvenation, and maintenance of urban commons such as green spaces and parks, forested or woody areas, degraded or waste land, and water bodies, should also be created. In Madhya Pradesh, government has launched the “YUva Swabhiman Yojana” which provides employment for both skilled and unskilled workers among urban youth.

National Sample Survey Office (NSSO)

- The National Sample Survey Office (NSSO), formerly called the National Sample Survey Organisation is the largest organisation in India conducting periodic socio-economic surveys on All India basis.
- It comes under the Ministry of Statistics and Programme Implementation (MoSPI).

Periodic Labour Force Survey (PLFS)

- It was launched in 2017 which provide quarterly labour and employment data for urban India and annual data for rural India.
- This survey superseded the earlier system where such data was available only every five years.
- The data for the survey was collected by the NSSO between July 2017 and June 2018 – and is the first official survey at the country's employment situation after demonetization.
- The final report is yet to be put in the public domain.

Way forward

- Both State and Central governments must treat towns as “engines of growth” for the economy rather than spaces where thousands toil to make a living.
- This programme should be administered by the ULB in a participatory manner by involving ward committees.
- An urban employment guarantee programme will not only improve incomes of workers but will also have multiplier effects on the economy.
- It will boost local demand in small towns, improve public infrastructure and services, spur entrepreneurship, build skills of workers and create a shared sense of public goods.

2. INDIA VS CHINA IN SCHOOL EDUCATION

CONTEXT

India has three times more school than China, but that’s not translating into better education system, according to new study recently released by NITI Aayog.

HIGHLIGHT IN THE NEWS

- Today India has 3-4 times more schools than China but most of the country’s schools are performing dismally.
- Though in the past decade, many initiatives have been introduced to speed up the reach of education to the masses but India seems to be heading towards only achieving the target of quantitative reach rather than qualitative reach.
- Despite years of efforts and changing syllabuses, teacher trainings as well as students assessments, the situation has not improved due to structural flaws.
- India today suffers from the twin challenges of “unviable sub-scale schools” and a “severe shortage of teachers” which makes in-school interventions only marginally fruitful.



Problems with India’s education system

- **Number of Schools:** India has adopted the strategy of building schools near every habitation, resulting in a proliferation of schools with tiny population and inadequate resources.
- As a result of increase only in the quantitative parameter in case of schools, around 1.5 crores Indian students study under unviable conditions.
- **Shortage of Teacher:** Teacher vacancies have compounded the problem. The country today has a shortage of more than 10 lakh teachers.

- Moreover, the teachers that do exist are inadequately distributed; there is more teachers – student ratio in urban areas than the case with rural areas.
- Apart from academic work, teachers are also engaged in managing midday meals, conducting surveys and in administrative and election duties.
- **Low Learning Levels:** Annual Status of Education Reports (ASER) found that nearly half of class 5 children cannot read a class 2 text. Dropout rates increase as children move up. Around 30% enrolled in class 1 graduate from class 12. Teachers aren't knowledgeable enough, also curriculum lacks relevance, particularly at the secondary level.
- **Core Academic Institutions:** State Councils of Educational Research and Training (SCERT) and District Institutes of Education and Training (DIETs) – are understaffed and skills like curriculum design analysis are often missing.

Recommendations

- **Consolidating several such schools within a short distance of one another**, and providing transport and allowances. School consolidation, pioneered in states like Rajasthan and Jharkhand, has already reaped rich dividends.
- **Move teachers from surplus to deficit schools**, restructuring complicating teacher cadres, and increased investment in teacher recruitment. Madhya Pradesh has undertaken an online teacher rationalization process, moving nearly 10,000 teachers from surplus to deficit schools.
- **Move away from just completing the syllabus to focusing on the competencies students have mastered.** Students should be taught based on their learning levels rather than grades. Extra time should be carved out to bridge the learning gaps.
- **Reconsider vocational education in secondary education.**
- Institution like SCERTs and DIETs should be filled with people having relevant skill set through competitive process along with having stringent annual performance review mechanism.
- There is a need of automating some system like maintaining academic register, real-time data monitoring of school performance assessment, etc.

State Council of Educational Research and Training (SCERT)

SCERT is a counter part of NCERT in the State. It oversees the work done in the academic wing of the School Education Board in the area of curriculum renewal and development of textbooks.

District Institute of Education and Training (DIETs)

It is responsible for providing pre-service, in service, education to elementary school teachers, non-formal and adult-education in the district. It is the third district level system for the qualitative improvement of education in addition to National and state level agencies like NCERT, SCERTs, etc.

