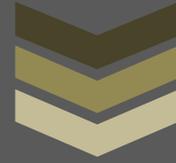


WEEKLY CURRENT AFFAIRS MAGAZINE for



U.P.S.C. - C.S.E.

SEPTEMBER-VOL-III-2021

16 September to 22 September



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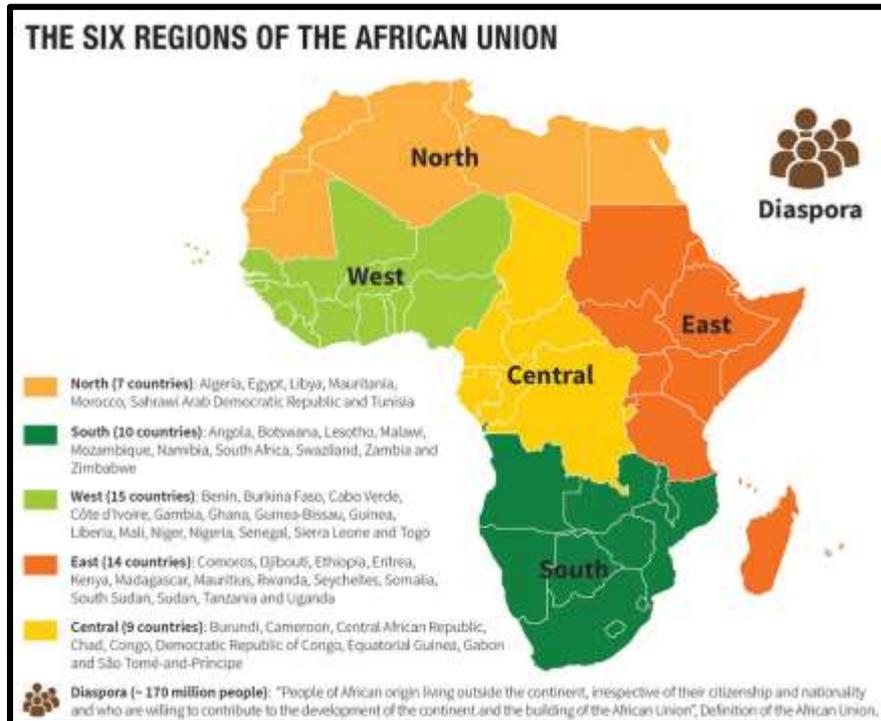
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Success is born of action...

Topic 1.AFRICAN UNION

Importance for Prelims: IR



African Union urges India to release provides

- The African Union (AU) could be a continental body consisting of the 55 member states that make up the countries of the African Continent.
- It was formally launched in 2002 as a successor to the Organisation of African Unity (OAU, 1963-1999).
- The AU is guided by its vision of “An Integrated, Prosperous and Peaceful continent, driven by its own citizens and representing a dynamic force within the global arena.”
- The African Union (AU) was formally launched in July 2002 in Durban, South Africa, following a call in September 1999 by its precursor, the Organisation of African Unity (OAU) to form a replacement continental organisation to create on its work.
- The most vital decisions of the AU are created by the Assembly of the African Union, a semi-annual meeting of the heads of state and

government of its member states.

- The AU's secretariat, the African Union Commission, relies in Addis Ababa. 34th African Union Summit was command nearly from February 6th to 7th 2021 organized by the African Union Commission (AUC).
- The theme of the 2021 AU Summit was “Arts, Culture and Heritage: Levers for Building Africa we Want”.

Topic 2.ALL INDIA DEBT & INVESTMENT SURVEY

Importance for Prelims: Economy

Debt of households surged between 2012 and '18: NSO

- All India Debt & Investment Survey is conducted by the National statistical office (NSO).
- The number of indebted households have up sharply in rural India, with the average debt popping up by 84 between 2012 and 2018, and COVID-19 has probably more doubled all households' borrowings by 2021.
- Rural households' average debt grew from ₹32,522 in 2012 to ₹59,748 by June 2018.
- Urban households' average debt magnified by 42nd within the same amount to little over little.20 lakh.
- The variety of households in debt as measured by the incidence of liability among surveyed households, had up to 35th in rural India from thirty one.4% within the previous survey, whereas it remained static at twenty two.4% for urban households. India's prime ten per cent urban households on a median own Rs one.5 large integer in assets as against Rs a pair of,000 at the lowest grade, reflective the sharp divide between the made and also the poor in cities.
- Poor households square measure happier in rural areas than in urban centres wherever the typical plus size of households at the lowest of the pyramid is simply Rs a pair of,000.
- This indicates that COVID compact households considerably.
- The latest survey on All India Debt & Investment Survey was conducted throughout the amount January – December, 2019 as a vicinity of 77th round of National Sample Survey (NSS).
- Prior to the present the survey was applied in NSS twenty sixth round (1971-72), 37th round (1981-82), 48th spherical (1992), 59th round

(2003) and 70th round (2013).

- The main objective of the survey on Debt & Investment was to gather basic quantitative data on the assets and liabilities of the households as on June 30, 2018.
- Besides, the survey gathered data on the number of cost incurred by the households throughout the Agricultural Year 2018-19 (July-June), under totally different heads, like residential buildings, farm business and non-farm business.
- The present survey was cover the whole Indian Union and information were collected in 2 visits (Visit 1: January-August, 2019 and Visit 2: September – December, 2019) from constant set of sample households.

Topic 3.PRODUCTION-LINKED INCENTIVE (PLI) SCHEME FOR AUTO SECTOR

Importance for Prelims: Economy



EXCLUSIVE INVESTMENT FORUM
Infinite opportunities

INVEST INDIA.GOV.IN

Production Linked Incentive Scheme (PLI) for Large Scale Electronics Manufacturing

- Incentive:** 4% to 6% on incremental sales (over base year) of goods manufactured in India
- Target Segments:** Mobile phones and specified electronic components
- Eligibility:** Subject to thresholds of incremental investment and incremental sales of manufactured goods
- Tenure of the Scheme:** Five years subsequent to the base year as defined (FY19-20)

Auto sector gets ₹26,058-crore PLI theme to push new tech, clean fuels

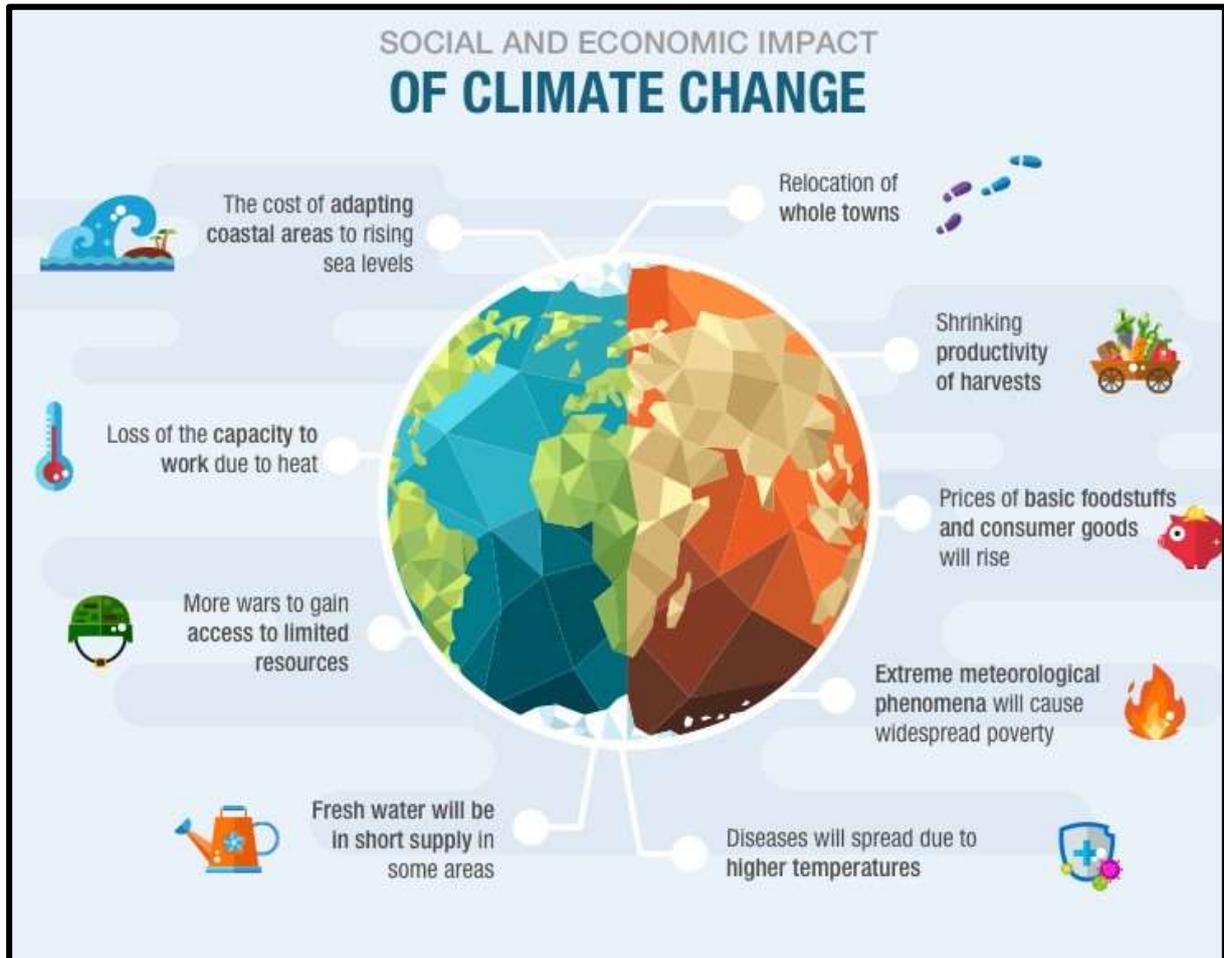
- The Union cabinet approved a PLI (Production linked Incentive) theme for the auto sector to promote advanced technologies, as well as clean energy, with incentives of ₹26,058 crore to be provided over 5 years.
- The auto sector is anticipated to draw in recent investments of over ₹42,500 crore within the 5 years and progressive production of over ₹2.3-lakh crore with the introduction of the PLI theme.
- Also approved was a PLI theme for the drone trade, with associate

degree allocation of ₹120 crore spread over 3 financial years.

- It is anticipated to bring recent investments of over ₹5,000 crore and progressive production of over ₹1,500 crore.
- The PLI theme for the automotive sector together with the already launched PLI for Advanced Chemistry Cell (₹18,100 crore) and quicker Adaption of producing of electrical Vehicles (FAME) theme (₹10,000 crore) can provides a huge boost to manufacture of electrical vehicles.
- The PLI theme is open to existing automotive corporations further as new ones presently not within the automobile or auto components manufacturing business.
- The theme has 2 components.
- The initial, known as the Champion OEM scheme, could be a ‘sales worth linked’ arrange, applicable to Battery electrical and hydrogen fuel cell Vehicles of all segments.
- The second, the part Champion scheme, could be a ‘sales worth linked’ arrange for advanced technology components, utterly and Semi-Knocked Down (CKD/SKD) kits, vehicle aggregates of 2-wheelers, 3-wheelers, traveler vehicles, commercial vehicles and tractors.

Topic 4. CLIMATE CHANGE

Importance for Prelims: Environment



Climate change is real: India received 129% over normal rainfall September 14

- Some 48 per cent of India's total geographic region received 'large excess' rainfall September 14, 2021 per the India Meteorological Department's (IMD) rainfall information.
- The country, as a whole, received 129 per cent 'over normal' rain. The 48 per cent geographic region was touch 17 subdivisions, that received 'large excess' rain.
- Some 13 of those subdivisions recorded over 100 per cent 'above normal' rainfall.
- Subdivisions are geographical areas demarcated by IMD.
- They are supported the climatic conditions of a vicinity. Currently, there

are 36 meteorologic subdivisions in India.

- Gujarat — that is split into 2 subdivisions, Saurashtra and kutch and also the Gujarat region — as an entire received 951 per cent over traditional rain September 14.
- Odisha has been experiencing serious rain because of Depression since September 11, resulting in an increase in water levels within the Brahmani, Baitarani, Subarnarekha, Kushabhadra, Rushikulya and Devi rivers. Meanwhile, specialists have told this newsperson that climate change was inflicting the wettest days to become wetter and hottest days to become hotter in Odisha.
- Odisha has witnessed extreme weather this year — from heat waves to drought and flood-like conditions.
- Climate amendment was increasing the frequency of the formation of low pressure areas within the Bay of bengal, delivery unseasonal rains.

Topic 5.NATIONAL SECURITY COUNCIL (INDIA)

Importance for Prelims: Security

The National Security Council (NSC) of India is an govt government agency tasked with advising the Prime Minister's office on matters of national security and strategic interest.

- It was established by the previous Prime Minister of india AtalBihari Vajpayee on 19 November 1998, with Brajesh Mishra because the initial National Security adviser.
- Prior to the formation of the NSC, these activities were overseen by the Principal Secretary to the preceding Prime Minister.
- Members – Besides the National Security adviser (NSA), the Deputy National Security Advisors, the Ministers of Defence, External Affairs, Home, Finance of the government of india, and also the vice chairman of the NITI Aayog area unit members of the National council.
- PM will chair the meeting of NSC (for eg – PM chaired the meeting of NSC Post Pulwama to debate heightened tension with Pakistan).
- Other members could also be invited to attend its monthly conferences, as and once it's needed. Organisational structure
- The NSC is that the apex body of the three-tiered structure of the national security management system in India.
- The 3 tiers are the Strategic Policy cluster, the National Security advisory board and a secretariat from the Joint Intelligence Committee.

