

WEEKLY CURRENT AFFAIRS MAGAZINE for



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Success is born of action...

Topic 1: RESPOND PROGRAMME

Importance for Prelims: Science & tech



Indian Institute of Technology, Delhi aforesaid that the Indian house analysis Organisation (ISRO) has proclaimed that it'll support eight joint analysis comes mooted by the house Technology Cell (STC), IIT-Delhi.

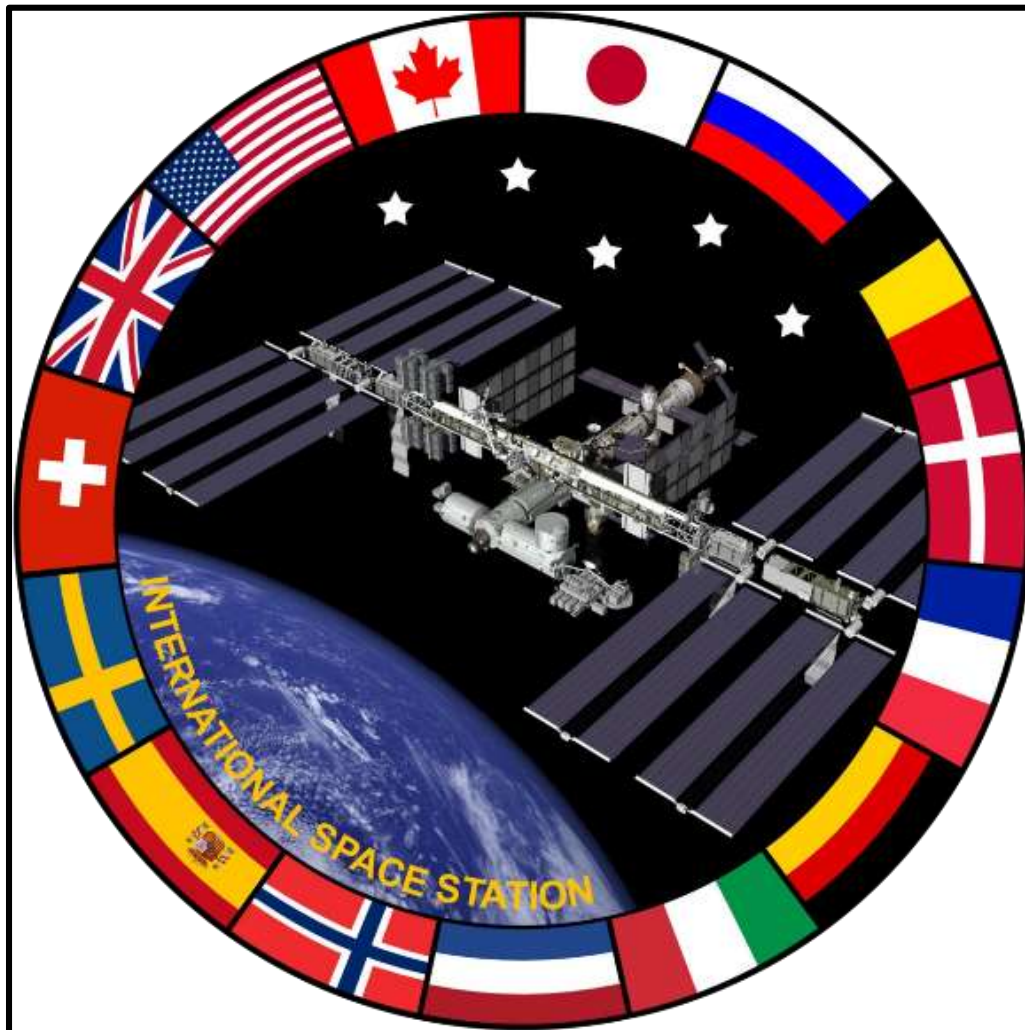
- The ISRO can support eight joint analysis comes mooted by the house Technology Cell (STC), Indian Institute of Technology (IIT) Delhi.
- The comes are coordinated by ISRO scientists at the house Applications Centre (SAC), the Liquid Propulsion Systems Centre (LPSC), the Semiconductor Laboratory (SCL) and also the Vikram Sarabhai house Centre (VSSC).

RESPOND Programme of ISRO

- Under RESPOND, comes within the advanced square measures of connection to house programme are inspired to be obsessed by premiere universities/academic establishments.
- ISRO helps the educational establishments to ascertain the mandatory technical facilities and conjointly give fellowships to analysers to figure on leading edge research topics.
- ISRO provides funding to tutorial establishments in Asian country for conducting analysis and development activities associated with house Science, house Technology and house Applications.

Topic 2: INTERNATIONAL SPACE STATION (ISS) PROGRAMME

Importance for Prelims: Science & tech



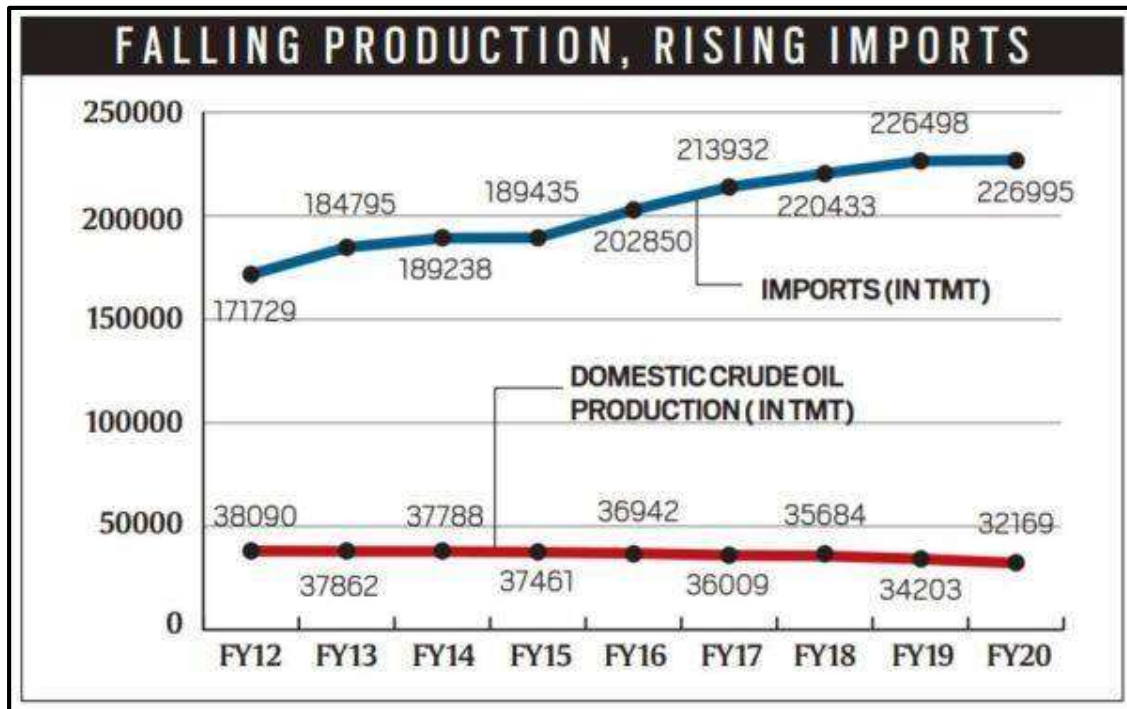
Russia's space agency said it hoped to launch its own orbital station in 2025 as Moscow considers retreating from the International satellite programme to travel it alone.

- Roscosmos chief Dmitry Rogozin said work had begun on the primary module of a replacement station, when officers warned that Russia was considering withdrawal from the ISS, one of the few in samples of cooperation with the West.
- The announcement came with tensions soaring with the West.

- Launched in 1998 and involving Russia, the U.S., Canada, Japan, and therefore the European area Agency, the ISS is one amongst the foremost bold international collaborations in human history.
- Russia's Deputy Prime Minister Yury Borisov said in recent days that Moscow was considering whether or not to depart the ISS programme from 2025 due to the station's age. Roscosmos said that a choice on quitting the ISS had not however been created.
- Russia lost its monopoly for manned flights to the ISS last year when the primary in mission of U.S. company area X.
- Despite its much-lauded history — Russia this month marked the sixtieth day of remembrance of Yuri Alekseyevich Gagarin turning into the primary person in orbit — the country's area programme has struggled in recent years as president Putin is a lot of fascinated by military technology than area exploration.

Topic 3. FALLING GAS & OIL PRODUCTION

Importance for Prelims: Economy



India's fossil fuel and gas production are falling systematically since 2011-12 with Covid-19 connected delays area unit among the key reasons cited by producers behind lower production.

Reasons for falling oil and gas production

- The consultants have noted that the majority of India's fossil fuel and gas production comes from ageing wells that became less productive over time.
- There was no less difficult oil and gas on the market in Republic of India and producers would have to be compelled to invest in extracting oil and gas victimisation technologically intensive suggests that from harder fields like ultra-deep water fields.
- The consultants noted that the interest from foreign payers in oil and gas exploration in Republic of India had been low.
- The fossil fuel production in Republic of India is dominated by 2 major state-owned exploration and production corporations, ONGC and Oil Republic of India.

Recommendation of state to extend oil and gas production

- The government has asked ONGC to spice up its investments in explorations and increase tie-ups with foreign players to supply technological support in extracting oil and gas from tough oil and gas fields.
- The government might contemplate providing commercial enterprise incentives to draw in foreign players to India's upstream sector.
- The boost in oil and gas production has conjointly been a key a part of the Aatmanirbhar Bharat initiative and its goal to spice up the employment of gas in India's primary energy combine from this half-dozen.2 per cent to fifteen per cent by a pair of030.

Impact of low oil and gas production

- The low domestic production of fossil fuel and gas makes Republic of India a lot of dependent on imports.
- It will increase the India's accounting Deficit still as commercial enterprise deficit because of serious dependence on imports.
- The share of imports as a proportion of overall fossil fuel consumption in Republic of India has up from eighty one.8 per cent in FY2012 to eight7.6 per cent in FY2020.

Topic 4. TYRANNOSAURUS REX

Importance for Prelims: Environment



Recently, a study by paleontologists from Kingdom of The Netherlands have revealed a report that tyrannosaur had a most well-liked walking speed of simply five kmph that is regarding 8th the same because the average walking speed of humans.

About tyrannosaur

- It is taken into account the foremost fearful feeding machine to possess evolved on Earth.
- It lived toward the tip of the period, around sixty six million to sixty eight million years past.
- It is believed that associate degree adult member of the species stood twelve feet tall and forty feet long, and weighed between five,000 to 7,000 kg.
- The archosaurian reptile inhabited what's today's western u. s. and it had been not found in Bharat.
- The fiercest of all Indian dinosaurs was in all probability the Rajasaurusnarmadensis, followed by another specimen of the Abelisauridae family, the Indosuchusraptorius.

- The home ground of the T. Rex may have extended from as so much as Alaska in North America up till North American country within the south.

Topic 5. EARTH DAY 2021

Importance for Prelims: Environment



Recently, the world Day is being celebrated round the world on April twenty second to pledge support for environmental protection.

- Earth Day was initial determined in 1970, once twenty million took to the streets to protest against environmental degradation.
- The event was triggered by the 1969 Santa Barbara oil spill, likewise as different problems like smogginess and contaminated rivers.
- In 2009, the UN selected April twenty two as ‘International Mother Earth Day’.
- The landmark Paris Agreement, that brings virtually two hundred countries along in setting a standard target to cut back world greenhouse emissions, was signed on Earth Day 2016.
- Earth Day aims to make the world’s largest environmental movement to drive transformative modification for individuals and therefore the planet.
- Its mission is to diversify, educate and activate the environmental movement worldwide.

- According to the UN, International Mother Earth Day is well known to prompt every United States|folks|people} that the world and its ecosystems offer us with life and sustenance.

Significance of Earth Day 2021

- The year 2021 marks the 51st day of remembrance of the annual celebrations.
- The theme for Earth Day 2021 is 'Restore Our Earth'.
- The 2021 Earth Day theme focuses on natural processes, rising inexperienced technologies, and innovative thinking that may restore the world's ecosystems.