Way forward

Truly transforming public education system requires implementation of above recommendations as well as bold measures like changing the way we manage public finances and making education budget more flexible. It will need political will and coming together of bureaucracy, civil society and public sector.

ETHICS

1. ETHICS DURING ELECTIONS

With the election process for the 17th Lok Sabha underway, the ethical aspect of political parties, leaders and the act of voting has again gained attention in public discourse.

Conduct as political parties and leaders

- **Politics is the art of organising society**, not the technique of power making and party organising. To realise the true essence of democracy, politics has to be anti-populist and anti-elitist. To go with the populist view often translates into mobocracy.
- The history of modern India shows that political parties have been subservient to the masses and the masses have followed party leaders without questioning. But some political figures like Gandhiji had the **courage to turn against popular sentiment**. His sharp reaction against the Chauri Chaura incident was an expression of his rejection of mobocracy.
- In matters of vital importance, **leaders must act contrary to the mass opinion** if it does not commend itself to their reason. Gandhiji considered contempt for civic virtue as a betrayal of the spirit of democracy. For him, democratic governance – unlike party politics, which always tends towards unexamined and obedient masses – was based on the maturity of citizens.
- During an electoral process in order to gain attention of the masses political leaders often resort to language and behaviour which is demeaning, derogatory and opposed to the spirit of a civilised society. It is akin to keeping values and virtues aside for the sake of political gains.

Conduct as voters

- A puzzling and pervasive trait among humans is that we often judge others with a different yardstick than with which we judge ourselves. **Our self – perception is often at odds with others** i.e. we often think others are wrong and we are right in our beliefs and opinions. For example, during elections, the upper classes perceive that poorer citizens vote only to get benefits such as cash and consumer goods.
- Bad choices at the polls can result in unjust laws, needless wars, and calamitous economic policies. To vote is a **duty of voting for the best person**, namely, the best political representative who will govern well and not to vote for money or as a vote bank. The cash for votes practice makes voting a transaction and defeats the ultimate purpose of elections which is to improve the well being of the society.
- The act of voting is inherent with an ethical duty, not just a constitutional one. It is duty of having to act not for individual benefit, such as money or ideology, but for the benefit of the larger society. It is a recognition that a democratic action like voting is primarily for the good of **something larger than one's self interests**.

Ethical Dilemma

You are heading a department that is notorious for its inefficiency and callousness. You find that the main cause of the poor state of affairs is the indiscipline of a section of employees, who do not

work themselves and also disrupt the working of others. You first warned the troublemakers to mend their ways. When the warning had little effect, you issued a show cause notice to them. As a retaliatory measure, these troublemakers instigated a woman employee amongst them to file a complaint of sexual harassment against you. They threaten you not take any action otherwise they will ruin your reputation further by publicising the matter in media. What will you do?

Arguments against taking the action: To deal with the issue of callousness and inefficiency and to check its spread needs a **well – thought out approach** instead of one that seeks to gain immediate results. Getting entangled in the sexual harassment case will lead to loss of stature, causing **distrust among others** and one may not believe in the authenticity of complaints against the employees. Thus, the official should **work silently in the background**, collect incontrovertible evidences and gather ample support from other employees to deal with the troublemakers.

Arguments in favour of taking the action: To **bow under the threat** will not only embolden the attitude of the troublemakers but also **discourage the other honest employees**. It will nurture a **business as usual approach** which will not be good for the public service in the long run. Inefficiency of a government department ultimately impacts the society as a whole. So, a public servant should aim for the **greater common good**. However, with respect to the charge of sexual harassment, the official should refer it to an internal complaints committee to reach at a fair resolution

SPORTS

1. ASIAN ATHLETICS CHAMPIONSHIPS 2019.

CONTEXT

The 2019 Asian Athletics Championships was the 23rd edition of the event. It was held in April 2019 at the Khalifa International Stadium in Doha, Qatar.



HIGHLIGHTS IN NEWS

- India's first gold came from **Gomathi Marimuthu** who won the women's 800m.
- **Shivpal Singh** took the silver with an impressive second – round effort in Javelin throw.
- **M.P. Jabir** took the men's 400 m hurdles bronze while **Saritaben Gayakwad** bagged the women's hurdles bronze.
- **Dutee Chand** broke her own National record in the women's 100 m.
- **Avinash Sable** won silver at the men's 3000m steeple chase.