Topic 6. AUKUS

Importance for Prelims: IR



U.S., U.K., Australia form new partnership

- a new trilateral security partnership for the Indo-Pacific between Australia, the U.K. and the U.S. (AUKUS) was formed.
- The security grouping AUKUS can focus on advancing strategic interests within the IndoPacific region A central feature of the partnership would involve a trilateral 18-month effort to assist Australia acquire nuclear-powered submarines that are quieter, a lot of capable (than their standard counterparts) and might be deployed for extended periods, eager to surface less oftentimes.
- The partnership would also involve a new design of conferences and engagements between the 3 countries and also cooperation across rising technologies (applied AI, quantum technologies and undersea capabilities)

Topic 7.CHOLA DYNASTY PORT CITY IN TAMIL NADU

Importance for Prelims: History



Poompuhar: Scientists to digitally recreate province port town engulfed by sea 1,000 years past

- The Chola origin port town in province that nonexistent from maritime history around 1,000 years past are reaching to be digitally reconstructed by a pool led by the Department of Science and Technology.
- DST officers same there are thorough narrations in works of Sangam Tamil literature to infer that the town, placed thirty klick from the current Poompuhar town in southern tn, was submerged due to “kadalkol” or rising ocean levels.
- However, despite several studies on Tamil literature, social science,

history, epigraphy, underwater exploration and geosciences, the mystery of the precise location of initial establishment of Poompuhar, its age, later shifts, at the side of periods, time-series abstraction evolution at intervals the gift location at the mouth of river Cauvery, and so the explanations and periods of its extinction, keep unresolved.

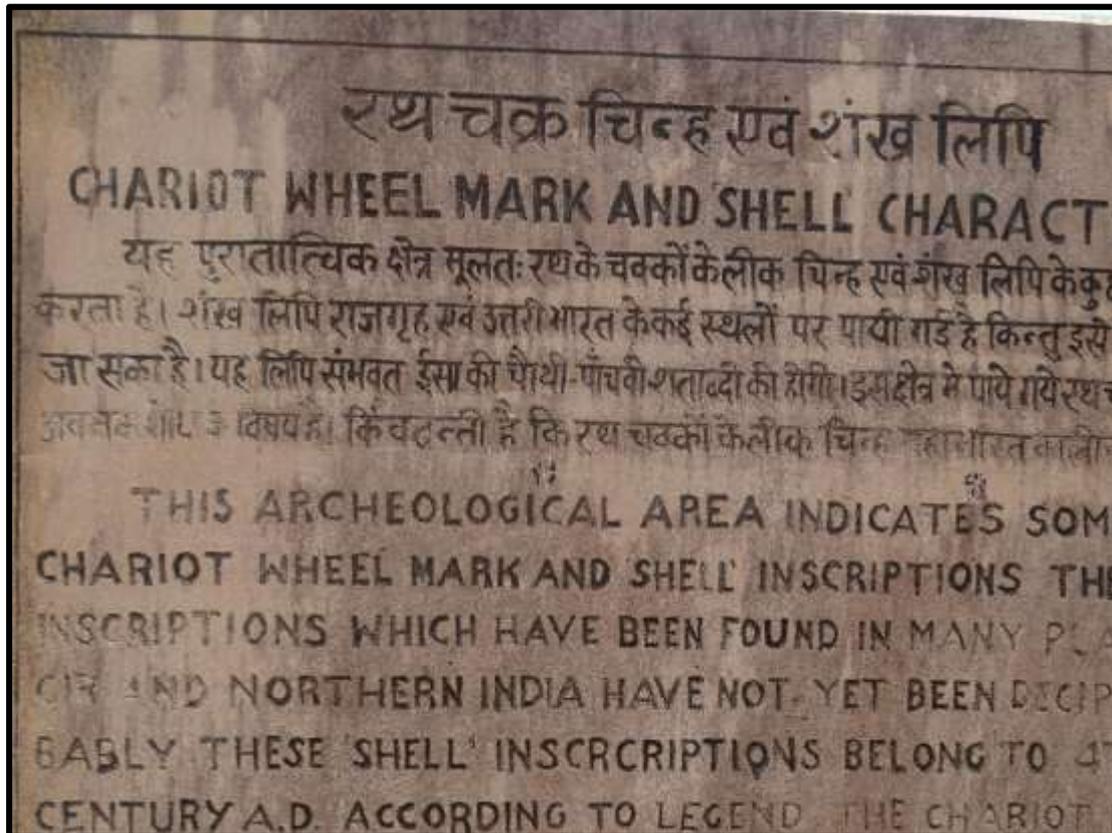
- The study involves underwater surveys and photography by remotely operated vehicles and ocean bed drilling, remote sensing-based geodynamic studies to bring out comprehensive information on the datum evolution and extinction.
- A similar project is being extended at the Dwarka town in Gujarat, too.
- The reconstruction of Poompuhar is of DST's Indian Digital Heritage project — an exhibition of its initial project 'Digital Hampi' is presently on show at the National museum.
- The Hampi project brings to life tangible and intangible heritage at intervals the house giving guests a peak into but marketplaces looked and so the musical pillars were created.
- For the Poompuhar project, the DST has recognized a network of 13 academicians and analysis institutions to trace the history of the traditional town. a number of these embody the school of Marine Sciences, Alagappa University, Academy of Marine Education and training University in town, National Institute of Ocean Technology et al.
- Researchers say that initial studies distributed by the Indian Remote Sensing Satellites show that {the city|the town|town} was established at the beginning at intervals the Cauvery Delta-A relating to 30km far from this town around 15,000 years past.
- It shifted a lot of 10 kilometer to the west to Delta-B around 11,000 years past and once more any 10 klick west to Delta-C around 8000

years past.

- Finally, it fully was re-established at this location at the mouth of the river Cauvery around 3,000 years past.
- The shifts occurred due to the continual rise of ocean levels and so the submersion of the deltas.

Topic 8.SHANKHALIPI SCRIPT

Importance for Prelims: Art and Culture



Gupta era temple in Etah has put focus back on shankhalipi script • Last week, the archaeological Survey of India (ASI) discovered remains of an ancient temple dating back to the Gupta period (5th century) in a very village in Uttar Pradesh's Etah district.

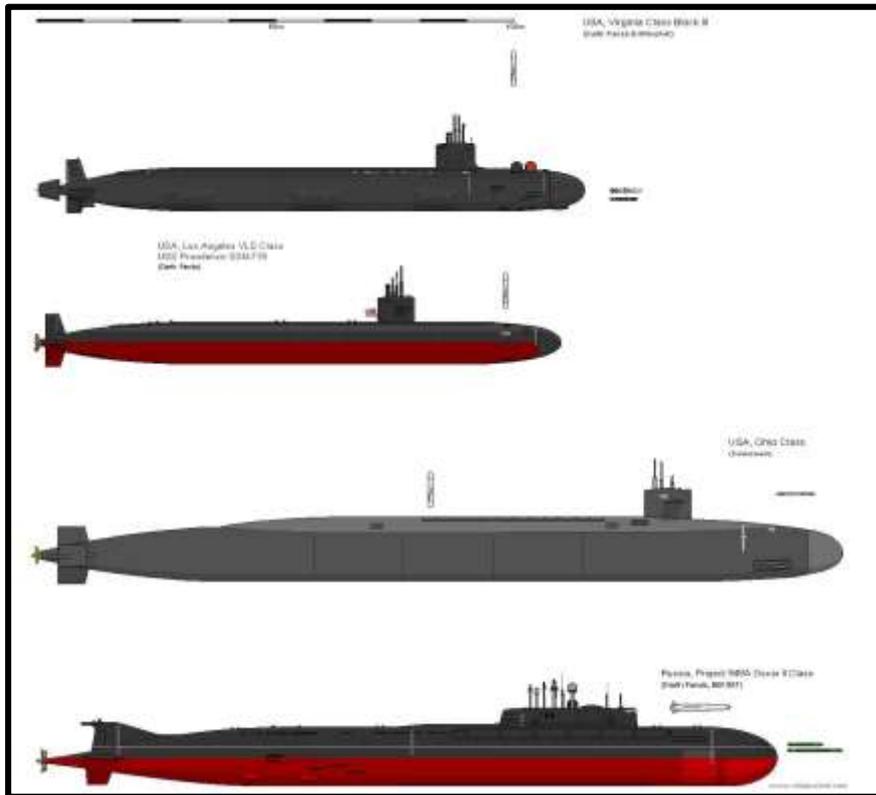
- The stairs of the temple had 'shankhalipi' inscriptions, that were deciphered by the archaeologists as saying, 'Sri Mahendraditya', the title of Kumaragupta I of the Gupta dynasty.
- The discovery becomes important since only 2 alternative structural temples from the Gupta age are found so far — Dashavatara Temple (Deogarh) and Bhitargaon Temple (Kanpur Dehat).
- In the 5th century, Kumaragupta I ruled for 40 years over north-central India
- The Guptas were the primary to create structural temples, clearly

completely different from the traditional rock-cut temples.

- Shankhalipi script Shankhalipi or “shell-script” could be a term utilized by students to explain ornate spiral characters assumed to be Brahmi derivatives that seem like conch shells or shankhas.
- They are found in inscriptions across north-central India and date to between the 4th and 8th centuries.
- A similar inscription was found on the rear of a stone horse sculpture from that amount that's at the present within the State depository at Lucknow.
- Both Shankhalipi and Brahmi are stylized scripts used primarily for names and signatures.
- The inscriptions consist of a little range of characters, suggesting that the shell inscriptions are names or auspicious symbols or a mixture of the 2.
- The script was discovered in 1836 on a brass shaft in Uttarakhand's Barahat by English scholar James Prinsep, who was the commencement editor of the Journal of the Asiatic Society of Bengal.
- Prominent sites with shell inscriptions embody the Mundeshwari Temple in Bihar, the Udayagiri Caves in Madhya Pradesh, Mansar in Maharashtra and a few of the cave sites of Gujarat and Maharashtra.
- In fact, shell inscriptions also are rumored in Indonesia's Java and Borneo.
- Scholars have tried to decipher shell script however haven't been self-made.
- Shankhalipi is found to be etched on temple pillars, columns and rock surfaces.
- No such inscriptions with dates or numbers are reported to this point as their chronology are often determined by the objects on that they're written.

Topic 9. NUCLEAR-POWERED SUBMARINE

Importance for Prelims: Security



The US, UK, and Australia proclaimed a brand new defence deal, under that America and Britain can facilitate Australia deploy nuclear-powered submarines within the Pacific region.

- The nuclear-powered submarines can provide Australia military service heft within the Pacific, wherever China has been significantly aggressive.
- While the US and Britain have had the aptitude for many years, Australia has ne'er had an n-sub.
- China has nuclear-powered submarines, still as submarines which will launch nuclear missiles.
- A nuclear-powered submarine offers a navy the aptitude to succeed in so much out into the ocean and launch attacks.
- Unlike typical submarines, that are typically thought of useful for defensive functions, the power of a U-boat to travel long distances, at a

better speed, while not being detected offers a nation the power to shield its interests aloof from its shores.

- In the context of the AUKUS agreement, nuclear-powered submarines can provide the Royal Australian Navy the aptitude to travel into the South China ocean, wherever China is progressively obtaining aggressive, to shield its assets and conduct patrols — despite the fact that this has not been Triticum spelta out by the 3 countries.
- The US has within the past shared its propulsion technology solely with UK, in accordance with the nuclear energy sharing arrangement that the 2 countries have had since 1958.
- A U-boat is assessed as an “SSN” under the USN hull organisation, whereby ‘SS’ is that the image for submarine, and ‘N’ stands for nuclear.
- A U-boat which will launch flight missiles is named “SSBN”.
- Conventional diesel-engine submarines have batteries that keep and propel — although not in no time — the vessel underwater.
- The lifetime of these batteries will vary from some hours to some days.
- The newer Air-Independent Propulsion (AIP) submarines have extra fuel cells that enable them to remain underwater for extended and move quicker than the traditional vessels.
- However, the fuel cells are used only at strategic times, once the endurance to stay submerged is needed.
- Both typical and AIP subs have to be compelled to come back to the surface to recharge their batteries victimization the diesel motor.
- The diesel motor also propels the vessel on the surface.
- However, the fuel cells of AIP will solely be charged at on-land stations, not whereas baffled.
- The nice advantage of an SSN is that its nuclear-powered propulsion offers the submarine a close to infinite capability to remain dived.

- Since it's propelled by a nuclearpowered engine instead of by batteries, it doesn't need to emerge on the surface in the least, except to make full provides for the crew.
- SSNs are ready to move quicker underwater than the conventional submarines.
- Added along, these benefits enable a navy to deploy these submarines faster and at farther distances.

Do you know?

- At present only 6 countries have nuclear powered submarine

Does India have nuclear-powered submarines?