Topic 6. IDRISS DEBY ITNO

Importance for Prelims: Geography

Chad's President Idriss Deby Itno died from wounds sustained in battle once 3 decades in power, the military same, gap a amount of uncertainty in a very country that's a key strategic ally of the West.

- He was killed in Apr 2021 whereas commanding forces fighting on the front against rebels from the Front for modification and Concord in Chad (FACT).
- The transformation Military Council, crystal rectifier by interim president Mahamat Idriss Déby, son of the late president, has assumed management of state.

About CHAD

- Chad may be a inland country in north-central continent. it's deckled by Socialist People's Libyan Arab Jamahiriya to the north, Sudan to the east, the Central African Republic to the south, Cameroon to the south-west, African nation to the southwest (at Lake Chad), and Niger to the west.
- Lake Chad, once that the country is known as, is that the second-largest soil in continent.
- The capital N'Djamena is that the largest town.

Topic 7. BOAO FORUM FOR ASIA

Importance for Prelims: International Relations



While speaking at the annual Boao Forum, China's President Xi Jinping aforesaid that world rules can not be obligatory "by one or many countries".

- Headquartered in China, the Boao Forum for Asia (BFA) is a global organization conjointly initiated by twenty nine member states.
- BFA holds its annual conference in Boao, Hainan on an everyday basis.
- The origination purpose of BFA was to push economic integration in Asia. Its mission now could be to pool positive energy for the event of Asia and also the world.
- The 1st conference of BFA was prevailed Gregorian calendar month. 26-27, 2001 in Boao, Hainan Province, China.
- The forum, typically called the "Asian Davos" is modelled on the planet Economic Forum command annually in Davos, Svizzera.
- Its fastened address is in Bo'ao, Hainan province, China, though the Secretariat is predicated in national capital.

Topic 8. WORLD INNOVATION DAY

Importance for Prelims: Current Events



Recently ,World Innovation Day is well known.

- World creativeness and Innovation Day (WCID) could be a international world organisation day celebrated on Gregorian calendar month twenty one to lift awareness round the importance of creativeness and innovation in drawback resolution with relevancy advancing the world organisation property development goals.
- The 1st World creativeness and Innovation Day was celebrated on Gregorian calendar month twenty one, 2018.
- World creativeness and Innovation Day 2021 celebrates the artistic economy that consists of audiovisual merchandise, design, new media, arts, business and visual arts.
- The creativeness and innovation sector could be a extremely transformative sector of the globe economy in terms of financial gain generation, job creation and export earnings.

Topic 9. OPCW

Importance for Prelims: International Relations



India's accountant and Auditor General (CAG), has been appointed as external auditor of the Organisation for the Prohibition of Chemical Weapons (OPCW) at The Hague.

- The OPCW is an associate degree freelance, autonomous global organization with a operating relationship with the world organization.
- The Organisation for the Prohibition of Chemical Weapons is that the implementing body of the Chemical Weapons Convention (CWC), that entered into force in 1997.
- The organisation was awarded the 2013 Nobel Peace Prize “for its in depth efforts to eliminate chemical weapons”.
- The OPCW Member States share the collective goal of preventing chemistry from ever once more being employed for warfare, thereby strengthening international security.
- To this finish, the Convention contains four key provisions:
- Destroying all existing chemical weapons below international verification by the OPCW.

- Monitoring industry to forestall new weapons from re-emerging.
- Providing help and protection to States Parties against chemical threats.
- Fostering international cooperation to strengthen implementation of the Convention and promote the peaceful use of chemistry.

The Chemical Weapons Convention prohibits:

- Developing, producing, acquiring, storage, or holding chemical weapons.
- The direct or indirect transfer of chemical weapons.
- Chemical weapons use or military preparation to be used.
- Assisting, encouraging, or inducement different states to have interaction in CWC-prohibited activity.
- The use of control agents “as a way of warfare.”

Topic 10. DUST STORM

Importance for Prelims: Geography

Strong sandstorm And Rain In Old Delhi, Traffic Jams In Some Areas

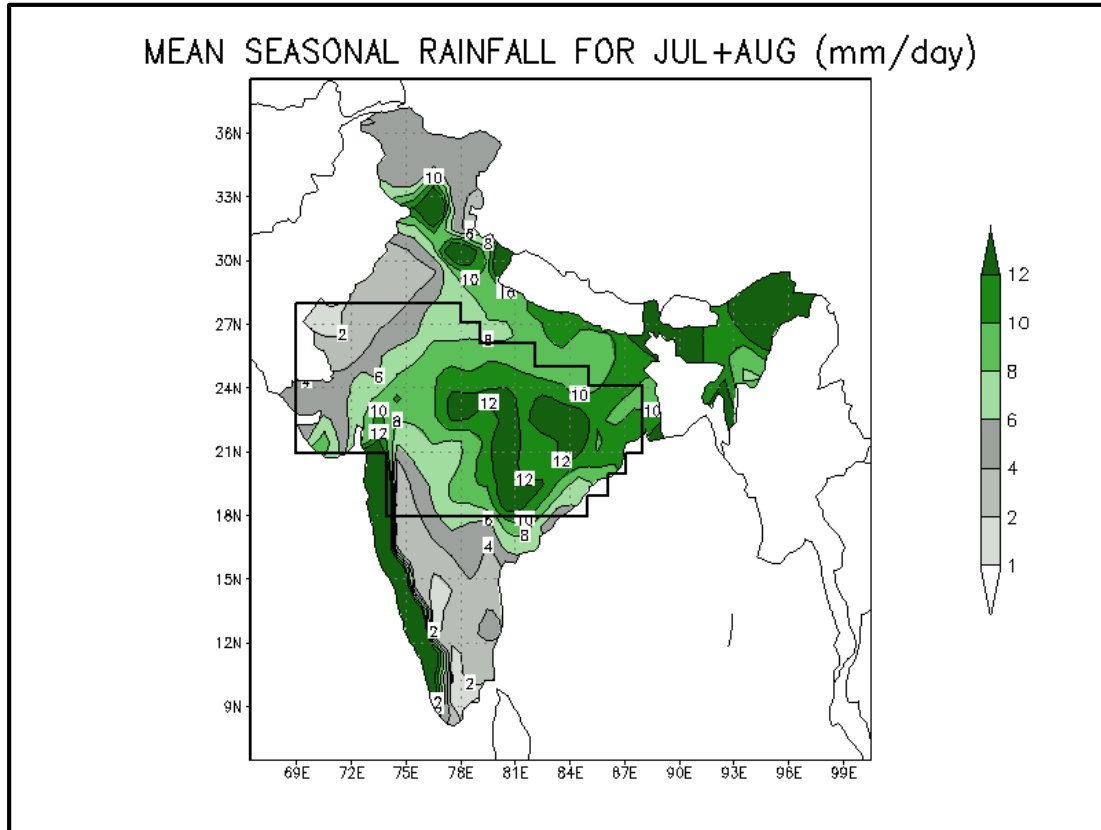
- Sand and mud storms square measure common meteoric hazards in arid and semi-arid regions. they're typically caused by thunderstorms – or robust pressure gradients related to cyclones – that increase wind speed over a good space.
- Sand and mud particles square measure distinguished by their grain size. Storms carrying larger particles square measure called Sand Storm whereas those carrying smaller square measure referred to as dirt Storms.
- Marginal dry lands square measure more and more a supply of major dirt storms. These areas have fragile, exquisitely balanced ecosystems. Their degradation, referred to as geological process, makes the soil less resilient to wind throughout prolonged drought.

Formation of dirt Storms

- Sand and mud storms typically occur once robust winds raise massive amounts of sand and mud from clean, dry soils into the atmosphere.
- Once discharged from the surface, dirt particles square measure raised to higher levels of the layer by turbulent admixture and convective updrafts.
- They square measure transported by winds for lengths of your time, betting on their size and environmental condition, before being force go into reverse to the surface once more.
- As larger particles sediment additional quickly than smaller ones, there's a shift toward smaller particle sizes throughout transport.
- Areas that have higher wetness witness storm and areas comparatively destitute of wetness suffer from dirt storms.

Topic 11. MONSOON CORE ZONE

Importance for Prelims: Geography



IMD has conjointly been creating efforts to develop a separate forecast for the Monsoon Core Zone (MCZ), that represents most of the rainfed agriculture region within the country. A separate forecast are going to be a lot of helpful for agricultural designing and crop yield estimation, etc.

- Sub-seasonal downfall fluctuations, characterised as active and weak spells throughout the Indian monsoon season (June to September) is a very important element of the variability of the Indian monsoon downfall.
- A new criteria for identification of active and break events of the period monsoon are counseled on the premise of the high resolution daily gridded downfall information set over Asian nation (1951-2007) .
- Based on this criteria, the active and break events were known from the typical downfall information over a essential space, known as the core

monsoon zone inside that the monsoon trough/ Continental Tropical Convergence Zone (CTCZ) commonly fluctuates.

- The active and break spells for the amount 1901-2015 were derived victimisation IMDs new high resolution (0.25 x 0.25 degree) daily gridded downfall information set .
- Active and break events ar outlined as periods during which the normalized anomaly of the downfall over the monsoon zone exceeds one or is a smaller amount than -1.0 severally, provided the criterion is glad for a minimum of 3 consecutive days.

Topic 12. RT PCR TEST

Importance for Prelims: Science & tech

Maharashtra says fortnightly RT-PCR tests not obligatory for those delivering essential services.

RT-PCR Test:

- Normally desoxyribonucleic acid holds info concerning ingredients that structure a living being. the knowledge coded within the desoxyribonucleic acid is regenerate into useful proteins in an exceedingly living being that is named as organic phenomenon.
- The method of organic phenomenon happens in a pair of processes specifically transcription and translation.
- In the first step the knowledge coded within the desoxyribonucleic acid is transcript⁹ on to AN RNA within the nucleus. the work of repetition this info onto RNA is completed by AN accelerator within the nucleus known as RNA enzyme.

PCR technique

- Kary Mullis, AN yank chemist made-up the PCR technique. He was awarded the honor for Chemistry in 1993. Under this, copies of a section of desoxyribonucleic acid (deoxyribonucleic acid) square measure created victimization AN accelerator known as enzyme. The ‘chain reaction’ signifies however the desoxyribonucleic acid fragments square measure traced, exponentially — one is traced into 2, the 2 square measure traced into four, and so on.
- So the desoxyribonucleic acid from the patient’s sample is collected and increased manifold victimization PCR that is then detected by an exploration.”
- However, corona virus is formed of RNA (ribonucleic acid). they can not be replicated directly victimization PCR. thus to observe coronavirus,

RNA is regenerate into desoxyribonucleic acid employing a technique known as reverse transcription.

- A ‘reverse transcriptase’ accelerator converts the RNA into desoxyribonucleic acid. Copies of the desoxyribonucleic acid square measure then created and amplified.

Advantage of PCR take a look at over Rapid-Antibody Testing

- In case of PCR tests, it's the presence of AN substance within the infected patient that's tested for rather than the presence of antibodies that is completed just in case of fast protein testing .Thus, detective work the presence of microorganism within the body before body’s antibodies kind will observe the infection early.

Topic 13. SUPACE

Importance for Prelims: Governance

SUPACE, a composite AI-assisted tool, is accustomed push up potency of legal researchers and judges; it'll scan case files, extract relevant data, draft case documents and manage allotment of labor.

- SUPACE is brief for Supreme Court Portal for help in Court's potency.
- Earlier, the E-Courts Project was conceptualised on the idea of "National Policy and Action arrange for Implementation of knowledge and Communication Technology (ICT) within the Indian Judiciary – 2005" submitted by the e-Committee of the Supreme Court.

About SUPACE:

- It may be a tool that collects relevant facts and laws and makes them out there to a choose.
- It isn't designed to require choices, however solely to method facts ANd to create them out there to judges searching for an input for a call.
- Initially, it'll be used on AN experimental basis by the judges of city and Delhi High Courts United Nations agency agitate criminal matters.

Significance:

- It can turn out results tailor-made to the necessity of the case and therefore the method the choose thinks.
- This are time saving. it'll facilitate the judiciary and therefore the court in reducing delays and pendency of cases.
- AI can gift a additional efficient, value effective and time sure suggests that to the basic right of access to justice.
- It can build the service delivery mechanism clear and efficient.