- **Gavit Murli Kumar** took the bronze in the men's 10,000 m five seconds faster than his best clocked.

2. ISSF RIFLE/PISTOL WORLD CUP 2019.

CONTEXT

The ISSF World Cup Rifle/Pistol 2019 edition was held in Beijing, China. With its four medals (3 gold and 1 silver medals) India topped medals tally ahead of hosts China (2 gold, 2 silver, 1 bronze), who won five medals in total.

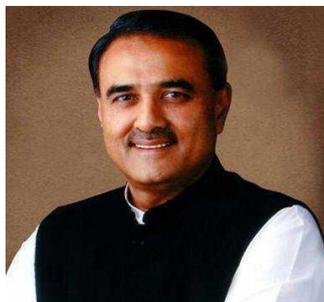
- India topped the chart for second consecutive ISSF World Cup, third time in last two years. In last edition of Shooting World Cup held in New Delhi, India jointly topped standings with Hungary.
- With this win India has now secured a total of five 2020 Tokyo Olympic quotas places.
- **Saurabh Chaudhary** and **Manu Bhaker** won gold in 10 m Air Pistol Mixed Team Pistol event.
- **Anjum Moudgil** and **Divyansh Singh Panwar** won gold in 10 m Air Rifle Mixed Team competition.
- **Divyansh Singh Panwar** won India's first individual medal by winning silver in men's 10 m Air Rifle.
- India's third gold was won by **Abhishek Verma** in men's 10m Air Pistol event.

3. WISDEN CRICKETER'S ALMANACK

- **Virat Kohil** and **Smriti Mandhana** clinched the 'Leading Cricketer of Year' honors.
- Smriti Mandhana was adjudged 'Women's Cricketer of the Year' as well as the 'Woman's ODI Player of the Year' by the ICC, while Virat Kohli won the Cricketer of the Year award besides finishing as the top batsman in Tests

4. FIFA COUNCIL.

- All India Football Federation President Praful Patel has been elected as a **FIFA** Council member. He is the first Indian to enter the prestigious panel.



Praful Patel

IN NEWS

APPOINTMENTS/RETIREMENTS

Vikram Kirloskar has become the new President of the Confederation of Indian Industry (CII).

Confederation of Indian Industry (CII)

- Founded in 1895, CII is a non-government, not-for-profit, industry-led and industry – managed organization, playing a proactive role in India’s development process.
- The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil Society, through advisory and consultative processes.

DEMISE

Sydney Brenner

Noble Prize winner biologist Sydney Brenner has passed away. The biologist helped decipher the genetic code and his research on a roundworm sparked a new field of human disease research. He got Nobel prize in medicine in 2002 for his contribution to the work unravelling how genes control cell division.



AWARDS

‘God fathers of AI’ Win Turing Award

Three computer scientists who laid the foundations for many of the recent advances in Artificial Intelligence (AI) were honoured with this year’s Turing Award, considered the field’s highest accolade.



- **Geoff Hinton**, an emeritus professor at the University of Toronto and a senior researcher at Alphabet Inc.’s Google Brain, **Yann LeCun**, a professor at New York University and the chief AI scientist at Facebook Inc., and **Yoshua Bengio**, a professor at the University of Montreal as well as co-founder of AI Company Element AI inc., will share this year’s award.

Turing Award

- The ACM A.M. Turing Award is an annual prize given by the **Association for Computing Machinery (ACM)** to individuals selected for contributions “of lasting and major technical importance to the computer field”.
- The Turing Award is generally recognized as the highest distinction in computer science and the “Nobel Prize of computing”.
- The award is named after Alan Turing, a British mathematician and reader in mathematics at the University of Manchester.
- The first recipient, in 1966, was Alan Perlis, of Carnegie Mellon University. The first female recipient was Frances E. Allen of IBM in 2006.

Association for Computing Machinery (ACM)

- The ACM is an umbrella organization for academic and scholarly interests in computer science. Its motto is “Advancing Computing as a Science & Profession”.
- The ACM was founded in 1947 under the name Eastern Association for Computing Machinery, which was changed the following year to the Association for Computing Machinery, and is the world’s largest scientific and educational computing society.
- The ACM is a non – profit professional membership group, with nearly 100,000 members as of 2019. Its headquarters are in New York City.

The Order of Zayed

The United Arab Emirates (UAE) has awarded Prime Minister Narendra Modi the country’s highest civilian award, ‘the Order of Zayed’. The honour came in recognition of the PM’s leadership to develop the strategic partnership between India and the UAE.