- Yes, India is among the Six Nations that have SSNs. the opposite 5 are the US, the UK, Russia, France and China. india has had the capability since it got the Soviet-built K-43 Charlie-class SSN in 1987.
- Commissioned with the Red Fleet of the ussr in 1967, it was hired to the Indian Navy, and was rechristened INS Chakra.
- The submarine was decommissioned in 1991. In 2012 India got another Russian SSN on a 10-year lease, known as INS Chakra 2.
- In the mean solar time, India was engaged on building its own SSN, and therefore the 1st Indian nuclear submarine, the INS Arihant, was commissioned in 2016.
- A second Arihantclass submarine, INS Arighat, was on the Q.T. launched in 2017, and is likely to be commissioned shortly.
- After it incontestible the potential to launch nuclear weapons in 2018, the INS Arihant is currently classified as a Strategic Strike nautilus or SSBN, which implies it's a nuclear-powered ballistic submarine.
- INS Arihant is very important as a result of it completes India's nuclear triad, which implies that the country has the capability to launch nuclear missiles from land, aircraft, and submarine.

Topic 10. UNITED NATIONS CHILDREN'S AGENCY UNICEF

Importance for Prelims: IR



UNICEF report calls for schools to reopen in pandemic-hit countries

- The United Nations children's agency, UNICEF, has urged education authorities to reopen schools as shortly as attainable in countries wherever millions of students are still not allowed to come to classrooms 18 months into the pandemic.
- Schools in around 17 countries stay absolutely closed, whereas those in 39 countries stay part closed, per a report discharged by UNICEF.
- Among those "almost completely closed" are colleges typically attended by nearly 77 million students in Bangla Desh, Venezuela, Saudi Arabia, Panama and Kuwait.
- Pupils from the six countries represent quite more than the 131 million students worldwide that have missed more than three-quarters of their in-person learning, said UN agency.

- The report said teachers ought to be prioritised for vaccines, once health workers and people most in danger, to shield them from community transmission.
- Students could also be safer at home, however the availability of computers, mobile phones and web, and therefore the uneven quality of education, are among challenges they still face.

Topic 11.MURA-DRAVA-DANUBE (MDD)

Importance for Prelims: Environment



UNESCO declares world's initial 5-country part reserve in 'Amazon of Europe'

- The UNESCO September fifteen, 2021, selected Mura-Drava-Danube (MDD) because the world's initial 'five-country part reserve', per a statement by the world Wide Fund (WWF) for Nature.
- The part reserve covers 700 kilometres of the Mura, Drava and danube rivers and stretches across Austria, Slovenia, Croatia, Hungary and Serbia.
- The total space of the reserve — a million hectares — within the questionable 'Amazon of Europe', makes it the most important riverine protected space on the continent.
- The strategy's aim is to regenerate 25,000 km of rivers and shield 30 per cent of the european Union's land area by 2030.
- MDD's recognition "was a mandate to all or any 5 countries to jointly advance the protection and advance of the Mura-Drava-Danube space and boost property business practices".
- The reserve is home to flood plain forests, gravel and sand banks, stream

islands, oxbows and meadows.

- It is home to continental Europe's highest density of breeding white-tailed eagle (more than 150 pairs), likewise as species like the tiny larid, stork, otters, beavers and sturgeons.
- It is additionally a very important annual resting and feeding place for more than 250,000 migratory birds, per WWF.
- Almost 900,000 folks board the part reserve.
- Additional comes for nature and folks are already being enforced within the space.
- They have a combined funding of around twenty million Euros and are co-financed by the european Union.
- These comes place stream advance, property business practices enhancing cross-border cooperation into focus.
- One such project is that the Interreg danube international Programme-funded Amazon of Europe Bike trail, a long-distance sport trail following the Mura, Drava and river landscapes for over 1,250 km.
- About biosphere Reserve: biosphere Reserve (BR) may be a designation by UNESCO for representative elements of natural and cultural landscapes extending over large areas of terrestrial or coastal/marine ecosystems or a mix of each.
- Biosphere Reserves tries to balance economic and social development and maintenance of associated cultural values along side the preservation of nature.

It has three-part structure:

Core areas:

- .It is most protected area of a biosphere reserve and free from human interference.
- It might contain endemic plants and animals.

Buffer Zone:

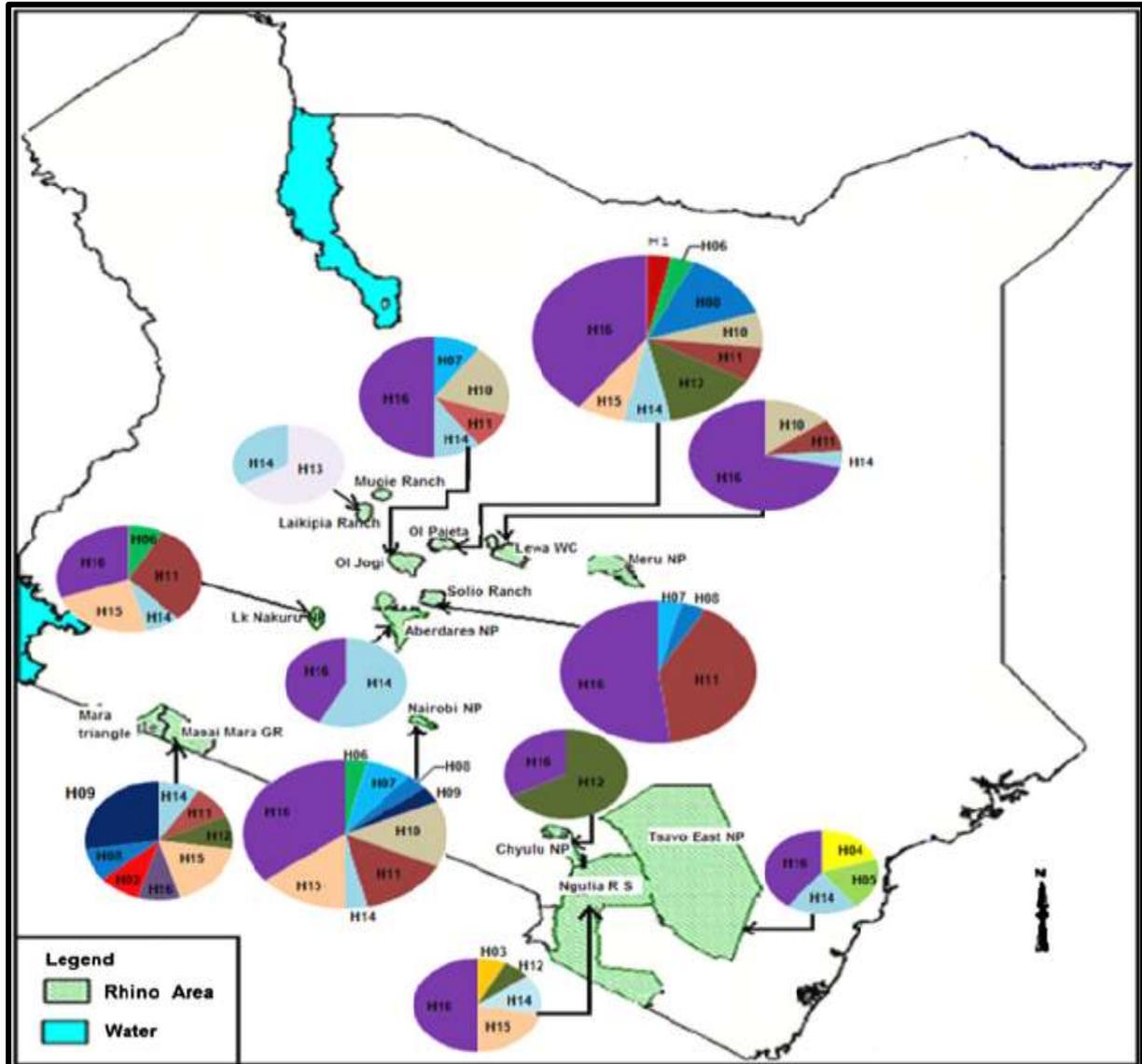
- It is around the core areas and facilitate within the protection of core areas. Some activities like restoration, restricted business, fishing, grazing, analysis and educational activities etc. are allowed.

Transition zone:

- It is that the zone of cooperation wherever human activities and conservation are tired harmony (Ex- settlements, croplands, managed forests and areas for intensive recreation and alternative economic uses etc. are done).
- Biosphere Reserves in India.

Topic 12. RHINOCEROUS

Importance for Prelims: Environment



Assam to destroy nearly 2,500 rhino horns; to preserve few as exhibits

- The Assam cabinet determined to destroy over 2,000 rhino horns that are preserved in government treasuries across the state throughout the past four decades.
- The horns, that were appropriated from poachers and traders of animal components or recovered from dead rhinos within the state's national parks and life sanctuaries from 1979 until currently, are kept in 12 district treasuries at this time.

- Though there's no scientific basis, rhino horns are a part of ancient medicine in some Asian countries like China and Vietnam. Each horn, that is formed up keratin (found in hair, nails), is valued over thousands of dollars, resulting in rampant killing of rhinos in Asia and Africa.
- Assam is home to the world's largest population of one-horned rhinos. In keeping with a 2018 census, there are nearly 2,650 rhinos within the state with around 2,400 of them targeted in Kaziranga park.
- Rhinos are listed in Schedule 1 of wildlife (Protection) Act, 1972 as a vulnerable animal and there's a global ban on trade of rhino horns under CITES (Convention on International trade in endangered species of wild Flora and Fauna).
- Three species of rhino—black, Javan, and Sumatran—are critically vulnerable.
- Today, a very low population of Javan rhinos is found in exactly one park on the northern tip of the Indonesian island of Java.
- A taxonomic category of the Javan rhino was declared extinct in Vietnam in 2011.
- Successful conservation efforts have led to a rise within the variety of bigger one-horned (or Indian) rhinos, from around 200 at the flip of the 20th century to around 3,700 today.

Topic 13.AGNI-V MISSILE

Importance for Prelims: Science and Tech



China questions India's missile project

- Agni-V is that the most advanced surface-to-surface indigenously built ballistic missile.
- It could be a three-stage, solid fuel 17-metre tall, and is capable of carrying a nuclear warhead of regarding 1.5 tonnes.
- Agni-V could be a fire and forget missile, that once laid-off can't be stopped, except by an fighter missile.
- It has been developed under the Integrated missile Development Programme (IGMDP).
- Agni- 5 is that the worldwide surface-to-surface nuclear capable missile.
- It is that the latest in India's "Agni" family of medium to worldwide vary missiles.
- Agni-5 features a vary of over 5,000 klick and may carry a few 1500-kg warhead.
- It will target the majority of Asia as well as Pakistan and China and Europe.

- The 17-metre long Agni-5 Missile weighs regarding 50 tonnes and could be a terribly agile and modern instrument.
- India has already joined an elite club of states that possess the ICBM launch capability once the maiden test-firing of Agni-V was with success conducted in Apr, 2012.
- Only the 5 permanent members of the united nations security council – China, France, Russia, the united states and UK, along side Israel, have thus far possessed such long-range missiles.

Topic 14. NATIONAL FINANCIAL REPORTING AUTHORITY (NFRA)

Importance for Prelims: Economy

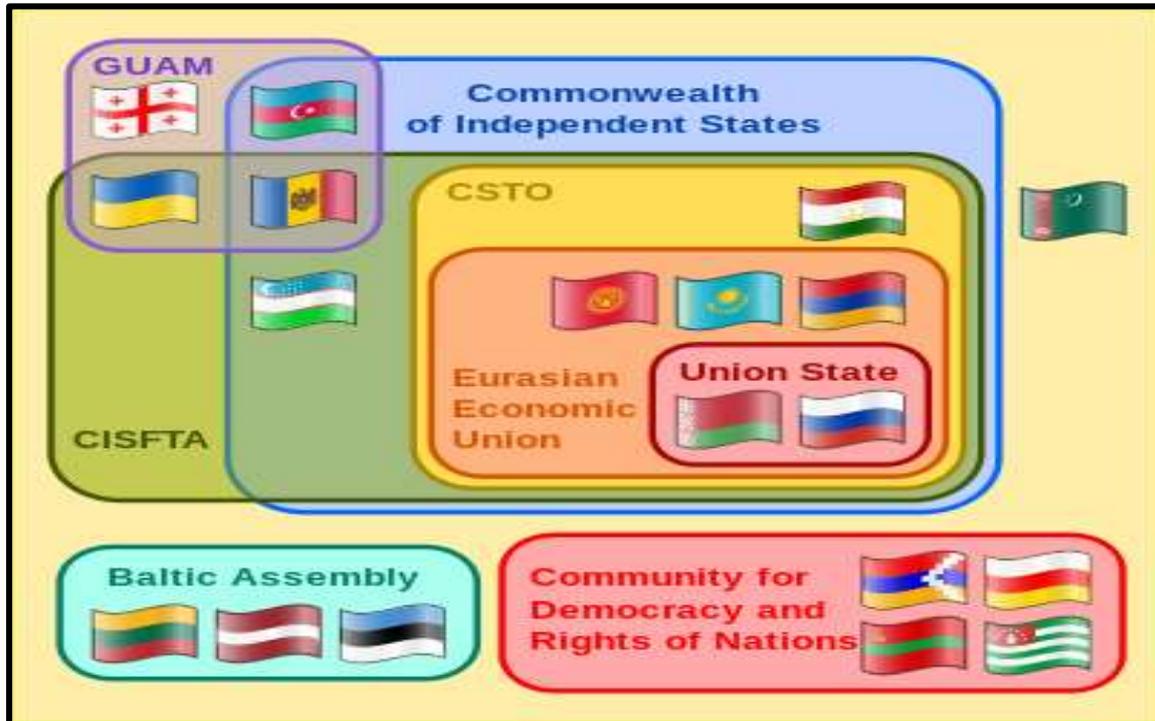
‘NFRA needs to have standalone legislation

- The NFRA might take action against auditors for skilled misconduct however once it came to different functionaries of a corporation who have the responsibility for money reportage, penal powers still be vested with the Centre.
- NFRA operated under a single section of the companies Act, the section failed to give comprehensive coverage of all the functions and powers that are needed to constitute the authority as a ‘corporate money reporting regulator’.