SUVAS ('Supreme Court VidhikAnuvaad Software')

- It may be a machine-assisted translation tool trained by AI.

- This Tool is specially designed for Judicial Domain and at the moment, has the capability and capability of translating English Judicial documents, Orders, or Judgments into 9 vernacular language scripts and contrariwise.
- This is that the opening towards the introduction of AI within the Judicial Domain.
- Currently, SUVAS computer code is getting used for translating Supreme Court judgments into 9 vernacular languages — Assamese, Bengali, Hindi, Kannada, Marathi, Odiya, Tamil, Telugu, and Urdu which can be additional swollen to different regional languages too.
- Right currently cases associated with Labour, Rent Act, Land Acquisition and Requisition, Service, Compensation, Criminal, Family Law, normal Civil, Personal Law, spiritual and Charitable Endowments, straightforward cash and Mortgage, Eviction underneath the general public Premises (Eviction) Act, Land Laws and Agriculture Tenancies and shopper Protection ar being translated.

Topic 14. NATIONAL CLIMATE VULNERABILITY ASSESSMENT REPORT

Importance for Prelims: Environment

National climate vulnerability assessment free.

- The report is titled ‘Climate Vulnerability Assessment for Adaptation designing in India employing a Common Framework’
- It identifies the foremost vulnerable states and districts in India with relevance current climate risk and key drivers of vulnerability.
- The report has been submitted by the Indian Institute of Technology Mandi and also the Indian Institute of Technology Guwahati together with the Indian Institute of Science, Bengaluru.

Key findings of the vulnerability assessment:

- Based on AN all-India assessment, this report identifies the foremost vulnerable states and districts in India with relevance current climate risk and also the main drivers of vulnerability.
- The states with a comparatively high vulnerability, Jharkhand, Mizoram, Odisha, Chhattisgarh, Assam, Bihar, Arunachal Pradesh, and state, square measure largely within the jap a part of the country, requiring prioritisation of adaptation interventions.
- Assam, Bihar, and Jharkhand have over hr of districts within the class of extremely vulnerable districts.

Topic 15. SANCHI STUPA

Importance for Prelims: Art & Architecture



Built by emperor Ashoka, within the third century B.C. to accommodate the relics of Gautam Buddha, the Sanchi Stupa is taken into consideration one in all the best living samples of Buddhist structure.

- Sanchi Stupa may be a UN agency world heritage web site since 1989. Sanchi is in Madhya Pradesh.
- There square measure several little stupas here with 3 mains ones – stupa one, stupa two and stupa three. Stupa one is additionally referred to as the good Stupa at Sanchi. it's the foremost outstanding and therefore the oldest and is believed to possess the Buddha's relics.
- It was engineered by Ashoka within the third century BCE.
- Originally, it absolutely was smaller than its gift dimensions. it absolutely was dilated in later periods.
- The original structure was created out of bricks. Later on, it absolutely was coated with stone, vedica, and therefore the torana (gateway).

- There square measure four gateways to the stupa with the southern one being engineered 1st. The others were later additional.
- The gateways square measure adorned with stunning sculptures and carvings. every torana consists of 2 vertical pillars and 3 horizontal bars on prime. The bars contain exquisite carvings on front and back.
- They contain pictures of shalbhanjikas – girl holding the branch of a tree. Stories from the Jataka tales square measure inscribed here.
- The structure includes a lower and higher pradakshinapatha or circumambulatory path.
- The higher pradakshinapatha is exclusive to the present stupa.
- On the southern facet of the stupa, the Ashokan Lion Capital pillar is found with inscriptions on that.
- The subfigure dome of the stupa is named the anda. It contains the relics of religious mystic.
- The harmika may be a sq. railing on prime of the dome/mound.
- The chhatra is AN umbrella on prime of the harmika. there's a arenaceous rock pillar within the web site on that Ashoka's split Edict is inscribed.
- The original brick dome was dilated into double its size throughout the reign of the Shunga kinfolk with stone slabs covering the first dome.

Topic 16. CERT-IN

Importance for Prelims: Science & tech

The Bharatn pc Emergency Response Team (CERT-In) has warned WhatsApp users in India of multiple vulnerabilities it detected within the instant electronic messaging platform, that could lead on to breach of sensitive user knowledge and private info.

Computer Emergency Response Team – Bharat (CERT-IN)

- It is associate organisation of the Ministry of physics and data Technology, Government of Bharat, with the target of securing Indian Net.
- It is that the nodal agency that deals with cybersecurity threats like hacking and phishing.
- It collects, analyses and disseminates info on cyber incidents, and conjointly problems alert on cybersecurity incidents.
- CERT-IN provides Incident hindrance and Response Services furthermore as Security Quality Management Services.

Additional Facts:

- **Budapest Convention on Cybercrime:** it's the primary international written agreement that seeks to handle web and crime by harmonizing national laws, rising investigatory techniques and increasing cooperation among nations. It came into force in 2004.India isn't a mortal to the present convention.
- **Cyber Surakshit Bharat Yojana:** it absolutely was launched in 2018 by Ministry of physics and data Technology in association with National e-Governance Division(NeGD) and business players.It includes awareness programs on cyber security; workshops on best practices and enablement of the officers with cyber security health tool kits.

- **Cyber Swachhta Kendra (Botnet improvement and Malware Analysis Centre):** It provides for the detection of malicious programs and free tools to get rid of such programs.
- **Bharatn Cyber Crime Coordination Centre(I4C):** it absolutely was established in 2018 to combat crime in India in a very comprehensive and coordinated manner. It functions underneath the Ministry of Home Affairs.

Topic 17. BLACK SEA

Importance for Prelims: Geography



Russia beefs up war vessel presence in Euxine Sea as Ukayina tensions simmer.

- The ocean|Black Sea|Euxine Sea|sea} may be a marginal sea of the ocean lying between Europe and Asia. it's fringed by Bulgaria, Georgia, Romania, Russia, Turkey, and Ukayina.
- It is equipped by major rivers, primarily the Danube, Dnieper, and Don.
- The Euxine Sea ultimately drains into the Mediterranean Sea, via the Turkish Straits and therefore the Aegean.
- The Bosphorus Strait connects it to the little ocean of Sea of Marmora that successively is connected to the Aegean via the Strait of the Dardanelles.
- To the north, the Euxine Sea is connected to the ocean of Azov by the Kerch Strait.
- The Euxine Sea covers 436,400 km² (not as well as the ocean of Azov), creating it the world's largest inland body of water.

Topic 18. ADITYA-L1 SUPPORT CENTRE (ASC)

Importance for Prelims: Science & tech

The Indian programme to check the Sun and therefore the region between the Sun and therefore the Earth from area – Aditya-L1 – is because of be launched next year.

- It can carry seven payloads that are developed by numerous establishments across the country. Once the mission is launched, there'll be a desire for a ground support centre to watch and coordinate the work on its numerous payloads.
- This role are going to be compete by the ARIES facility (short for Aryabhata analysis Institute for data-based Sciences) that is located close to Nainital.
- In Gregorian calendar month 2021, associate agreement was signed to the present impact supported the proposal submitted by the ARIES team. With concerning four to 5 personnel, this centre can return up at Haldawani, wherever ARIES is fitting an information centre conjointly.
- The Aditya-L1 Support Centre (ASC) can offer coaching through regular workshops for the guest users. excluding this, it'll offer ready-to-use Python and Java apps for the satellite knowledge and demos and handouts to facilitate the guest users.

Aditya L1 Mission

- Aditya L1 are going to be launched exploitation the Polar Satellite Launch Vehicle (PSLV) XL with seven payloads (instruments) on board.
- Aditya-L1 would be placed into purpose|some extent|a degree} in area referred to as the L1 Lagrange point.
- Aditya L1 can study the Sun's corona (Visible and close to infrared rays), Sun's surface (soft and exhausting X-ray), layer (Ultra Violet), star

emissions, star winds and flares, and lei Mass Ejections (CMEs), and can do nonstop imaging of the Sun.

Topic 19. CHOLISTAN DESERT

Importance for Prelims: Geography

The recent shooting of 2 nice Indian Bustards (GIBs) in Pakistan's Cholistan desert has left life activists in Rajasthan appalled and indignant.

- The Cholistan Desert, conjointly regionally referred to as Rohi, may be a massive desert within the southern a part of Punjab, Pakistan.
- It forms a part of the larger Thar Desert, that extends to Sindh province and therefore the Indian state of Rajasthan.
- It is one in all 2 massive deserts in Punjab, the opposite being Thal Desert.
- Derawar Fort is found within the Cholistan Desert.

Topic 20. REWACONODON INDICUS

Importance for Prelims: Environment

The Tiki Formation in Madhya Pradesh, a treasure trove of vertebrate fossils, has currently yielded a replacement species and 2 genera of cynodonts, little rat-like animals that lived concerning 220 million years past.

- The researchers from the Indian Institute of Technology Kharagpur, used scanning electron research to check concerning ten teeth samples collected from the village of Tihki in Shahdol District, Madhya Pradesh.
- The results showed that they'd found a replacement species, and that they named it Rewaconodonindicus, indicating Bharat, the country it absolutely was discovered from.
- The team conjointly known 2 new genera from the realm. the primary was named Inditheriumfloris, when Bharat and therefore the Latin word therium that means beast. because the teeth had a flower-shaped crown, it attained the species name floris.
- The second was named Tikiodonromptoni, when Tiki Formation and Greek word odon that means tooth. The species name is when man of science A.W. Crompton.

Topic 21. STAR DUST

Importance for Prelims: Science & tech

In six expeditions junction rectifier over the last 20 years, researchers junction rectifier by those from CNRS in Paris have created associate degree estimate of the number of extraterrestrial dirt falling on the world per annum.

- Stardust is made by the fabric ejected from stars and carried by stellar winds, obtaining blown into part.
- The stellar wind may be a flow of gas ejected from the higher atmosphere of a star.
- Interstellar house is outlined as that that lies on the far side a magnetic region that extends regarding 122 Astronomical Unit (AU) from the sun.
- During the star system's birth, this dirt was incorporated into everything that shaped together with the planets and therefore the sun however survived intact heretofore solely in asteroids and comets.

Topic 22. CLASS EFFECT

Importance for Prelims: Science & tech

Class Effect of SGLT-2 Inhibitors

Similar chemical structure

Glucose

Phlorizin

Similar mechanism of action

SGLT-2 inhibition

Similar pharmacological effects

J&J scientists refute 'class effect' responsible for clots in those that got its immunogen

- Class impact is typically taken to mean similar therapeutic effects and similar adverse effects, each in nature and extent.
- Criteria for medicine to be classified along as a category involve some or all of the following:
 - Drugs with similar chemical structure
 - Drugs with similar mechanism of action
 - Drugs with similar medicine effects

Topic 23. COVAXIN

Importance for Prelims: Science & tech

In a meeting held on March twenty four, the expert Committee of the Government of India drug regulator allowed Government of India Biotech to hold out a phase-2 trial of Covaxin whereby a recall dose is to be administered six months when the second dose to more improve immunogen effectiveness. Currently, 2 doses of Covaxin are administered twenty eight days apart.

- COVAXIN is an inactivated immunogen, created from a strain of the infectious SARS-CoV-2 virus, that has shown promise in presymptomatic studies, demonstrating intensive safety and effective immune responses.
- COVAXIN has been developed by Government of India Biotech together with the Indian Council of Medical Research (ICMR) and therefore the National Institute of medical specialty (NIV).
- The SARS-CoV-2 strain was isolated in NIV, Pune and transferred to Government of India Biotech. The endemic, inactivated immunogen are developed and made by Government of India Biotech's BSL-3 (Bio-Safety Level 3) High Containment facility situated in ordering vale, Hyderabad, India.
- Bharat Biotech's data in developing Vero cell culture platform technologies has been well-validated in many vaccines for poliomyelitis, rabies, rotavirus, Japanese encephalitis, Chikungunya and Zika.

Topic 24. UNIFORM CIVIL CODE

Importance for Prelims: Polity

Chief Justice of Republic of India S A Bobde recently appreciated the uniform civil code (UCC) in Goa, the sole state to own one. This brought the spotlight back on the UCC dialogue, though the Law Commission had finished in 2018 that a UCC is neither fascinating nor possible.