Topic 15.COLLECTIVE SECURITY TREATY ORGANIZATION

(CSTO)

Importance for Prelims: IR

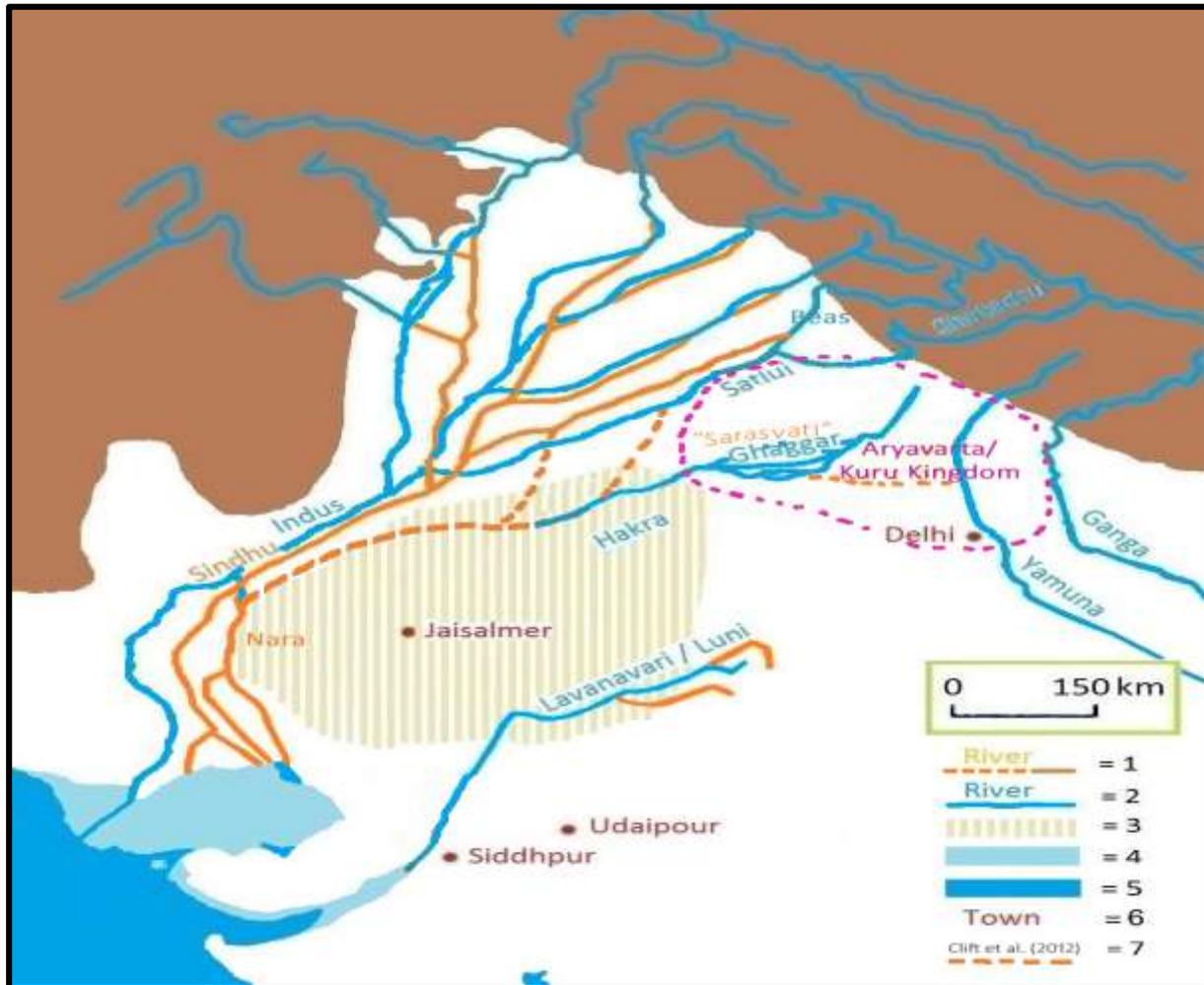


’Russia led coalition to hold military drills on afghanistan border

- CSTO is an intergovernmental military alliance that was signed on 15 could 1992.
- In 1992, six post-Soviet states belonging to the Commonwealth of freelance States signed the peace pact (also referred to because the “Tashkent Pact” or “Tashkent Treaty”).
- Its vi members are: Hayastan, Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan.
- **Headquarters:** Moscow, Russia.
- The objectives of the CSTO is to strengthen peace, international and regional security together with cyber security and stability, the protection on a collective basis of the independence, territorial integrity and sovereignty of the member states.

Topic 16.SARASWATI RIVER

Importance for Prelims: Geography



New study challenges argument on existence of Saraswati river

- A study conducted by the Centre of Excellence for analysis on the Saraswati river (CERSR) at Kurukshetra University has ended that every one major archeologic sites in Haryana – Siswal, Rakhigarhi, Banawali, Bhirrana, Kunal, Balu, Thana – were located at a radial distance of but 500m from the paleochannels of Saraswati or the Drishadwati rivers.
- A paleochannel may be a deposit of sediment filling the course of associate ancient river.
- The study was conducted to seek out out why solely Saraswati river that was spatially sandwiched between Yamuna and Sutlej rivers went into

oblivion whereas all different rivers mentioned within the Rig Veda still exist. The new findings have shattered the idea that Saraswati river was a paleochannel of recent Sutlej river.

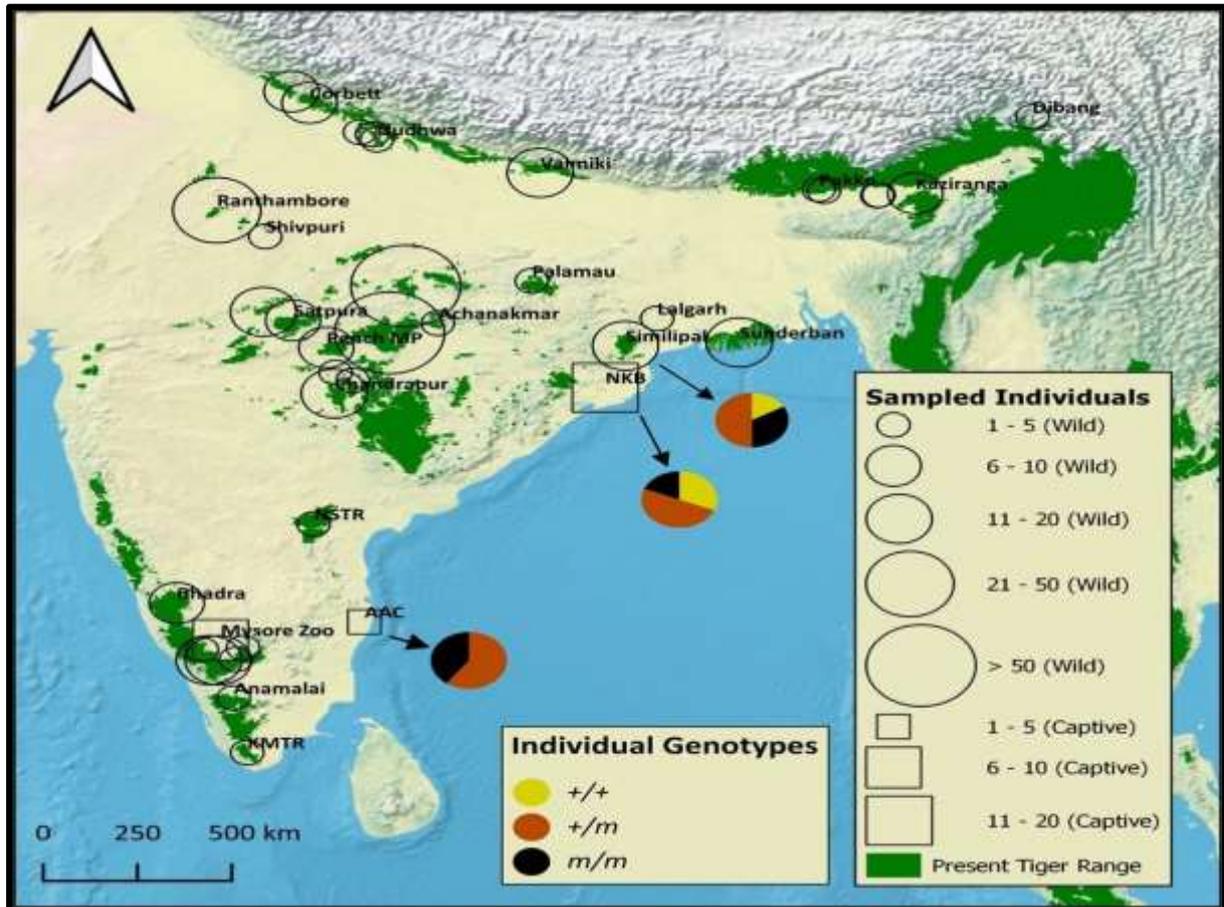
- A general belief has been created that Saraswati river was simply 10,000 years recent.
- Research meted out on Ghaggar-Hakra (GH) system that may be a any extension of Saraswati watercourse system unconcealed that the GH system was over 86,000 years recent.
- Harappan settlements in Haryana and Rajasthan organelle and prospered within the fertile channel bars and interfluves of this river system.
- The presence of great clay beds indicates that around 14,000 years, 6,000 years and 4,000 years past there was a weakening of monsoon and drought conditions that resulted in close to absence of flow within the channels.
- Saraswati river paleochannels shaped a dense internet of inter-connecting channels that were endlessly networked for over two,984km in Haryana.
- Saraswati river system has 2 major paleochannels. One passes through Yamunanagar, Ambala, Kurukshetra, Pehowa, Kaithal, Jind, Fatehabad and Sirsa before getting into Hanumangarh in Rajasthan.
- The different that painted Drishadwati River, a vedic amount tributary of Saraswati, capable Yamunanagar, Karnal, Panipat, Sonapat, Jind and Hisar districts before passing through Rawatsar in Rajasthan.
- The study found that Saraswati river was flowing in Haryana till 1402 AD and so there was a explosive absence of flow within the channel thereafter.
- This abrupt amendment seems to be consequence of explosive modification or diversion of conducive channels for constructing 5 canals (western Yamuna canal) ranging from the foothills in Yamunanagar

whereby there was a substantial anthropogenetic rerouting of streams therefore on relieve oneself on the market in Fatehabad and Hisar.

- The channels of the Drishadvatiriver and therefore the Chautang stream are extensively utilized for routing this canal.
- Apart from this, natural factors comprising weakened summer monsoon, shrinkage of glacial cowl and melt waters, channel avulsion and channel capture, temperature change and tectonic disruption of the input channels within the lesser mountain chain piece of ground also contributed towards the gradual decay and supreme extinction of this mega river system.

Topic 17. BLACK TIGERS

Importance for Prelims: Environment



A team of scientists has resolved the genetic mystery of Simlipal's so-called black tigers

- The study found that a single genetic mutation in these tigers caused black stripes to broaden or spread into the chromatic background.
- Tigers have a distinctive dark stripe pattern on a light background of white or golden.
- A rare pattern variant, distinguished by stripes that are broadened and consolidated along, is additionally discovered in each wild and captive populations.
- This is understood as pseudo-melanism, that is totally different from true melanosis, a condition defined by unusually high deposition of

melanin, a dark pigment.

- While really melanistic tigers are yet to be recorded, pseudo-melanistic ones are camera-trapped repeatedly, and only, in Simlipal, a 2,750-km tiger reserve in Odisha, since 2007.
- Through whole-genome information and pedigree-based association analyses from zoo tigers, the study found that pseudo-melanism is linked to one mutation in TransmembraneAminoPeptidase q (Taqpep), a gene answerable for similar traits in alternative cat species. Black tiger sightings are claimed periodically a minimum of since 1773 once artist James Forbes painted a watercolour of 1 shot in Kerala. Similar claims were made up of Myanmar (1913) and China (1950s).
- Besides, pseudo-melanism is caused by a recessive (hidden) cistron. Long before 3 black tigers were camera-trapped in 2007, Simlipal well-appointed the primary confirmed record of the mutant in 1993 once a social group youth killed a pseudomelanistic tigress in self-defense.
- Pseudo-melanistic tigers are present in 3 zoos in Republic of India — Nandankanan (Bhubaneswar), Arignar Pakistani monetary unit Zoological Park (Chennai) and BhagwanBirsa Biological Park (Ranchi) — wherever they were born in captivity.
- All of them have ancestral links to at least one individual from Simlipal. survival of the fittest natural selection eliminates the weakest from a gene pool, and also the traits of the a lot of roaring get passed on.
- Niche modelling, the study aforementioned, shows higher frequency of melanistic leopards in darker tropical and semitropic forests than in drier open habitats.
- Likewise, darker coats could confer a selective advantage in each looking and avoiding hunters in Simlipal's tropical dampish deciduous and semi-evergreen closed-canopy forest, with a comparatively darker

understory.

- Meanwhile, India's northwestern tiger population shows higher mean relatedness between individuals (46%) and lower state (22%) than even Simlipal (38% and 28%). whereas Ranthambhore has been a genetic island for many years, tiger siblings were handpicked from this inbred population for repopulating Sariska.
- That is another study within the offspring.

Topic 18.GENERAL SHERMAN

Importance for Prelims: Environment

- General Sherman: world's largest tree threatened by California wildfires
- Two wildfires in CA – one referred to as the Colony fire and therefore the different referred to as Paradise – are burning through the sequoia parkland within the Sierra Nevada that's home to a number of the biggest trees within the world.
- Among these trees is that the world's largest tree popularly called General Sherman, that fire-fighters are currently making an attempt to protect from the blaze.
- While these sequoia trees are fairly fire-resistant, the “extraordinary intensity” of some of the wildfires will be overwhelming for the trees.
- The General Sherman tree is that the world's largest in terms of volume and exists within the large Forest sequoia grove of the national park.
- As per recent estimates, General Sherman is concerning 2,200 years recent.
- It stands at a height of 275 feet (taller than the campanile of Pisa) and contains a diameter of 36 feet at the bottom.
- Even 60 feet higher than the bottom, the tree contains a diameter of 17.5 feet. Considerably, the burned area represents a 3rd of all sequoia grove space across the Sierra Nevada, the only area within the world wherever large sequoias occur naturally, giant sequoia trees have existed within the sequoia National Park for thousands of years and there are an calculable 2,000 such trees within the park.
- Firefighters are currently making an attempt to save lots of the world's largest tree and a few different large trees within the area by wrapping fire-resistant aluminium blankets onto the bases of the trees.

Topic 19.HOLOGRAMS

Importance for Prelims: Science and Tech



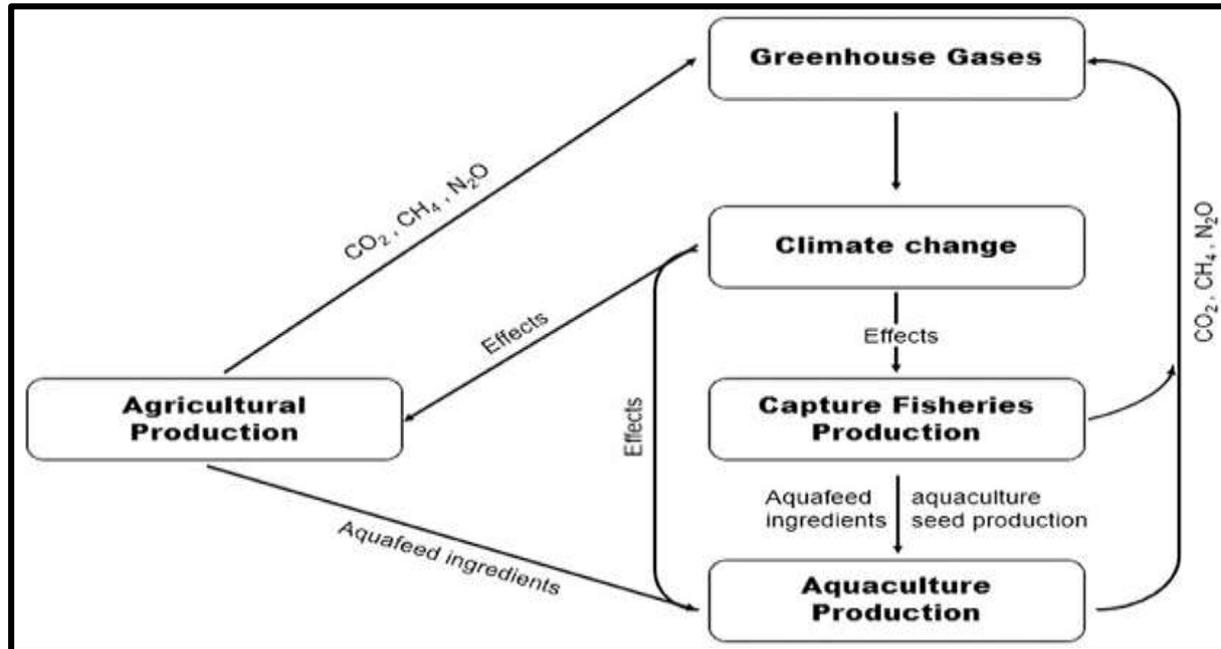
The tv show Star Trek: future Generation introduced millions of folks to the thought of a holodeck: an immersive, realistic 3D holographic projection of an entire environment that you simply may act with and even bit.

- In the 21st century, holograms are already being employed in an exceedingly kind of ways that like medical systems, education, art, security and defence.
- Scientists are still developing ways that to use lasers, modern digital processors, and motion-sensing technologies to make many different types of holograms that may amendment the means we tend to interact. Scientists are developing “aerohaptics”, making feelings of touch with jets of air.
- Those jets of air deliver a sensation of touch on people’s fingers, hands and wrists.

- In time, this might be developed to permit you to meet a virtual avatar of a colleague on the other side of the world and extremely feel their acknowledgement.
- It may even be the primary steps towards building one thing sort of a holodeck.
- To produce this sense of bit we tend to use reasonable, commercially out there components to try computer-generated graphics with carefully directed and controlled jets of air.
- In some ways that, it's a step on the far side this generation of virtual reality, that sometimes needs a telephone receiver to deliver 3D graphics and good gloves or hand-held controllers to supply perception feedback, a stimulation that sounds like bit.
- Most of the wearable gadgets-based approaches are restricted to controlling the virtual object that's being displayed.
- It's a contemporary variation on a 19th-century illusion technique called Pepper's Ghost, that excited Victorian theatregoers with visions of the supernatural onstage.

Topic 20. CLIMATE CRISIS MAY DESTROY AQUATIC FOOD SYSTEMS

Importance for Prelims: Environment



Climate crisis might destroy aquatic food systems, in keeping with a recent study published in Nature Food.

- Climate modification will put much of Africa, South and Southeast Asia in addition because the Indo-Pacific under ‘double jeopardy’ by destroying their marine and fresh systems.
- This might create risk to not only livelihoods, however economies of nations within the regions, if applicable measures are not taken in time to mitigate the crisis, in keeping with a recent study printed in Nature Food. Africa, South and Southeast Asia and therefore the Indo-Pacific face ‘high’ to ‘very high’ climate risk for one or additional food system outcomes by the middle of this century under a high-emissions scenario (RCP8.5).
- It additionally noted that countries that are among the best emitters of greenhouse gas emissions don't essentially face the best risk from climate

change.

- India, along side alternative South Asian countries, is at a ‘high’ risk to its aquatic food systems, in keeping with the study.
- India additionally has ‘high’ to ‘very high’ climate risk for 3 food system outcomes by the center of this century under a high-emissions, no-mitigation scenario.
- The study noted that countries with high climate vulnerability are projected to face compound climate risks across 3 or four of the food system outcomes, either in marine fisheries (primarily coastal Africa) or in fresh and deltaic fisheries and cultivation (South and geographical area and Central Africa).
- These totally different risk profiles across countries and regions call for region-specific and context-specific risk reduction interventions.
- In distinction, most countries in North America and Europe, in addition as Chile, Argentina, Australia and New Zealand, face ‘low’ to ‘medium’ climate risk across all food system outcomes for this era.
- The study was printed by Blue Food Assessment — a collaboration between Sweden-based Stockholm Resilience Centre, United States-based Stanford University and therefore the non-profit EAT.
- With a {larger|a bigger} magnitude of warming on large continental land plenty than within the ocean, fresh fisheries in some countries are projected to face ‘very high’ hazards by the mid-twenty-first century, particularly in water-stressed areas like northern Africa and therefore the middle east.
- In terms of nutrition, this might equate to reductions in aquatic food access and limit essential nutrients like iron, zinc, vitamin B complex and omega-3 fatty acid fatty acids in populations that are already at thresholds for deficiency.

- The report required imperative action to support the long property, resilience, and equity of aquatic food systems.
- It advised reducing actual climate hazards, greenhouse gas emissions reductions, as an example, in addition because the sensitivity of the production systems to those hazards.

Topic 21. AGREEMENT ON AGRICULTURE AT WTO

Importance for Prelims: Economy

WTO agri agreement tilted against developing nations: PiyushGoyal

- The Agreement on Agriculture (AoA) may be a World Trade Organisation treaty that focuses on reducing the agricultural support and subsidies given to domestic producers by countries.
- It is one in every of the most contentious agreements inside the WTO.
- The Agreement on Agriculture (AoA) is a WTO accord that was negotiated during the Uruguay Round of the overall Agreement on Tariffs and Trade (GATT) and formally legal in 1994 at Marrakesh, Morocco. The AoA came into impact in 1995.
- According to its provisions, developing countries were to complete their reduction commitments by 2000 and developed countries by 2004.
- The Least Developed Countries weren't needed to create any reductions.
- The Agreement covers products that are commonly considered a part of agriculture however excludes biological science and work product and conjointly rubber, sisal, jute, fiber and abaca.
- The focus of the AoA is that the elimination of what are known as “trade distorting” agricultural subsidies. consistent with the WTO, the aim of the Agreement is “to establish a fairer commerce system that may increase market access and improve the livelihoods of farmers round the world.”
- The WTO Agriculture Agreement provides a framework for the long reform of agricultural trade and domestic policies, with the aim of resulting in fairer competition and a less distorted sector.
- The Agreement covers: Market access — the utilization of trade restrictions, like tariffs on imports Domestic support — the utilization of subsidies and different support programmes that directly stimulate

production and deform trade Export competition — the utilization of export subsidies and different government support programmes that subsidize exports.

- Under the Agreement, WTO members conform to “schedules” or lists of commitments that set limits on the tariffs they will apply to individual product and on levels of domestic support and export subsidies.

Topic 22. NATIONAL CENTRE FOR BIOLOGICAL SCIENCES (NCBS)

Importance for Prelims: Government Bodies

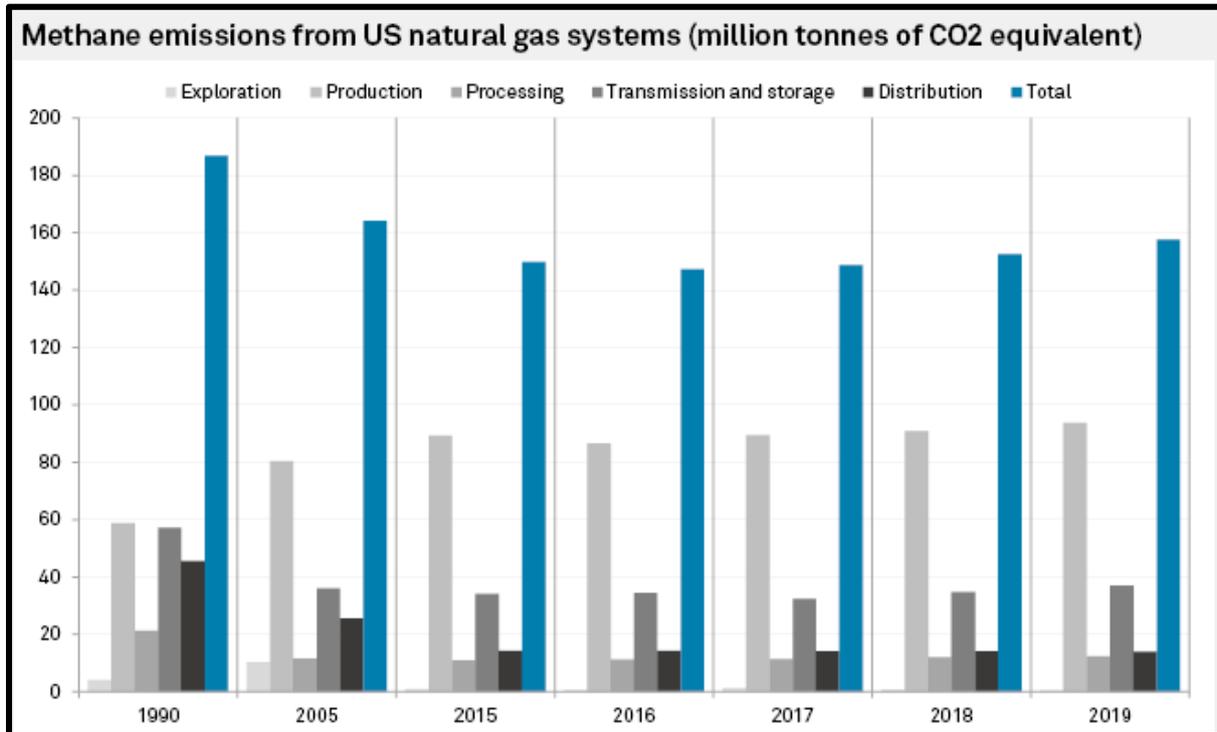


NCBS rapped for handling of scientific misconduct

- National Centre for Biological Sciences (NCBS) in Bangalore, Karnataka, may be a analysis centrespecialising in research project.
- It may be a a part of the Tata Institute of elementary analysis (TIFR) underneath the Department of energy of the government of India.
- The mandate of NCBS is basic and interdisciplinary analysis within the frontier areas of biology.
- The analysis interests of the faculty are in four broad areas starting from the study of single molecules to systems biology.
- NCBS focuses on elementary analysis from numerous fields of biology as well as biochemistry, Biophysics, Bioinformatics, neurobiology, Cellular Organization and Signalling, genetics and Development, Theory and Modelling of Biological Systems, Ecology and Evolution etc.