- The Uniform Civil Code (UCC) needs the formulation of 1 law for Republic of India, which might be applicable to all or any non secular communities in matters like wedding, divorce, inheritance, adoption.
- The code comes below Article forty four of the Constitution, that lays down that the state shall endeavour to secure a consistent Civil Code for the voters throughout the territory of Republic of India.

Background of Uniform Civil Code

- The origin of the UCC dates back to colonial Republic of India once a people government submitted its report in 1835 stressing the requirement for uniformity within the codification of Indian law with reference to crimes, evidence, and contracts, specifically recommending that non-public laws of Hindus and Muslims be unbroken outside such codification.
- Increase in legislation managing personal problems within the way finish of a people rule forced the govt to create the B N Rau Committee to systemize Hindu law in 1941.
- Based on these recommendations, a bill was then adopted in 1956 because the Hindu Succession Act to amend and systemize the law with reference to intestate or unwilled succession, among Hindus, Buddhists, Jains, and Sikhs.
- However, there have been separate personal laws for muslim, chirstian and Parsis.

- In order to bring uniformity, the courts have usually aforesaid in their judgements that the govt ought to move towards a consistent civil code.
- The judgement within the sovereign Bano case is acknowledge, however the courts have created constant purpose in many different major judgements.
- By contestation that practices like triple talaq and marriage impact adversely on the correct of girls to a lifetime of dignity, the Centre has raised the question whether or not constitutional protection given to spiritual practices ought to extend even to people who aren't in compliance with basic rights.

UCC and Implications

- **Protection to Vulnerable Section of Society:** The UCC aims to supply protection to vulnerable sections as envisaged by Ambedkar together with ladies and spiritual minorities, whereas conjointly promoting nationalistic fervour through unity.
- **Simplification of Laws:** The code can alter the advanced laws around wedding ceremonies, inheritance, succession, adoptions creating them one for all. constant civil law can then be applicable to all or any voters regardless of their religion.
- **When enacted the code can work to alter laws that area unit isolated nowadays on the idea of spiritual beliefs just like the Hindu code bill, Sharia law, and others.**
- **Adhering to Ideal of doctrine:** Secularism is that the objective enshrined within the Preamble, a lay republic wants a standard law for all voters instead of differentiated rules supported non secular practices.
- **Gender Justice:** Republic of India has separate sets of non-public laws for every faith governing marriages, divorce, succession, adoption and maintenance.

- However, the rights of girls area unit sometimes restricted below non secular law, be it Hindu or Muslim. The follow of triple talaq could be a classic example.
- If a consistent civil code is enacted, all personal laws can stop to exist.
- It can do away with gender biases in Muslim law, Hindu law and Christian law that are usually challenged by ladies on the bottom that they violate the correct to equality.

Topic 25. FPI

Importance for Prelims: Economics



Three countries – the United States, Mauritius and Luxembourg — accounted for over fifty per cent of the whole foreign portfolio investment (FPI) that India received to date.

- Out of Rs forty four.62 large integer large integer investment, United States investors accounted for Rs fifteen.38 large integer large integer, Mauritius Rs five.29 large integer large integer and Luxembourg Rs three.74 large integer large integer, in step with knowledge from National Securities repository Ltd (NSDL).

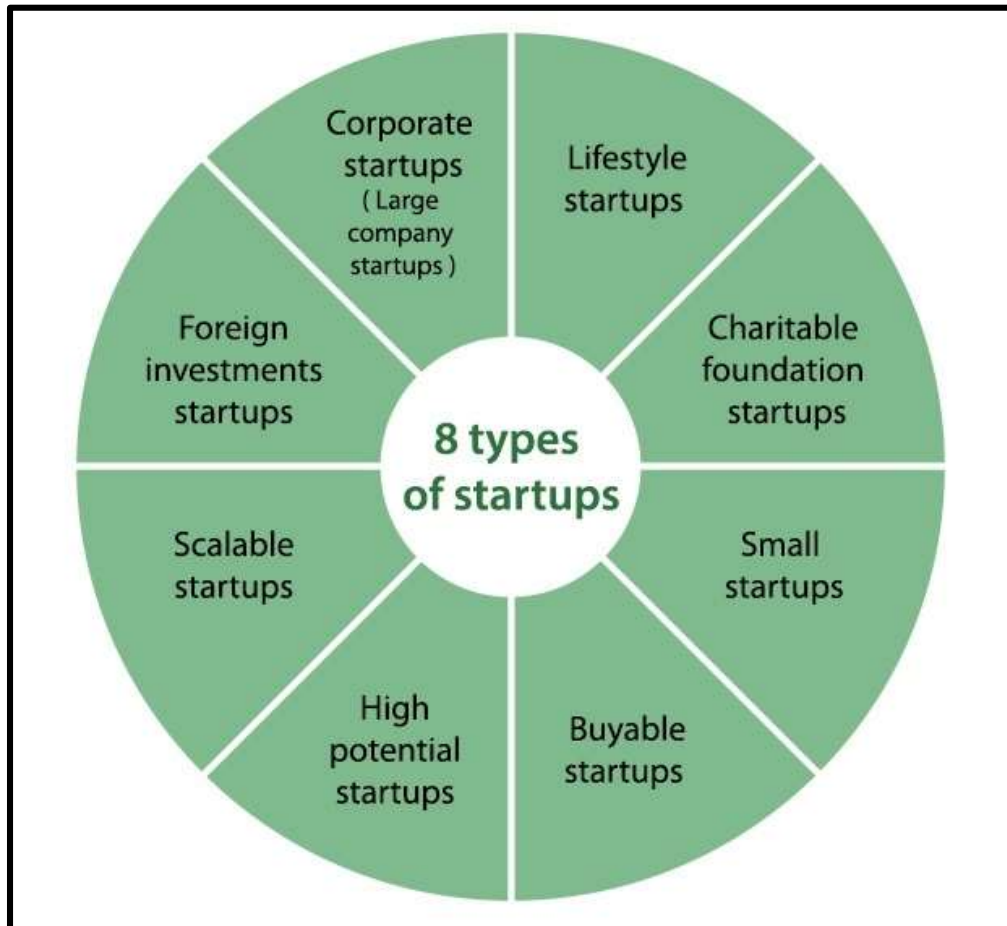
Foreign Portfolio Investments

- Foreign portfolio investment (FPI) refers to investment within the monetary assets of a far off country, like stocks or bonds accessible on associate exchange.
- This form of investment is from time to time viewed less favourably than direct investment as a result of portfolio investments is sold-out off quickly and area unit from time to time seen as short term tries to form cash, instead of a semipermanent investment within the economy.

- Portfolio investments usually have a shorter time-frame for investment come than direct investments.
- As securities are unit simply listed, the liquidity of portfolio investments makes them a lot of easier to sell than direct investments. With any equity investment, foreign portfolio investors typically expect to quickly notice a profit on their investments.
- Portfolio investments are unit additional accessible for the typical capitalist than direct investments as a result of they need a lot of less investment capital and analysis.
- Examples of foreign portfolio investments embrace stocks, bonds, mutual funds, exchange listed funds, yankee depositary receipts (ADRs), and international depositary receipts (GDRs).

Topic 26. TYPES OF STARTUPS

Importance for Prelims: Economics



Investors infused a humongous \$4.4 billion into Indian start-ups within the January- March quarter, in step with information sourced from marketing research firm Venture Intelligence.

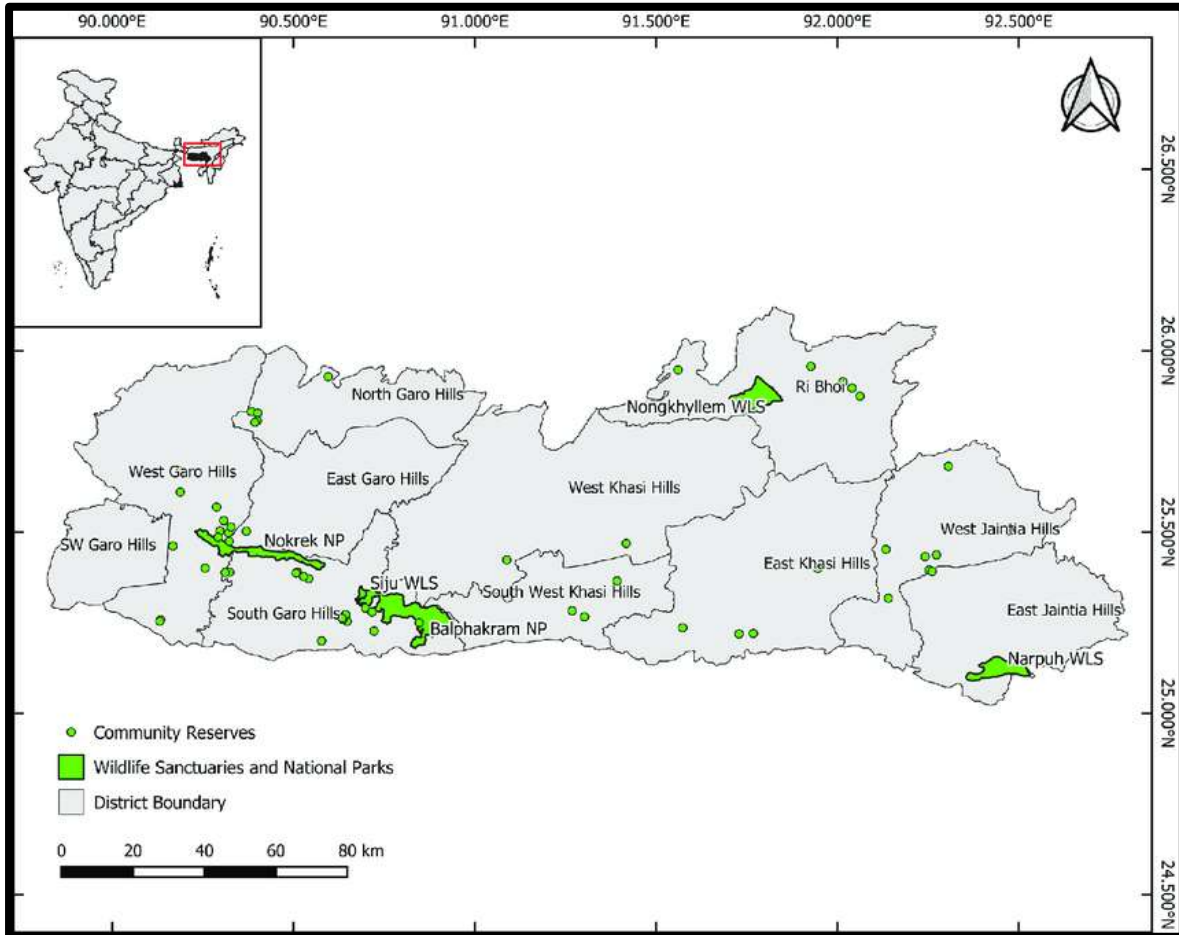
This is a good twenty sixth increase over an equivalent amount last year.

- Soonicorns are unit startup firms that have a decent chance of changing into 'unicorns', with the prospect of getting late-stage investment.
- In the planet of business, the term 'unicorn' denotes a non-public company, over and over a start-up with a stock valuation of over \$1 billion.
- The term imaginary creature is of a recent origin within the business world and was coined by Aileen Lee in 2013.

- Such firms area unit referred to as imaginary creature therefore on equate them with the legendary animal thereby denoting the rarity of such sure-fire businesses.
- Similarly, Decacorn and Hectocorn area unit different terms wont to depict firms valued over \$10 billion and \$100 billion severally.

Topic 27. DISC FOOTED BAT

Importance for Prelims: Environment



Meghalaya has yielded India's initial bamboo-dwelling bat with sticky discs, taking the species count of the flying vertebrate within the country to one hundred thirty.

- The disc-footed bat (*Eudiscopus denticulus*) was recorded within the north-eastern State's Lailadarea close to the Nongkhylliem life Sanctuary, about 1,000 kilometre west of its nearest glorious environment in Burma.
- There area unit some of alternative bamboo-dwelling balmy in India. however the extent of adaptation for bamboo environment during this species isn't seen within the others.
- The planar bone and sticky pads enabled the balmy to roost within incommodious areas, clinging to sleek surfaces like bamboo internodes.