Topic 23.GLOBAL METHANE PLEDGE

Importance for Prelims: Environment



Biden unveils plan to cut paraffin emissions

- Global paraffin Pledge, a U.S.–EU led effort to chop methane emissions by a third by the end of this decade. Biden created the announcement at the major Economies Forum on Energy and Climate (MEF), hosted just about by the White House on Friday, during which leaders from many countries and therefore the EU, in addition as United Nations administrator AntónioGuterresand (India’s) atmosphere Minister BhupenderYadav, participated.
- Methane– Methane, a greenhouse gas, is eighty times tougher than carbon dioxide in terms of its heating capability.
- Approximately four-hundredth of methane emitted is from natural sources and regarding hour comes from human-influenced sources, as well as eutherian farming, rice agriculture, biomass burning so forth.
- Methane is gas that's found in little quantities in Earth’s atmosphere.

paraffin is that the simplest organic compound, consisting of one carbon atom greenhouse gas hydrogen atoms (CH_4).

- Methane could be a powerful greenhouse gas.
- It is burnable, and is employed as a fuel worldwide.
- Methane is created by the breakdown or decay of organic material and may be introduced into the atmosphere by either natural processes – like the decay of material in wetlands, the ooze of gas from underground deposits or the digestion of food by bovine – or human activities – like oil and gas production, rice farming or waste management.
- It is accountable for making ground-level ozone, a dangerous air waste material.

Topic 24.POSHAN MAAH

Importance for Prelims: Governance



‘Thematic’ POSHAN Maah to Be Celebrated Across the nation Throughout The Month of September As a locality of AzadiKaAmritMahotsav

- POSHAN Abhiyaan is Government of India’s flagship programme to boost nutritional outcomes for kids, adolescent girls, pregnant women and lactating mothers.
- POSHAN (Prime Minister’s Overarching theme for holistic Nutrition) Abhiyaan directs the eye of the country towards the matter of malnutrition and address it terribly } very mission-mode.
- Focusing on the aims of POSHAN Abhiyaan, Mission Poshan two.0 (Saksham Angan wadi and Poshan two.0) has been declared inside the Budget 2021- 2022 as associate degree integrated nutrition support programme, to strengthen nutritional content, delivery, reaching and outcomes with think about developing practices that nurture health, upbeat and immunity to unwellness and disease.
- POSHAN Abhiyaan is also a January Andolan or “People’s Movement” byincorporating inclusive participation of public representatives of native bodies, government departments of the States/UTs, social organizations

and thus the public and private sector at large.

- In order to make sure community mobilization and bolster people's participation, every year, the month of september is well known as POSHAN Maah across the country.

Topic 25.STABLE COINS

Importance for Prelims: Economy

Washington worrying concerning Stable Coins

- Stable Coins can be the foremost ironically named innovation of the cryptocurrency era, a minimum of within the eyes of the many Washington regulators and policymakers.
- These digital currencies promise to take care of their value, that is mostly pegged to a government currency just like the dollar or euro, by wishing on stable support like bank reserves and short debt.
- They are exploding in quality as a result of they're a sensible and low cost thanks to interact in cryptocurrency.
- Stable Coins have touched from virtual nonexistence to a quite \$120 billion market in a very few short years, with the majority of that growth within the past twelve months.
- But several are designed a lot of like slightly risky investments than just like the dollars-andcents cash money they claim to be.
- And to this point, they're slipping through regulative cracks.

What is a stablecoin?

- A stablecoin — stablevalue coin, may be a style of cryptocurrency that's usually pegged to Associate in Nursing existing government-backed currency.
- To promise holders that each \$1 they place in can stay value \$1, Stable Coins hold a bundle of assets in reserve, sometimes short-run securities like money, government debt or cash equivalent.
- Stablecoins are helpful as a result of they permit folks to interact a lot of seamlessly in cryptocurrencies that operate as investments, like Bitcoin.
- They kind a bridge between old-world cash and new-world crypto.
- But several stablecoins are backed by sorts of short debt that are vulnerable to bouts of illiquidity, which means that they'll become laborious or not possible to trade throughout times of bother.
- Despite that somewhat shaky backing, the Stable Coins themselves promise to operate like absolutely safe holdings.

Types of Stable Coins – are all of them equally risky?

- Stable Coins aren't all created equal. the most important stablecoin, Tether, says it's roughly 0.5 invested in a very style of short company debt known as commercial paper, supported its recent disclosures.
- Other Stable Coins claim completely different backing, giving them completely different risks. The common thread is that, while not commonplace revealing or news needs, it's laborious to grasp precisely what's behind a stablecoin, therefore it's powerful to determine what proportion risk it entails.
- It is additionally difficult to trace simply however Stable Coins area unit getting used. Stable Coins could facilitate those seeking to sidestep a number of public policy goals connected to our ancient banking and monetary system: anti-money-laundering, tax compliance, sanctions and also the like.

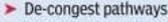
What will regulators do?

- The bother with Stable Coins is that they slip through the regulative cracks.
- They aren't classified as bank deposits, that the Fed and also the office of the comptroller of the Currency have restricted ability to oversee them.

Topic 26.COMMISSION FOR AIR QUALITY MANAGEMENT (CAQM)

Importance for Prelims: Environment

DAYS NUMBERED FOR AGENTS OF POLLUTION

<p>WITHIN 30 DAYS</p> <p>Introduce intelligent traffic systems for lane-driving</p> <p>Introduce wet/mechanized vacuum sweeping of roads</p> <p>Ensure strict action against unauthorized brick kilns</p> <p>Evolve a system of reporting of garbage/municipal solid waste burning through mobile-based applications and other social media platform linked with Central and state-level control rooms</p> <p>Ensure carriage of construction material in closed/covered vessels</p>	<p>IMMEDIATE</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">  </div> <div style="width: 60%;"> <ul style="list-style-type: none"> ➤ Strict action against visibly polluting vehicles ➤ Install weigh-in-motion bridges at Delhi borders to prevent overloading ➤ Take steps to prevent parking of vehicles in the non-designated areas </div> <div style="width: 20%;">  </div> <div style="width: 60%;"> <ul style="list-style-type: none"> ➤ Introduce early alarm system about traffic congestion on major routes ➤ Consider introducing plan for flexi/staggered timings to minimize peak movement of vehicles on the road </div> <div style="width: 20%;">  </div> <div style="width: 20%;">  </div> <div style="width: 60%;"> <ul style="list-style-type: none"> ➤ Take stringent action against open burning of biomass/leaves/tyres, etc and submit periodic status reports </div> <div style="width: 20%;">  </div> <div style="width: 60%;"> <ul style="list-style-type: none"> ➤ Take steps for retrofitting of diesel vehicles with particulate filters ➤ Set-up helpline in states/UTs for taking action against reported non-compliance </div> </div>
<p>WITHIN 60 DAYS</p> <ul style="list-style-type: none"> ➤ Take steps to expedite early completion of western and eastern peripheral expressways and submit completion schedule ➤ Maintain pothole-free roads for free-flow of traffic to reduce emissions and dust 	<p>WITHIN 90 DAYS</p> <ul style="list-style-type: none"> ➤ Take steps for installation of remote sensor based PUC system ➤ Promote battery-operated vehicles
<p>WITHIN 120 DAYS</p> <p>Launch action plan for switching over to natural gas by industries, wherever feasible</p>	<p>WITHIN A YEAR</p> <p>Take steps for setting up of biomass-based power generation units to avoid biomass burning</p>
<p>WITHIN 180 DAYS</p> <p>Take steps for blacktopping/pavement of road shoulders to avoid dust</p>	<p>Prohibit use of coal in hotels and restaurants and eliminate use of kerosene for cooking in Delhi</p> <p>Take steps for maximizing coverage of LPG/PNG for domestic cooking purposes with intention of achieving 100%</p>

Thermal plant closure on the cards once air quality worsens: Panel

- The Commission for Air Quality Management (CAQM) is deliberating partial or complete shutdown of thermal power plants in Delhi-NCR, as a part of its emergency measures once pollution hits its peak in winter.
- Even if power production is cut by thermal power plants, the gap can be filled by renewable energy sources.
- The emergency live are going to be taken looking on pollution supply knowledge fed by a modelling portal known as call web.
- The progressive step was a part of the currently dissolved Environment Pollution (Prevention and Control) Authority's graded Action set up till 2020.
- Some measures of GRAP can be preserved within the returning post-harvest season.
- The reconstituted 18-member CAQM was started by the Centre in April and may issue directions "for the aim of protective and up the standard of air within the capital Region and abutting areas" in metropolis, Haryana, Uttar Pradesh, punjab and Rajasthan.
- Another regional action set up urged by the statutory body is asking coal-based industries to modify to cleaner PNG.
- CAQM has asked state governments to expedite incentive-based e-

vehicle policy.

- On stubble burning, share of that in Delhi's PM2.5 pollution rose to 400th last year, the member same the commission is focusing on unmoved management measures through farm machinery or the recently introduced bio-decomposer.
- To management dirt pollution, the commission has taken a cue from the Noida model below that self-reporting and activity of pollution before and once major construction by companies is obligatory.
- It has directed different states to follow this model, knowledge of that is relayed to the various pollution management boards and therefore the Central Pollution panel.
- CQMS Action set up — Partial or complete conclusion of thermal power plants within the NCR region as an emergency live in winter — Asking states to hurry up ev policy — directive coal-based industries to modify to PNG — Self-reporting by construction agencies to cut dirt pollution — unmoved management of crop residue till assortment purpose infrastructure is ready — call web, a time period foretelling model on pollution sources.
- It are going to be upgraded by next year once that even ward level pollution sources can be known.
- — Ban on vehicles coming into metropolis while not RFID tags regarding Commission for Air Quality Management (CAQM) The Commission for Air Quality Management was fashioned by an ordinance in October 2020, the “Commission for Air Quality Management (CAQM) in capital Region and abutting Areas Ordinance 2020”.
- Chairperson: To be chaired by a government official of the rank of Secretary or Chief Secretary.
- The Commission are going to be a statutory authority.
- The Commission can follow bodies like the central and state pollution management boards of metropolis, Punjab, Haryana, UP and Rajasthan.
- It can have the powers to issue directions to those state governments on problems referring to pollution.
- Exclusive jurisdiction over the NCR, together with areas in Haryana, Punjab, Uttar Pradesh and Rajasthan, in matters of pollution, and can be operating together with CPCB and ISRO, apart from the respective state governments.

Topic 27.CONSTITUTIONAL PROVISIONS REGARDING EDUCATION

Importance for Prelims: Polity

Across the Aisle: Inequity and injustice obvious, writes P Chidambaram •
'Education' may be a State List subject.

- List II (State List), Entry 11, as originally enacted, read: Education, together with universities, subject to the provisions of entries 63, 64, 65 and 66 of List I and entry 25 of List III.
- List III (Concurrent List), Entry 25, as originally enacted, read: vocational and technical coaching of labour.
- But by 42 Constitutional modification Act 1976, Entry 25 of the coincident List was re-written as: Education, together with technical education, medical education and universities, subject to the provisions of entries 63, 64, 65 and 66 of List I; vocational and technical coaching of labour.

Topic 28.NATIONAL E-GOVERNANCE SERVICES LTD. (NESL)

Importance for Prelims: Economy

NeSL knowledge as of could thirty one shows that the amount of debtors in India stood at 93.02 lakh.

- According to the proof provided by the Ministry of company Affairs to the Parliamentary committee on Finance in August, NeSL knowledge as of could 31 shows that the amount of debtors in India stood at 93.02 lakh.
- The amount of underlying debt is Rs 136 large integer large integer.
- Not all creditors report debts and defaults to NeSL because it isn't necessary to file default certificates issued by it with the NCLT whereas filing petitions to commence corporate insolvency resolution process (CIRP).
- About NeSL– NeSL is India's first info Utility and is registered with the economic condition and Bankruptcy Board of India (IBBI) under the aegis of the economic condition and Bankruptcy Code, 2016 (IBC).
- The company has been created by leading banks and public establishments.
- The primary role of NeSL is to function a repository of legal proof holding the data referring to any debt/claim, as submitted by the monetary or operational mortal and verified and attested by the parties to the debt.
- NeSL works towards Time-bound resolution by providing verified information to creditors and to Adjudicating Authorities that don't need additional authentication.
- Default intimation to Creditors joined to a debtor once any mortal files a default against a debtor Mitigation of knowledge imbalance between parties to a debt Superior credit watching by creditors an united

statement of outstanding balance between parties to a debt Facilitate all stakeholders of the IBC system by leveraging info Technology to realize objective of code.

Topic 29. WORLD HEALTH ORGANIZATION

Importance for Prelims: IR

Former UK PM Gordon Brown currently who ambassador for international health finance.