The disc-footed bat was conjointly found to be genetically terribly totally different from all alternative glorious balmy bearing disc like pads.

- Scientists analysed the terribly high frequency echo sounding calls of the disc-footed bat, that was appropriate for orientation during a littered surroundings like within bamboo groves.
- The disc-footed bat has raised Meghalaya's bat count to sixty six, the foremost for any State in India. it's conjointly helped add a genus and species to the bat fauna of India.

Topic 28. IP APELLATE BOARD

Importance for Prelims: Governance



Meghalaya has yielded India's initial bamboo-dwelling bat with sticky discs, taking the species count of the flying craniate within the country to a hundred thirty.

- The disc-footed bat (*Eudiscopus denticulus*) was recorded within the north-eastern State's Lailadarea close to the Nongkhylllem life Sanctuary, about 1,000 kilometer west of its nearest glorious surround in Asian nation.
- There area unit a handful of different bamboo-dwelling bonkers in India. however the extent of adaptation for bamboo surround during this species isn't seen within the others.
- The planate os and sticky pads enabled the bonkers to roost within incommodious areas, clinging to swish surfaces like bamboo internodes. The disc-footed bat was conjointly found to be genetically terribly completely different from all different glorious bonkers bearing disc like pads.
- Scientists analysed the terribly high frequency localization calls of the disc-footed bat, that was appropriate for orientation in an exceedingly untidy atmosphere like within bamboo groves.

- The disc-footed bat has raised Meghalaya's bat count to sixty six, the foremost for any State in India. it's conjointly helped add a genus and species to the bat fauna of India.

Topic 29. OXYGEN EXPRESS

Importance for Prelims: Current Events

Railways to run 'Oxygen Express' trains to satisfy demand; UP, Delhi, Gujarat register record spike in cases.

- The Railways can run 'Oxygen Express' trains over ensuing few days to move liquid medical O and O cylinders across the country, the national transporter same on Sunday.
- Amid spiralling corona virus cases within the country, the demand for medical O within the country has had the roof.
- Empty tankers can begin their journey from Kalamboli and Boisar railway stations in and close to urban center on Monday to load liquid medical O from Vizag, Jamshedpur, Rourkela and Bokaro, officers same Medical O

Medical O

- Medical O is that the O that we have a tendency to use to treat patients. we have a tendency to use it to take care of enough O level in our blood.
- Oxygen medical care is that the use of O as a medical treatment. we are able to use it to treat low blood O levels, CO toxicity, cluster headaches, etc.
- This O provides a basis for just about all trendy anaesthetic techniques, restores tissue O tension by increasing the O availableness, aids revitalization, aids vessel stability, etc.
- However, there area unit some facet effects further. moreover, high concentrations will cause toxicity

Topic 30. THRISSUR POORAM FESTIVAL

Importance for Prelims: Culture

Thrissur Pooram 2021 are celebrated on Fri, April 23, 2021.

- Thrissur Pooram is Associate in Nursing annual Hindu competition command in Kerala. it's celebrated on the day once the part “Pooram” happens within the Malayalam month of “medam (April- May)”.
- The competition was the product of Raja avatar Varma, splendidly referred to as SakthanThampuran, the prince of domestic fowl (1790–1805).
- Pooram formally begins with Kodiyettam (flag hoisting ceremony) during which all the taking part temples of the competition area unit gift.
- The Pooram consists of 10 temples in and around Thrissur and is taken into account to be a ceremony wherever these deities close to pay obeisance to Lord Shiva at the Vadakkunnathan Temple, settled within the centre of the city.
- One of the hallmarks of the competition is that the percussion ensemble consisting of ancient instruments like chenda, maddalam, edakka, thimila and kombu.
- The seventh day of the pooram is that the Judgment Day. it's additionally referred to as “PakalPooram”.
- Pooram, although a Hindu ritual, has full-grown to include all spiritual and cultural strains of Kerala. each the Muslim and Christian communities participate within the competition in an exceedingly style of ways that lightness profane credentials of the state.

Topic 31. MAHABALESHWAR TEMPLE

Importance for Prelims: Art & Architecture

The Supreme Court Mon same the management of Gokarna Mahabaleshwar temple would be two-handed over to Associate in Nursing oversight committee headed by former apex court vi decide Justice B.N. Srikrishna.

- The Mahabaleshwar Temple, Gokarna could be a 4th-century metal Hindu temple set in Gokarna, Uttara Kannada district, province state, Asian nation that is made within the classical Dravidian art form.
- It could be a web site of non secular journey. The temple faces the Gokarna beach on the Arabian Sea during which Hindu pilgrims cleanse before visiting the temple for worship.
- The temple is taken into account as holy because the Shiva temple at Varanasi or Kāśī (Kashi) in North Asian nation on the banks of the Ganges.
- Hence, the Mahabaleshwar temple, Gokarna is understood because the DakshinKasi (“Kasi of the south”).
- The main attraction of this temple is that the 6-foot long Shiva symbol of that solely the tip is seen, representing the stone incarnation of Lord Shiva.
- There square measure amid mountainous piece of land, this temple glorifies the Maratha Empire and its dominance within the sixteenth century.

Topic 32. INAS 323

Importance for Prelims: Defence

Indian armed service Air Squadron (INAS) 323, the primary unit of the indigenously engineered ALH Mk III craft, was commissioned into the Indian Navy.

- The squadron can operate 3 progressive Advanced light-weight Helicopters Mk III, a multirole heavier-than-air craft with Hindu deity engine factory-made by geographical area physics restricted (HAL).
- The Mk III version of the ALH has Associate in Nursing all glass cockpit and can be used for Search and Rescue, Special Operations and Coastal police investigation.
- 16 craft area unit beneath procurance and therefore the craft area unit being delivered in an exceedingly phased manner to the Indian Navy.

Topic 33. PREVENTION OF CRUELTY TO ANIMALS ACT

Importance for Prelims: Legislations

The Prevention of Cruelty to Animals Act, 1960

Duties of persons having charge of animals:

It shall be the duty of every person having the care or charge of any animal to take all reasonable measures to ensure the well-being of such animal and to prevent the infliction upon such animal of unnecessary pain or suffering.

The Centre's agriculture department has promptly added to the 1960 legislation a tight new section that addresses the killing of animals and "gruesome cruelty" towards them

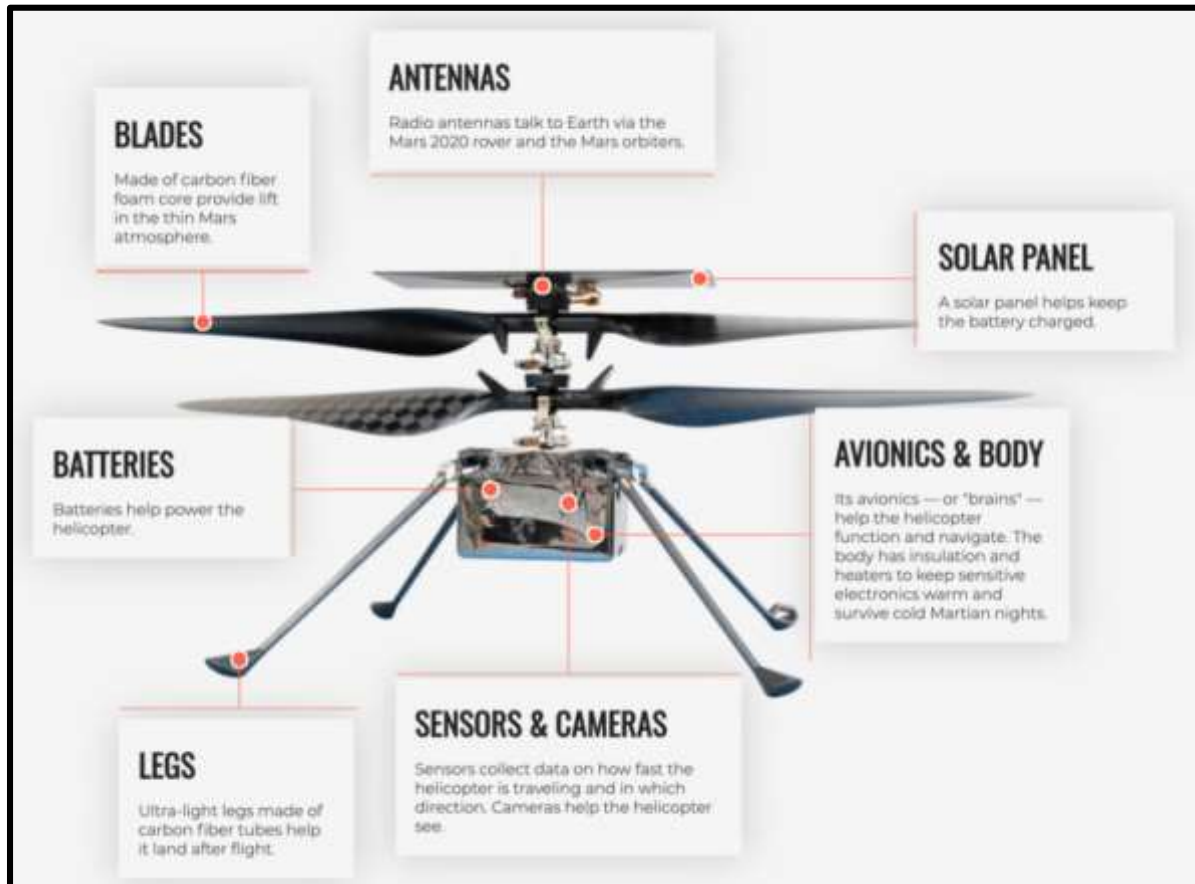
About the hindrance of Cruelty to Animal Act:

- It prohibits any individual from inflicting, causing, or if it's the owner, permitting, superfluous pain or suffering to be inflicted on any animal.
- It provides for penalisation for inflicting superfluous cruelty and suffering to animals.
- Section a pair of of the act defines animals and kinds of animals like domestic or captive animals.
- Section four provides for Welfare Board of Bharat (WBI), a statutory consultative body for animal welfare and protection of animals from superfluous suffering and pain.

- Late Smt. Rukmini Devi Arundale, standard humanitarian and Bharatnatyam exponent LED it since its foundation for pretty much twenty years.
- It mentions types of cruelty, exceptions, and killing of a suffering animal just in case any 8cruelty has been committed against it, therefore on relieve it from any suffering.
- Provides the rules with reference to experimentation on animals for scientific functions.
- An animal can not be exhibited or trained by any individual, if:
 - Such someone is unregistered as per the provisions of this chapter;
 - Such associate degree animal has been barred from being enclosed in any performance by the Central Government through a notification within the Official Gazette.

Topic 34. INGENUITY

Importance for Prelims: Science & tech



NASA declared that Ingenuity had performed its 1st flight. “...the 1st flight of a high-powered craft on another planet!”

- Ingenuity, the primary chopper to wing Mars was carried by NASA’s rover referred to as Perseverance that was launched in July last year and can facilitate collect samples from the surface from locations wherever the rover cannot reach.
- Perseverance landed at the Jezero Crater of Mars in Feb year. it’ll stay on the Red Planet for concerning 2 years and appearance for locating past signs of life.
- The rover is intended to review signs of ancient life, collect samples which may be sent back to Earth throughout future missions and take a look at

new technology which may profit future robotic and human missions to the earth.

- Ingenuity is ready to fly victimization counter-rotating blades that spin at concerning two,400 rpm.
- It features a wireless communication system, and is supplied with computers, navigation sensors, and 2 cameras. it's solar-powered, ready to charge on its own.
- Taking to the air would offer scientists a replacement perspective on a region's earth science and even enable them to look into aras that are too steep or slippery to send a rover. within the distant future, they could even facilitate astronauts explore Mars.
- NASA can attempt to demonstrate rotorcraft flight within the very skinny atmosphere of Mars with this chopper, that is why the mission is therefore crucial.

Topic 35. SUDARSHAN SEN COMMITTEE

Importance for Prelims: Economics

Recently, the Federal Reserve Bank of Asian country (RBI) has established a committee to undertake a comprehensive review of the operating of quality reconstruction firms (ARCs).

- It could be a six-member committee which is able to be headed by Sudarshan fractional monetary unit, former decision maker of tally.
- The different members square measure ICICI Bank male erecticle dysfunction Vishaka Mulye, SBI deputy MD R N Prasad, EY partner Abizer Diwanji, MDI economic science academician Rohit Prasad and CA R Anand.
- The panel can submit their report among 3 months of their 1st meeting.
- The Department of Regulation (RBI) can offer the required assistant support to the Committee.

What square measure quality Reconstruction firms (ARCs)?

- The ARCs square measure entities that purchase dangerous loans from banks and salvage worth from them by finding patrons for the protection or commerce the business.
- The ARCs square measure registered underneath the tally and controlled underneath the Securitisation and Reconstruction of monetary Assets and social control of Securities Interest Act, 2002 (SARFAESI Act, 2002).
- The ARCs take over some of the debts of the bank that qualify to be recognised as Non-Performing Assets.
- It implies that the ARCs square measure engaged within the business of quality reconstruction or securitisation or each.
- All the rights that were control by the investor (the bank) in respect of the debt would be transferred to the ARC.

- In Gregorian calendar month 2021, the govt had same that public sector banks can established a national ARC which is able to get dangerous loans from banks and facilitate clean their books.

Topic 36. STARTUP INDIA SEED FUND SCHEME

Importance for Prelims: Government Schemes

Union Minister for Commerce and business, Piyush Goyal these days launched the Startup Republic of India Seed Fund theme (SISFS)

- It may be a Rs one,000-crore seed fund for startups.
- The theme can facilitate startups with the initial capital for growth and operations.
- The government can offer guarantees to assist startups raise debt-capital so as to create a startup scheme that functions on the 'of the youth, by the youth, for the youth' mantra.
- It is that the would like of the hour that the technologies of the long run start of the science lab of Asia and therefore the entrepreneurs of the long run ought to be ready from here.

Fund of Fund theme

- It may be a theme that invests in units of alternative investment company (MF) schemes.
- The FoF is associate degree radio frequency theme however one that doesn't invest directly in stocks or securities however in alternative radio frequency schemes.
- It provides the capitalist a chance to speculate completely different|in several|in numerous} schemes managed by different fund managers.

Topic 37. TRIPLE MUTANT & GENOME SEQUENCING

Importance for Prelims: Science & tech

Double Virus Strain initial Detected in Oct, however its cistron Study was Stalled;
A Triple Mutant Appears: Report.

- The report same that a 3rd mutation within the B.1.167 has been known currently and specialists hope that this point the pace of intervention and follow-up picks up.
- **Genome sequencing**, the study of genetic structures of AN organism and therefore the changes happening in it, provide data concerning the virus' origins, routes taken to achieve a specific space and therefore the changes, or mutations, that square measure creating the virus stronger or weaker.
- India, within the initial six months, barely conducted many hundred ordination sequencing, whereas alternative countries like China, the united kingdom and North American nation, had done many thousand and submitted these publicly international depositories for scientists across the globe to review.
- It was solely in Dec last year that the govt. proclaimed putting in the Republic of Indian SARS-CoV2 genetic science association (INSACOG) to expedite the cistron sequencing effort from India through a association of ten laboratories.
- The CCMB, that is one in all the labs beneath INSACOG, discovered the double mutant throughout ordination sequencing last month.

Indian SARS-CoV-2 association on genetic science (INSACOG):

- INSACOG may be a multi-laboratory, multi-agency, pan-India network to observe genomic variations within the SARS-CoV-2.
- It helps within the understanding of however the virus spreads and evolves.

- Genomic police investigation will generate a fashionable supply of data for chase microorganism transmission and evolution on each national and international levels.

Topic 38. VANDE BHARAT MISSION

Importance for Prelims: International Relations

नागर विमानन मंत्रालय
MINISTRY OF
CIVIL AVIATION

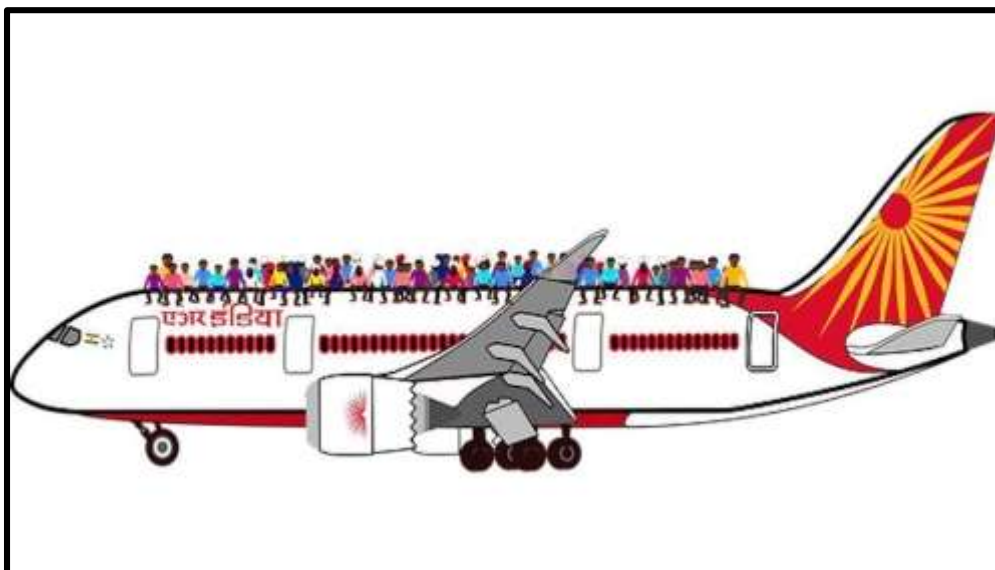
DAY 12 MAY 18

MISSION VANDE BHARAT

1205 INDIANS RETURN ON 6 FLIGHTS ON 18TH MAY 2020

- 178 from Dubai to Mangalore
- 182 from Muscat to Hyderabad-Mumbai
- 175 from Abu Dhabi to Kochi
- 183 from Doha to Kozhikode
- 169 from Dhaka to Kolkata
- 318 from London to Delhi-Varanasi-Gaya

#IndiaFightsCorona



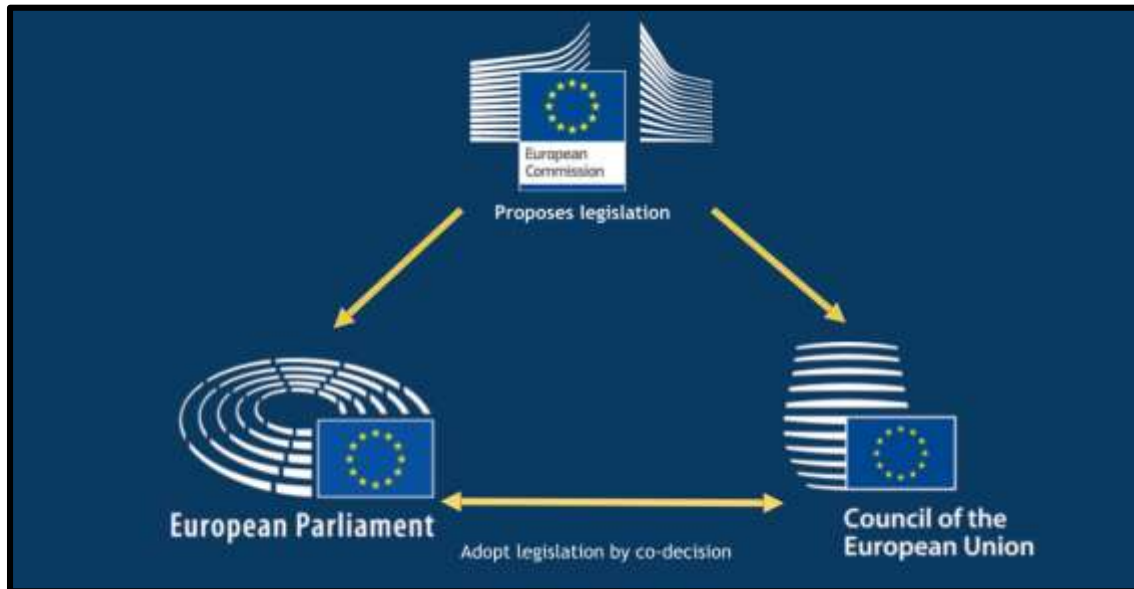
The Vande Bharat Mission (VBM), that started repatriating Indians stranded abroad thanks to COVID-19 and therefore the resultant lockdowns since could

seven, 2020, has had to be one in every of the biggest evacuations of civilians by a rustic.

- Into the center of part ten, the VBM has surpassed the large-scale airlift of one,10,000 individuals in 1990 at the onset of the Gulf War.
- Till now, the Air Bharat (AI) cluster has operated eleven,523 arriving flights to hold eighteen,19,734 passengers and eleven,528 departing flights with thirteen,68,457 passengers.
- The national carrier, that applied the majority of air transfers beneath the mission, was supported by its budget carrier Air Bharat specific.
- The current VBM part ten has international and domestic schedules operational until Oct thirty one.
- Air Bharat specific (AIE) used its B-737-800 fleet to elevate agricultural manufacture, chiefly fruits and vegetables, to West Asian countries, Singapore and Kuala Lumpur.
- “Transport bubbles” or “air travel arrangements”, temporary arrangements between 2 countries aimed toward restarting industrial rider services once regular international flights area unit suspended as a results of the pandemic, area unit in situ.

Topic 39. COUNCIL OF EUROPEAN UNION

Importance for Prelims: International Organisations



The Council of the eu Union approved conclusions on a ecu Union strategy for cooperation within the Indo-Pacific to bolster its strategic focus to contribute to regional stability at a time of “rising challenges and tensions within the region.

- The Council tasked the High Representative and therefore the Commission with advocating a Joint Communication on cooperation within the Indo-Pacific by Gregorian calendar month 2021.
- The EU can aim to push effective rules-based multilateralism, reiterating its support for association (Association of South East Asian Nations) spatial relation, a degree conjointly stressed by Bharat.

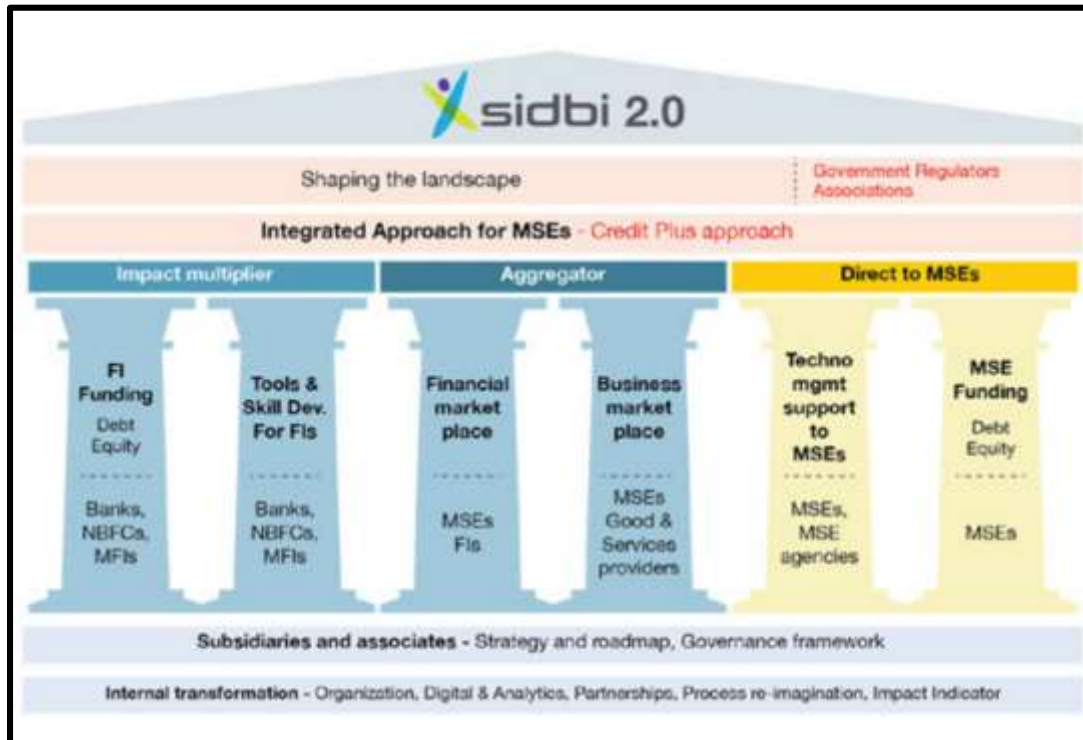
Council of the eu Union:

- It is a component of the primarily bicameral EU assembly (the different legislative body being the eu Parliament) and represents the manager governments (Minister) of DB; 9-the EU’s member states.
- In the Council, government ministers from every EU country meet to debate, amend and adopt laws, and coordinate policies. The ministers have

the authority to commit their governments to the actions united on within the conferences.