- About WHO – the world Health Organization (WHO) may be a specialised agency of the UN liable for international public health.
- The WHO Constitution states its main objective as “the attainment by all peoples of the best attainable level of health”.
- Headquartered in Geneva, Switzerland, it's six regional offices and 150 field offices worldwide.
- It is an inter-governmental organization and works unitedly with its member states typically through the Ministries of Health.
- The WHO provides leadership on international health matters, shaping the health analysis agenda, setting norms and standards, articulating evidence-based policy choices, providing technical support to countries and observation and assessing health trends.
- A publication, the world Health Report, provides assessments of worldwide health topics.
- Its role publicly health – providing leadership on matters vital to health and fascinating in partnerships wherever joint action is needed; shaping the analysis agenda and stimulating the generation, translation, and dissemination of valuable knowledge; setting norms and standards and promoting and observation their implementation; articulating moral and evidence-based policy options; providing technical support, catalysing amendment, and building property institutional capacity; and observation the health scenario and assessing health trends.
- CRVS (civil registration and very important statistics) to supply observation of important events (birth, death, wedding, divorce). •

Governance – World Health Assembly the world Health Assembly (WHA) is that the legislative and supreme body of WHO. based mostly in Geneva, it usually meets yearly in could.

- It appoints the director-general each 5 years and votes on matters of policy and finance of who, as well as the planned budget.
- It additionally reviews reports of the manager board and decides whether or not there are areas of labor requiring additional examination.
- Executive Board The Assembly elects 34 members, technically qualified within the field of health, to the manager board for three-year terms.
- The main functions of the board are to hold out the selections and policies of the Assembly, to advise it, and to facilitate its work.
- Director-General the pinnacle of the organization is that the director-general, elective by the world Health Assembly.
- The term lasts for 5 years, and Directors-General square measure usually appointed in could, once the Assembly meets.

How WHO is funded?

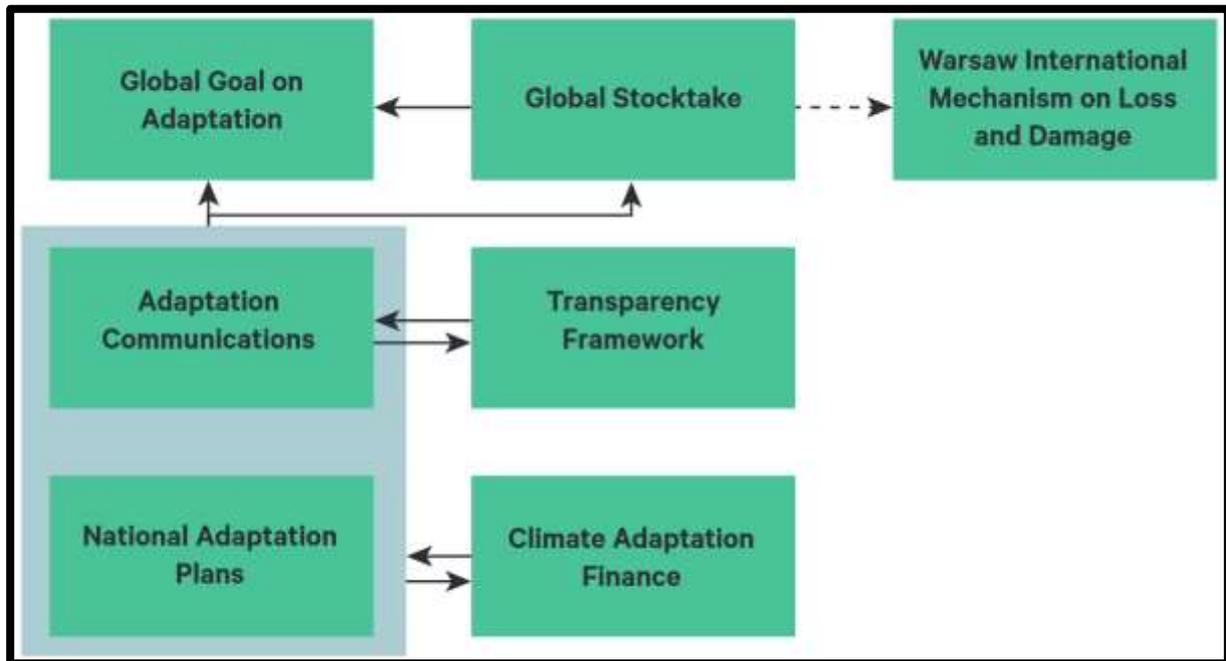
- WHO gets its funding from 2 main sources: Member States paying their assessed contributions (countries' membership dues), and voluntary contributions from Member States and alternative partners.
- Assessed contributions (AC) are a percentage of a country's Gross Domestic Product (the share is in agreement by the UN General Assembly).
- Member States approve them each 2 years at the planet Health Assembly.
- They cowl but 200th of the entire budget.
- The remainder of WHO's finance is within the variety of voluntary contributions (VC), for the most part from Member States similarly as from alternative United Nations organizations, intergovernmental

organizations, philanthropic foundations, the personal sector, and alternative sources. Core voluntary contributions (CVC) Core voluntary contributions square measure absolutely unconditional (flexible), that means World Health Organization has full discretion on however these funds ought to be wont to fund the programmatic work of the Organization.

- These represent 3.9% of all voluntary contributions. necessary Assessed Contributions, 2020 in \$ millions.

Topic 30. TRANSBOUNDARY CLIMATE RISKS (TCR)

Importance for Prelims: Environment



Transboundary climate risks impact agricultural production in each country:
Report

- Transboundary climate risks are climate risks that cross national borders.
- Climate modification impacts agricultural production all round the globe.
- It doesn't respect national borders.
- A recent report has provided a systematic, quantitative assessment of trans boundary climate risks (TCR) to trade in six major agricultural commodities — maize, rice, wheat, soya, sugarcane and coffee.
- The study showed that each country is exposed to transboundary climate risks.
- Countries in Europe and North America area each extremely exposed to TCRs through foreign imports.
- This is particularly problematic for importers that depend upon trade for food security or different economic activity.

- The small Island Developing States and small globally integrated countries like Singapore and Sweden also are vulnerable.

Topic 31. NATIONAL ANTI-PROFITTEERING AUTHORITY (NAA)

Importance for Prelims: Economy

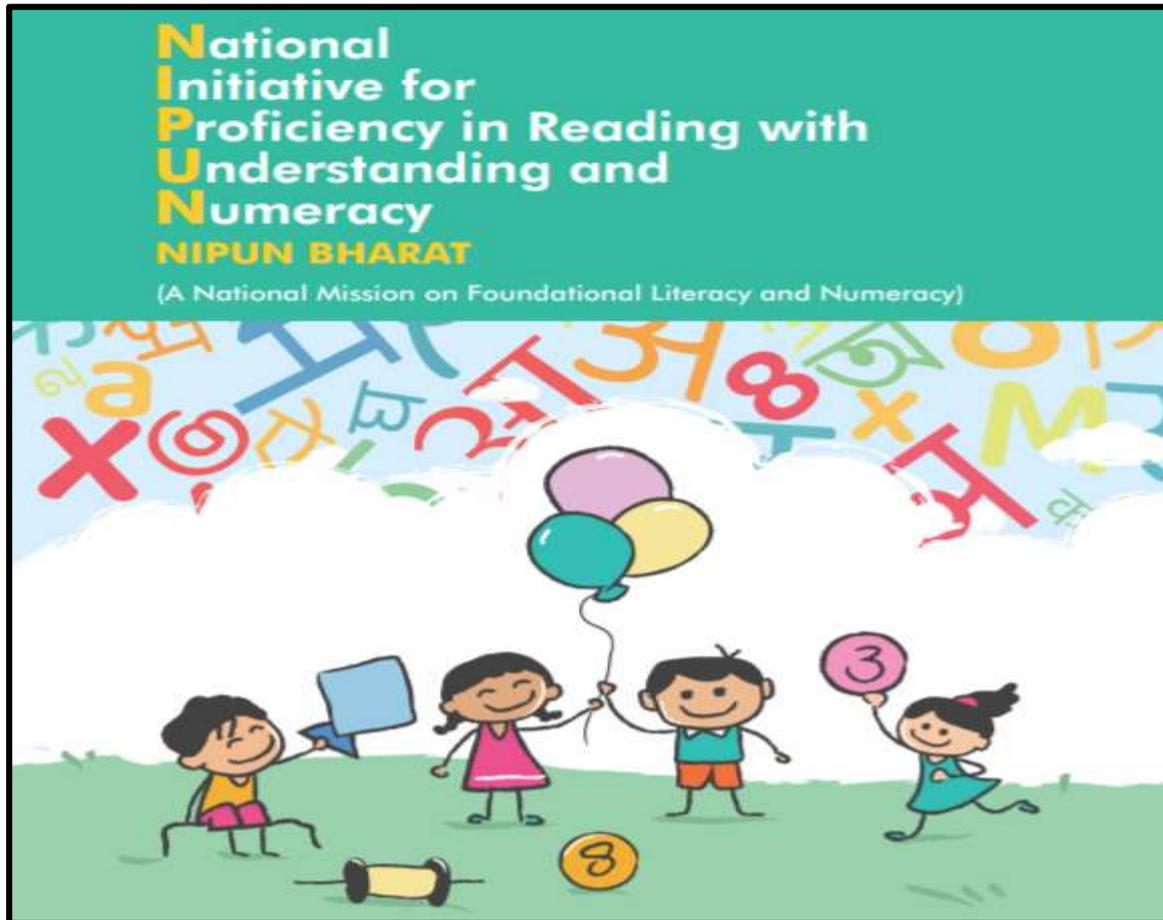
Anti-profiteering body gets 1-year extension

- The GST Council has set to extend the tenure of the National Anti-Profiteering Authority (NAA) for an added year whereas an alternate are explored within the Competition Commission of India (CCI).
- This could be a second extension for the Authority whose term can currently continue till November 30, 2022 regarding NAA – NAA comes under the Finance Ministry and was established under Section 171 of CGST Act.
- It started operating with result from December 1, 2017.
- It was supposed as a transformation arrangement with a particular limit visible of the explosive changes in tax levels because of the introduction of GST, that was followed by periodic rationalisation.
- The law empowers NAA to work out whether or not reduction in rate of input tax credit (ITC) has been passed on to the customers or not, by lowering costs.
- If not, then the Authority might ask for reduction of costs, levy penalty and in extreme cases will even order cancellation of registration.
- NAA consists of a md and 4 technical members.
- The authority desires a assemblage of Chairman and 3 technical members.
- The orders of the NAA are often appealed against solely within the high court.
- About Competition Commission of India (CCI) CCI is a component of the company Affairs Ministry.
- It has been established through the Competition Act 2002. it's mandated to eliminate practices that have an adverse result on competition,

promote and sustain competition, shield the consumers' interests and guarantee freedom of trade.

Topic 32.NIPUN BHARAT SCHEME

Importance for Prelims: Government Schemes



When the Centre launched its NIPUN India theme in July 2021 to boost foundational attainment and numeracy among primary school students, participants from non-Hindi speaking States complained that they were those left feeling illiterate.

- Ministry of Education has launched a National Initiative for Proficiency in Reading with Understanding and skill (NIPUN Bharat), for guaranteeing that each child within the country essentially attains foundational literacy and numeracy (FLN) by the tip of Grade 3, by 2026-27.
- The National Mission that has been launched under the aegis of the centrally sponsored theme of SamagraShiksha, can concentrate on

providing access and holding youngsters in foundational years of schooling; teacher capability building; development of prime quality and varied Student and Teacher Resources/Learning Materials; and trailing the progress of every child in achieving learning outcomes.

- The Department of faculty Education and literacy, Ministry of Education (MoE) are the implementing agency at the national level and can be headed by a Mission Director.
- The mission can concentrate on youngsters getting on cluster {of 3|of three} to 9 years together with pre-school to Grade 3.
- The children who are in school 4 and 5 and haven't earned the foundational skills are provided individual teacher steerage and support, peer support and age acceptable and supplementary stratified learning materials to acquire the required competencies.
- The goals and objectives of the mission are needed to be achieved by all Govt.
- Govt. power-assisted and personal schools so universal acquisition of FLN skills may be achieved by 2026-27.
- The distinctive feature is that the goals of the Mission are set within the kind of LakshyaSoochi or Targets for Foundational literacy and numeracy.
- The Laskhyas are supported the educational outcomes developed by the NCERT and international analysis and ORF studies.
- A special package for foundational literacy and numeracy under NISHTHA is being developed by NCERT and around 25 lakh lecturers teaching at pre-primary to primary grade are trained this year on FLN.

What is Foundational Literacy and Numeracy?

- Foundational literacy – The pre-existing knowledge of language helps in building literacy skills in languages.

- The key components in Foundational Language and literacy are: **Oral Language:** Development Includes improved listening comprehension; oral vocabulary and extended conversation skills.
- The experiences in oral language are necessary for developing skills of reading and writing.
- **Decoding:** Involves deciphering written words supported understanding the link between symbols and their sounds Reading
- **Fluency:** Refers to the flexibility to scan a text with accuracy, speed (automaticity), expression (prosody), and comprehension that enables children to form that means from the text.
- Many children recognise aksharas, however read them laboriously, one-by-one.
- **Reading Comprehension:** Involves constructing that means from a text and thinking critically regarding it.
- This domain covers the competencies of understanding texts and retrieving data from them, as well as deciphering texts.
- **Writing :** This domain includes the competencies of writing aksharas and words as well as writing for expression Foundational attainment – Foundational attainment means that the ability to reason and to use simple numerical ideas in everyday life downside determination.