Topic 40. SIDBI

Importance for Prelims: National Organisations



Sivasubramanian Ramann from Tamil Nadu has taken charge because the Chairman and manager of the little Industries Development Bank of Republic of India (SIDBI).

- It could be a statutory body that was established on ordinal Apr 1990 beneath AN Act of Indian Parliament.
- It acts because the Principal financial organisation for Promotion, finance and Development of the small, little and Medium Enterprise (MSME) sector similarly as for co-ordination of functions of establishments engaged in similar activities
- Its mission is to facilitate and strengthen credit flow to MSMEs and address each monetary and biological process gaps within the MSME eco-system.
- It is one in every of the four All {india|India|Republic of Republic of India|Bharat|Asian country|Asian nation} monetary establishments regulated and supervised by the Federal Reserve Bank of India.

Topic 41. PATENTS

Importance for Prelims: Economy



Researchers at the Indian Institute of Technology-Madras (IIT-M) have filed 184 patents throughout the year 2020, as well as sixty five international ones.

- A patent is associate degree belongings right.
- A patent is associate degree perquisite granted for associate degree invention, that may be a new product or method that meets conditions of novelty, non-obviousness, & industrial use.
- A patent provides the owner with the correct to determine however – or whether or not – the invention will be employed by others.

Criteria for issue Patents in India

- **Novelty:** it ought to be new (not printed earlier + no previous Public Knowledge/ Public Use in India)
- **Non obviousness:** It should involve an explicit step (technical advanced compared to existing data + non-obvious to an individual sure-handed within the relevant field of technology)
- **Industrial use:** It ought to be capable of business

application Patents in India area unit ruled by “The patent Act 1970” that was amended in 2005 to form it compliant with journeys.

What can not be patented?

- Frivolous Invention: Invention that harms public order/Morality/ health of animals, plants & humans
- Methods of agriculture or husbandry
- Traditional data
- Computer Program
- Inventions associated with energy
- Plants & Animals
- Mere discovery of scientific principle

Patent (Amendment) Rules, 2020

- The central government has printed associate degree amended Patent (Amendment) Rules, 2020.
- The new rules have amended the format of a speech act statement that patentees & licensees area unit needed to annually experience the Patent Office.
- The format contains revealing the extent to that they need commercially worked or created the proprietary inventions obtainable to the general public within the country.
- The speech act is to be created within the type twenty seven format as prescribed underneath the Patent Rules, 2003.
- The patentees & licensees in addition because the Patent Office have blatantly unnoticed this statutory demand.
- There has been vital pressure from MNCs & the U.S. to try and do away with this demand.

Topic 42. OXYGEN THERAPY

Importance for Prelims: Science & tech

A small proportion of Covid-19 patients would like O support, once shortness of breath progresses to a a lot of acute condition.

- Oxygen medical aid, conjointly called supplemental O, is that the use of O as a medical treatment.
- This will embrace for low blood O, carbon monoxide gas toxicity, cluster headaches, and to take care of enough O whereas indrawn anesthetics ar given.
- Long-term O is usually helpful in folks with inveterately low O like from severe COPD or fibrosis.
- Oxygen will be given during a range of the way as well as nasal tubing, face mask, and within a chamber.
- Oxygen is needed for traditional cell metabolism. too high concentrations will cause O toxicity like respiratory organ harm or end in metabolic process failure in people who ar susceptible.
- The use of O in medication became common around 1917.
- It is on the planet Health Organization's List of Essential Medicines.

Topic 43. WORLD PRESS FREEDOM INDEX

Importance for Prelims: International Reports

Recently, the Reporters without boundaries (RSF) has discharged the 2021 edition of World Press Freedom Index.

- It ranks one hundred eighty countries, topped by Kingdom of Norway followed by European nation and Denmark, whereas State of Eritrea is at rock bottom.
- China is hierarchal 177, and is barely higher than D.P.R.K. at 179 and Turkmenistan at 178.
- In the South Asian neighbourhood, Nepal is at 106, Sri Lanka at 127, Myanmar (before the coup) at a hundred and forty, West Pakistan at one hundred forty five and People's Republic of Bangladesh at 152.
- The report aforesaid that Asia Pacific's authoritarian regimes have used the Covid-19 pandemic to excellent their ways of totalitarian management of data.
- India has not slipped any on the globe Press Freedom Index 2021.
- India is hierarchal 142 once it had systematically fell down from 133 in 2016.

About World Press Freedom Index

- It is AN annual report printed once a year since 2002 by Reporters without boundaries (RSF).
- It may be a analysis combined with quantitative knowledge on abuses and acts of violence against journalists throughout the amount evaluated.
- The countries are given scores starting from zero to a hundred, with zero being the most effective 0possible score and a hundred the worst, ever since the 2013 index.
- The Index ranks one hundred eighty countries and regions in keeping with the extent of freedom obtainable to journalists.

- It doesn't rank public policies notwithstanding governments clearly have a significant impact on their country's ranking.

Topic 44. Centre for Cellular and Molecular Biology CCMB

Importance for Prelims: National Organizations

Scientists at Centre for Cellular and biology, at the forefront of sequencing the SARS-CoV-2 ordering, can culture the double mutant strain B.1.617 and alternative variants of concern and check if antibodies of unsusceptible or recovered persons will neutralise the virus.

About Centre for Cellular and Molecular Biology:

- The Centre for Cellular & biology (CCMB) could be a premier analysis organization that conducts top quality basic analysis and trainings in frontier areas of recent biology, and promote centralized national facilities for brand spanking new and fashionable techniques within the knowledge domain areas of biology.
- It was came upon at first as a semi-autonomous Centre on Apr one, 1977 with the organic chemistry Division of the then Regional workplace (presently, Indian Institute of Chemical Technology, IICT) Hyderabad.
- It is found in Hyderabad and operates beneath the aegis of the Council of Scientific and Industrial analysis (CSIR).
- It is selected as “Center of Excellence” by the worldwide Molecular and Cell Biology 8Network, UNESCO.

DOUBLE MUTANT VARIANT B.1.617

- The variant is common in Republic of India and includes a number of process mutations, E484Q and L425R, that modify it to become a lot of infectious and evade antibodies.
- Though these mutations have one by one been found in many alternative corona virus variants, the presence of each mutations along were 1st found in some Corona virus genomes from Republic of India.
- Certain variants of the corona virus, as an example, B.1.1.7 and B.1.351 — are termed the “United Kingdom” and “South Africa” variant, severally, as

a result of they need mutations related to massive spikes in these countries or cut back the efficaciousness of vaccines and square measure termed “**variants of concern (VOC)**”.

- So far, solely 3 world VOCs are identified: the U.K. variant, the South African and therefore the Brazilian (P.1) lineage.

Topic 45. P-NOTES

Importance for Prelims: Economics

Investments through democratic notes (P-notes) within the capital of India market declined to Rs eighty nine,100 large integer at March-end, when touching thirty three months high level within the preceding month.

- Participatory Notes or P-Notes (PNs) square measure monetary instruments issued by a registered foreign institutional capitalist (FII) to a remote capitalist WHO needs to speculate in Indian stock markets while not registering themselves with the market regulator, the Securities and Exchange Board of Asian country (SEBI).
- P-Notes square measure Offshore by-product Investments (ODIs) with equity shares or debt securities as underlying assets.
- They offer liquidity to the investors as they'll transfer the possession by endorsement and delivery.
- While the FIIs got to report all such investments every quarter to SEBI, they have not disclose the identity of the particular investors.

Topic 46. TALCHER FERTILIZERS LTD. (TFL)

Importance for Prelims: Economy

Union cupboard has given its approval for the proposal of the Department of Fertilizers for the formulation of exclusive grant policy for organic compound created through coal chemical action route by Talcher Fertilizers restricted (TFL).

- Considering the strategic energy security and organic compound self-direction of the country, trying into the country's immense coal reserves, it's been set act with Talcher chemical restricted plant supported coal chemical action technology.
- The project shall improve handiness of chemical to farmers thereby boosting development of jap region and can save transport grant for provide of organic compound in jap a part of the country.
- It would assist in reducing organic compound imports to the tune of twelve.7 LMT each year resulting in savings in interchange.

Background

- Talcher Fertilizers Ltd. (TFL) could be a venture Company of 4 PSUs particularly Rashtriya Chemicals & Fertilizers (RCF), GAIL (India) Ltd. (GAIL), Coal Republic of India Ltd. (CIL) and chemical Corporation of Republic of India Ltd. (FCIL) that was incorporated on thirteenth Gregorian calendar month, 2015.
- TFL is restorative the erstwhile Talcher plant of chemical Corporation of Republic of India Ltd. (FCIL) by putting in place a currently greenfield organic compound Plant with the put in capability of twelve.7 large integer t each year (LMTPA). The calculable project price of the TFL organic compound 8project is 13277.21 large integer (+/-10%).

Topic 47. EPFO

Importance for Prelims: National Organisations

Net new enrolments with pension body EPFO grew by nearly twenty per cent to twelve.37 hundred thousand in Feb compared to an equivalent month in 2020, in keeping with the payroll information.

- It may be a statutory organization that manages provident fund and pension accounts for the men engaged within the organized sector in Asian nation.
- It implements the Employees' Provident Fund and Miscellaneous Provisions Act, 1952.
- The Employees' Provident Fund and Miscellaneous Provisions Act, 1952 provides for the establishment of provident funds for workers in factories and different institutions.
- It is run by the Ministry of Labour & Employment, Government of Asian nation.
- It is one amongst the World's largest Social Security Organisations in terms of patronage and therefore the volume of monetary transactions undertaken.

Topic 48. MEMORANDUM OF PROCEDURE FOR APPOINTMENT OF JUDGES

Importance for Prelims: Polity

Supreme Court timeline for judges' appointments a shift from note of Procedure.

- In setting a hard and fast timeline for the govt for the method of appointment of judges, the Supreme Court, in its ruling on Tues, has primarily altered the note of Procedure (MoP) through a judicial order, and aforesaid the govt should act on the names suggested for appointment at intervals four months.
- The MoP doesn't impose a timeline for the Centre to forward the recommendations. Methodology projected by Supreme Court for appointment of Ad-hoc Judges in HCs
- The court dominated that the magistrate of a supreme court might initiate the method of recommending a reputation if:
- The variety of judges' vacancies is quite twenty per cent of the sanctioned strength; or Cases in an exceedingly specific class ar unfinished for over 5 years; or
- More than ten per cent of unfinished cases ar over 5 years old; or
- Percentage of the speed of disposal is under the establishment of the cases either in an exceedingly specific subject material or usually within the court.
- The apex court aforesaid that the magistrate ought to prepare a panel of decides when personal interaction with the involved judge to require their consent.
- The court aforesaid the appointments will follow the procedure arranged down within the note of Procedure for appointment of judges.

- The variety of ad-hoc judges within the court ought to be within the vary of 2 to 5 for the nonce counting on the strength of the supreme court and also the drawback long-faced by it.
- The court dominated that just in case there's a necessity to represent a Division Bench to listen to a matter, it'd comprise of solely ad-hoc judges and not a mixture of ad-hoc and sitting judges.
- It additionally barred ad-hoc appointees from playing the other legal work i.e. advisory, arbitration or showing in court for shoppers.
- Their emoluments and allowances ought to get on a par with a permanent decide of that court minus the pension and that they are entitled to allowance/ perks/ perquisites as ar offered to permanent/ further judge(s).

About Ad-Hoc Judges & Acting Judges in supreme court

- The President will appoint punctually qualified persons as further judges of a supreme court for a brief amount not olympian 2 years when:
- There may be a temporary increase within the business of the high court; or
- There ar arrears of labor within the supreme court.
- The President may appoint a punctually qualified person as AN acting decide of a supreme court once a decide of that top court (other than the chief justice) is:
- Unable to perform the duties of his workplace because of absence or the other reason; or
- Appointed to act briefly as magistrate of that top court AN acting decide holds workplace till the permanent decide resumes his workplace.
- The Constitution provides that each the extra or acting decide cannot hold workplace when attaining the age of sixty two years.

Constitutional Provisions for Ad-Hoc Judges in supreme court

- The SC had asked all twenty five high courts to retort to a public interest proceedings filed by Lucknow-based non-profit organisation, Lok Prahari, soliciting for the appointment of retired judges as ad-hoc judges underneath Article 128 of the Constitution.
- Article 128 talks concerning “attendance of a retired decide” because the judge of the Supreme Court.
- It states that the magistrate of Republic of India at any time, with the previous consent of the President, might request anyone United Nations agency has control the workplace of a decide of the Supreme Court or the supreme court to take a seat and act as a decide of the Supreme Court.
- Under Article 224A, the retired supreme court judges are often appointed as ad-hoc judges to HCs.

Topic 49. RESPOND PROGRAMME

Importance for Prelims: Science & tech

Indian Institute of Technology, urban center aforesaid that the Indian house analysis Organisation (ISRO) has declared that it'll support eight joint analysis comes mooted by the house Technology Cell (STC), IIT-Delhi.

- The ISRO can support eight joint analysis comes mooted by the house Technology Cell (STC), Indian Institute of Technology (IIT) urban center.
- The comes are going to be coordinated by ISRO scientists at the house Applications Centre (SAC), the Liquid Propulsion Systems Centre (LPSC), the Semi-conductor Laboratory (SCL) and therefore the Vikram Sarabhai house Centre (VSSC).

RESPOND Programme of ISRO

- Under RESPOND, comes within the advanced area unitas of connectedness to house programme are inspired to be preoccupied by premiere universities/academic establishments.
- ISRO helps the tutorial establishments to determine the mandatory technical facilities and conjointly offer fellowships to analysisers to figure on innovative research topics.
- ISRO provides resource to educational establishments in India for conducting analysis and development activities associated with house Science, house Technology and house Applications.

Topic 50. INTERNATIONAL SPACE STATION (ISS) PROGRAMME

Importance for Prelims: Science & tech

Russia's space agency aforementioned it hoped to launch its own orbital station in 2025 as Russian capital considers retreating from the International orbiter programme to travel it alone.

- Roscosmos chief Dmitry Rogozin aforementioned work had begun on the primary module of a replacement station, once officers warned that Russia was considering birth control of the ISS, one in all the few thriving samples of cooperation with the West.
- The announcement came with tensions soaring with the West.
- Launched in 1998 and involving Russia, the us, Canada, Japan, and also the European area Agency, the ISS is one in all the foremost formidable international collaborations in human history.
- Russia's Deputy Prime Minister Yury Borisov aforementioned in recent days that Russian capital was considering whether or not to depart the ISS programme from 2025 as a result of the station's age. Roscosmos aforementioned that a choice on quitting the ISS had not nonetheless been created.
- Russia lost its monopoly for manned flights to the ISS last year once the primary thriving mission of U.S. company area X.
- Despite its much-lauded history — Russia this month marked the sixtieth day of Gagarin turning into the primary person in orbit — the country's area programme has struggled in recent years as president Vladimir Vladimirovich Putin is a lot of inquisitive about military technology than area exploration.

Topic 51. FALLING GAS & OIL PRODUCTION

Importance for Prelims: Economy

India's crude and fossil fuel production are falling systematically since 2011-12 with Covid-19 connected delays are among the key reasons cited by producers behind lower production.

Reasons for falling oil and gas production

- The consultants have noted that almost all of India's crude and fossil fuel production comes from ageing wells that became less productive over time.
- There was no simpler oil and gas on the market in Republic of India and producers would ought to invest in extracting oil and gas victimization technologically intensive means that from tougher fields like ultra-deep water fields.
- The consultants noted that the interest from foreign payers in oil and gas exploration in Republic of India had been low.
- The crude production in Republic of India is dominated by 2 major state-owned exploration and production corporations, ONGC and Oil Republic of India.

Recommendation of state to extend oil and gas production

- The government has asked ONGC to spice up its investments in explorations and increase tie-ups with foreign players to supply technological support in extracting oil and gas from troublesome oil and gas fields.
- The government could think about providing business incentives to draw in foreign players to India's upstream sector.
- The boost in oil and gas production has additionally been a key a part of the Aatmanirbhar Republic of India initiative and its goal to spice up the employment of fossil fuel in India's primary energy combine from this vi.2 per cent to fifteen per cent by a pair of030.

Impact of low oil and gas production

- The low domestic production of crude and fossil fuel makes Republic of India additional dependent on imports.
- It will increase the India's accounting Deficit yet as business deficit thanks to significant dependence on imports.
- The share of imports as a proportion of overall crude consumption in Republic of India has up from eighty one.8 per cent in FY2012 to eight7.6 per cent in FY2020.

Topic 52. TYRANNOSAURUS REX

Importance for Prelims: Environment

Recently, a study by paleontologists from Kingdom of The Netherlands have printed a report that bird-footed dinosaur had a most popular walking speed of simply five kmph that is concerning identical because the average walking speed of humans.

About bird-footed dinosaur

- It is taken into account the foremost dire feeding machine to possess evolved on Earth.
- It lived toward the tip of the Cretaceous period, around sixty six million to sixty eight million years past.
- It is believed that AN adult member of the species stood twelve feet tall and forty feet long, and weighed between five,000 to 7,000 kg.
- The archosaur peopled what's today's western u. s. and it absolutely was not found in Bharat.
- The fiercest of all Indian dinosaurs was most likely the Rajasaurusnarmadensis, followed by another specimen of the Abelisauridae family, the Indosuchusraptorius.
- The surround of the T. Rex may have extended from as so much as American state in North America up till United Mexican States within the south.

Topic 53. EARTH DAY 2021

Importance for Prelims: Environment

Recently, the planet Day is being celebrated round the world on Gregorian calendar month twenty second to pledge support for environmental protection.

- Earth Day was initial ascertained in 1970, once twenty million took to the streets to protest against environmental degradation.
- The event was triggered by the 1969 Santa Barbara oil spill, yet as different problems like smogginess and impure rivers.
- In 2009, the United Nations selected Gregorian calendar month twenty two as 'International Mother Earth Day'.
- The landmark Paris Agreement, that brings virtually two hundred countries along in setting a typical target to scale back international greenhouse emissions, was signed on Earth Day 2016.
- Earth Day aims to create the world's largest environmental movement to drive transformative amendment for folks and also the planet.
- Its mission is to diversify, educate and activate the environmental movement worldwide.
- According to the United Nations, International Mother Earth Day is widely known to cue every North American nation|folks|people} that the planet and its ecosystems give us with life and sustenance.

Significance of Earth Day 2021

- The year 2021 marks the 51st day of remembrance of the annual celebrations.
- The theme for Earth Day 2021 is 'Restore Our Earth'.
- The 2021 Earth Day theme focuses on natural processes, rising inexperienced technologies, and innovative thinking that may restore the world's ecosystems.

Topic 54. IDRIS DEBY ITNO

Importance for Prelims: Geography

Chad's President Idriss Deby Itno died from wounds sustained in battle once 3 decades in power, the military same, gap a amount of uncertainty during a country that's a key strategic ally of the West.

- He was killed in Gregorian calendar month 2021 whereas commanding forces fighting on the front against rebels from the Front for modification and Concord in Chad (FACT).
- The transformation Military Council, crystal rectifier by interim president Mahamat Idriss Déby, son of the late president, has assumed management of presidency.

About CHAD

- Chad could be a inland country in north-central continent. it's fringed by Socialist People's Libyan Arab Jamahiriya to the north, Sudan to the east, the Central African Republic to the south, Cameroon to the south-west, African nation to the southwest (at Lake Chad), and Niger to the west.
- Lake Chad, once that the country is known as, is that the second-largest land in continent.
- The capital N'Djamena is that the largest town.

Topic 55. BOAO FORUM FOR ASIA

Importance for Prelims: International Relations

While speaking at the annual Boao Forum, China's President Xi Jinping aforementioned that world rules can not be obligatory "by one or a couple of countries".

- Headquartered in China, the Boao Forum for Asia (BFA) is a global organization conjointly initiated by twenty nine member states.
- BFA holds its annual conference in Boao, Hainan on a daily basis.
- The foundation purpose of BFA was to push economic integration in Asia. Its mission now's to pool positive energy for the event of Asia and also the world.
- The initial conference of BFA was hung on Feb. 26-27, 2001 in Boao, Hainan Province, China
- The forum, typically called the "Asian Davos" is modelled on the globe Economic Forum command annually in Davos, Schweiz.
- Its mounted address is in Bo'ao, Hainan province, China, though the Secretariat relies in Peiping.

Topic 56. WORLD INNOVATION DAY

Importance for Prelims: Current Events

Recently ,World Innovation Day is well known.

- World creative thinking and Innovation Day (WCID) could be a world United Nations day celebrated on Apr twenty one to boost awareness round the importance of creative thinking and innovation in downside resolution with regard to advancing the United Nations property development goals.
- The 1st World creative thinking and Innovation Day was celebrated on Apr twenty one, 2018.
- World creative thinking and Innovation Day 2021 celebrates the artistic economy that consists of audiovisual merchandise, design, new media, humanities, business and visual arts.
- The creative thinking and innovation sector could be a extremely transformative sector of the planet economy in terms of financial gain generation, job creation and export earnings.

Topic 57. NEW COVID VACCINE POLICY

Importance for Prelims: Governance

It appears bound that several recipients pays over within the 1st 3 phases of vaccination, however key questions about accessibility, distribution, prioritisation stay nonreciprocal.

- India can dramatically expand its vaccination coverage from May Day, as well as everybody aged eighteen and older.
- The fourth part of the mass immunization programme incorporates many changes in immunizing agent policy.
- In the primary 3 phases, once health care staff, frontline staff, and people higher than the age of forty five were immunized, the Centre procured the whole amount of vaccines from the makers, liquid body substance Institute of Asian nation (Covishield) and Republic of India 8Biotech (Covaxin), and distributed it to states.
- The states distributed the stock to government vaccination centres, which administered the immunizing agent freed from value, and to non-public hospitals that charged recipients Rs 250 per dose.
- First, the fifty per cent basket of immunizing agent doses earmarked for states and personal hospitals within the open market are going to be wont to immunize those higher than the age of eighteen years.
- Second, free vaccination would be accessible in the least vaccination centres that receive doses from the govt. of Asian nation — with those doses, health care staff, frontline staff, and people higher than forty five are going to be immunized.

Topic 58. OPCW

Importance for Prelims: International Relations

India's bourgeois and Auditor General (CAG), has been appointed as external auditor of the Organisation for the Prohibition of Chemical Weapons (OPCW) at The Hague.

- The international organisation is associate freelance, autonomous alinement with a operating relationship with the international organization.
- The Organisation for the Prohibition of Chemical Weapons is that the implementing body of the Chemical Weapons Convention (CWC), that entered into force in 1997.
- The organisation was awarded the 2013 Nobel Peace Prize “for its intensive efforts to eliminate chemical weapons”.
- The international organisation Member States share the collective goal of preventing chemistry from ever once more being employed for warfare, thereby strengthening international security.
- To this finish, the Convention contains four key provisions:
- Destroying all existing chemical weapons below international verification by the international organisation.
- Monitoring industry to forestall new weapons from re-emerging.
- Providing help and protection to States Parties against chemical threats.
- Fostering international cooperation to strengthen implementation of the Convention and promote the peaceful use of chemistry.

The Chemical Weapons Convention prohibits:

- Developing, producing, acquiring, reposition, or holding chemical weapons.
- The direct or indirect transfer of chemical weapons.
- Chemical weapons use or military preparation to be used.

- Assisting, encouraging, or inducement different states to interact in CWC-prohibited activity.
- The use of riot control operations agents “as a technique of warfare.”