The major aspects and parts of early arithmetic are:

- **Pre-number ideas :** Count and perceive the quantity system Numbers and operations on numbers : Learn conventions required for mastery of Mathematical techniques such as the utilization of a base 10 system to represent numbers Shapes and spacial understanding : Perform simple computations in her/his own high to three-digit numbers and apply these to their day to life activities in numerous contexts measuring : Understand and use customary algorithms to perform operations of addition,

subtraction, multiplication and division on numbers up to a few digits
data Handling : determine and extend simple patterns ranging from
continuation shapes to patterns in numbers, interpret simple
data/information in his/her everyday life activities;

Topic 33. ANTI-TANK GUIDED MISSILE HELINA

Importance for Prelims: Security

FORMIDABLE ARSENAL

SURFACE-TO-SURFACE MISSILES		
Short Range Ballistic Missiles		
Prithvi-I	150 km	1,000 kg
Prithvi-II	250 km	500 kg
Prithvi-III	350 km	1,000 kg
Dhanush	350 km	1,000 kg
Agni-I	700 km	1,000 kg
Shaurya	700 km	1,000 kg
Prahaar	150 km	200 kg
Intermediate Range Ballistic Missiles (IRBMs)		
Agni-III	2,000 km	1,000 kg
Agni-IV	3,000 km	2,000-2,500 kg
Agni-V	4,000 km	1,000 kg
Continental Range Ballistic Missiles (CBMs)		
Agni-VI	5,000 km	1,500 kg (3-10 MIRV)
Agni-VII (Under Development)	6,000 km	1,000 kg (10 MIRV)
Agni-VIII (Under Development)	10,000 km	1,000 kg (10 MIRV)

SUBMARINE LAUNCHED BALLISTIC MISSILES		
K-15 Sagarkaa (B-05)	750 km	500 kg
K-4	3,000 km	1,000 kg

SHORT RANGE SURFACE-TO-AIR MISSILES		
Trishul	9 km	5 kg
Akash	30 km	50 kg
Maltri	15 km	10 kg
Barak-8	70 km	60 kg

CRUISE MISSILES		
Subsonic Cruise Missiles		
Nirbhay	750-1,000 km	500 kg
Supersonic Cruise Missiles		
BrahMos	290 km	300 kg
Hypersonic Cruise Missiles		
BrahMos-II	290 km	300 kg

AIR-TO-AIR MISSILE		
Astra	80-110 km	15kg

ANTI-TANK GUIDED MISSILES		
Nag Anti-tank guided missile	7 km	8 kg
Helina (Helicopter launched Nag missile)	7 km	8 kg

ANTI-BALLISTIC MISSILES		
Prithvi Air Defence Missile (Exo-atmospheric at 50-80 km)	2,000 km	DM (Pro)
Advanced Air Defence Missile (Endo-atmospheric at 15-30 km altitude)	150-200 km	DM (Hi)
Prithvi Defence Vehicle (Exo-atmospheric at more than 120 km altitude)	2,000-3,000 km	DM (Pro)

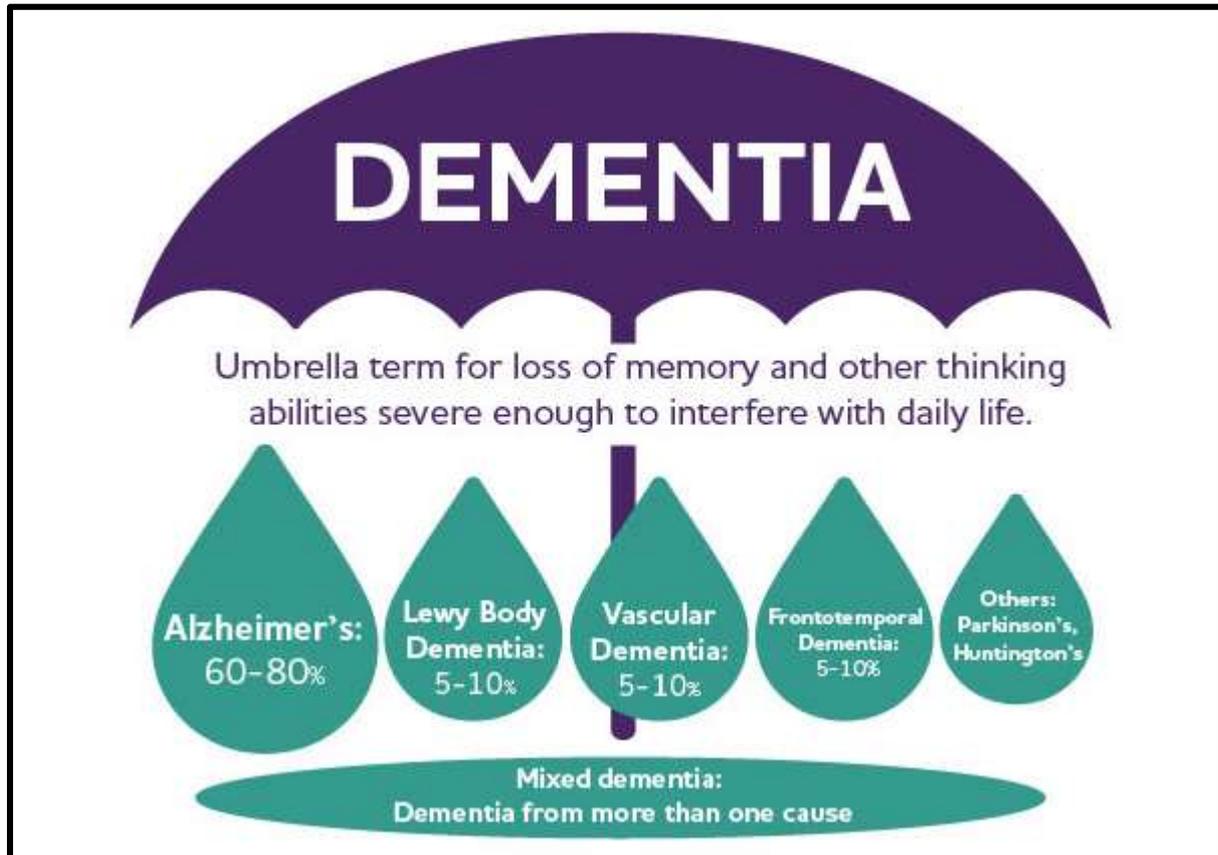
Anti tank missile completes all trials

- The helicopter-launched Nag Anti-Tank guided missile (ATGM), Helina, being developed indigenously by DRDO, has completed all trials.
- Helina could be a third-generation fire-and-forget category ATGM mounted on an autochthonous Advanced light helicopter (ALH), and features a minimum vary of 500 metres and a most range of 7 kilometres
- The Helina (the Army version) and Dhruvastra (Indian airforce version) are helicopter-launched versions of third-generation anti-tank guided missiles (the Nag missile system).
- Nag Missile Nag could be a third-generation, fire-and-forget, anti-tank guided missile developed by DRDO to support each mechanized foot and airborne forces of the Indian Army.
- It is an unrestricted condition with day and night capabilities and with a minimum range of 500m and a most range of 4 km. Nag is launched from land and air-based platforms.
- The land version is presently obtainable for integration on the Nag missile carrier (NAMICA).

- DRDO has developed nag Missiles under the Integrated missile Development Program.
- IGMDP (Integrated guided missile Development Program)
- It was formed by Dr. A.P.J. Abdul Kalam to change India to realize self-sufficiency within the field of missile technology.
- It was approved by the government of India in 1983 and completed in March 2012.
- **The 5 missiles developed under this program are: Prithvi:** Short-range surface to surface missile.
- **Agni:** ballistic missiles with completely different ranges, i.e., Agni (I, II, III, IV, V).
- **Trishul:** Short-range low-level surface to air missile. Nag: three generation anti-tank missile.
- **Akash:** Medium vary surface to air missile. anti-tank guided missile An anti-tank guided missile (ATGM), anti-tank missile, anti-tank guided weapon (ATGW) or anti-armor guided weapon could be a missile primarily designed to hit and destroy heavily armored military vehicles.
- ATGMs place size from shoulder-launched weapons, which may be transported by one soldier, to larger tripod-mounted weapons, that need a squad or team to transport and fire, to vehicle and aircraft mounted missile systems.

Topic 34.DEMENTIA

Importance for Prelims: Science and Tech



Pandemic created access to medical care, support challenging for dementia patients.

- Dementia could be a disease of the brain defined by progressive deterioration in brain perform, as well as memory, learning, orientation, language, comprehension and judgment.
- The irreversible decline in intellectual and physical functioning affects the person with dementia and causes important distress to their family and carers.
- As per the dementedness Asian country report 2020, 5.3 million individuals higher than the age of 60 have dementedness in our country.
- The numbers are expected to double in 20 years.
- In Bengaluru, it's calculable over 46,000 elders square measure with

dementedness.

- In India, it's calculable that one in twenty seven individuals (5.3 million) above the age of 60 had dementia in 2020, in line with the dementedness in India 2020 report revealed by the Alzheimer's and connected Disorders Society of India (ARDSI).
- This is projected to rise to 7.6 million by 2030. individuals with dementedness are at high risk of mortality because of COVID-19 that was evident in care homes within the West that were worst-affected throughout each waves of the pandemic.
- The annual menage value of caring for an individual with dementedness in Asian country, counting on the severity of the sickness, ranges between ₹45,600 to ₹2,02,450 in urban areas and ₹20,300 to ₹66,025 in rural areas.
- Mental Health Act, 2017, offers details on advance directives, appointive representatives and minimum standards, though a lot of work must be done regarding financial backing.
- With NIMHANS, the Centre for Brain analysis, and initiatives like SKAN, there has been active analysis within the field of dementia diagnosing and treatment.

Topic 35. UNITED NATIONS INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD)

Importance for Prelims: Environment



Dramatic changes required in global food systems to deal with nutrition inequality, poverty: IFAD

- Transforming world food systems to become additional inclusive, honest and property could appear an insurmountable challenge, however there area unit concrete actions policymakers will take, IFAD noted throughout the discharge of its transforming Food Systems for Rural Prosperity report.
- Small-scale family farmers area unit still the inspiration of food provide across all low- and middle-income countries, the report highlighted.
- “They play a important role in reducing rural poorness and guaranteeing national food and nutrition security.”
- It mixed up investment in and making conditions for productive, economically viable and environmentally property small-scale family farming.
- A majority of individuals in rural areas earn their livelihoods from

operating in small-scale agriculture, that could be a very important supply of national and world food.

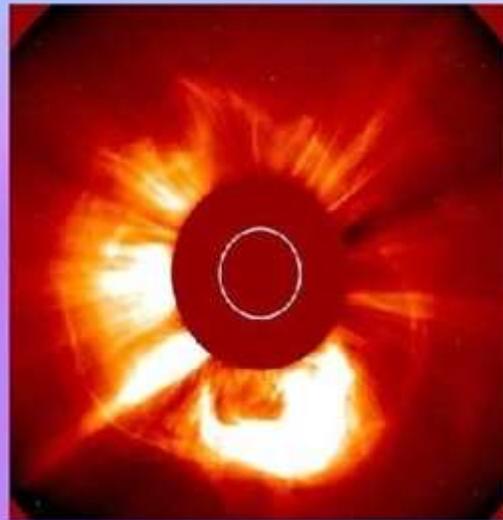
- In fact, farms of up to two hectares produce 31 per cent of the world's food on but eleven per cent of the farmland.
- Food systems are answerable for 37 per cent of greenhouse emission emissions and also are extremely at risk of a dynamical climate, according to the paper.
- About International Fund for Agricultural Development (IFAD) – it's a global financial organization and a specialised agency of the international organisation that works to deal with poorness and hunger in rural areas of developing countries.
- It is that the only tripartite development organization that focuses entirely on rural economies and food security.
- Headquartered in Rome, Italy, IFAD is concerned in over 200 comes across nearly one hundred countries.
- It funds and sponsors initiatives that improve land and water management, develop rural infrastructure, train and educate farmers in additional economical technologies, build up resilience against climate change, enhancing market accessibility, and more.
- IFAD has 177 member states and works in partnership with the Organization of the petroleum exporting Countries (OPEC) and members of the Organisation for Economic Co-operation and Development (OECD).

Topic 36. CORONAL MASS EJECTIONS (CMES)

Importance for Prelims: Science and Tech

Coronal Mass Ejection

- Also known as CME
- CMEs are huge bubbles of gas within magnetic field lines that are ejected from the Sun over the course of several hours



Study probes however ejections from Sun's corona influence space weather predictions crucial for observance satellites

- A recent study has shown however conditions and events within the solar atmosphere like garland mass ejections influence the accuracy of space weather prediction, that is crucial for the health of our satellites.
- This understanding can aid the interpretation of information from the coronal Aditya-L1, India's initial solar mission.
- Space weather refers to the conditions within the solar radiation and near-Earth space, which may adversely have an effect on the performance of space-borne and ground-based technological systems.
- The house weather close to the planet is principally because of coronal

Mass Ejections (CMEs), that area unit frequent explosive expulsions of giant magnetic plasma from the Sun into its surroundings, which may blow past the planet.

- Example of house weather events is that the geomagnetic storm, a perturbation within the Earth's magnetic field, which may last for few hours to few days.
- Plasma properties and Earth arrival times of CMEs from the Sun will vary well with longitudinal locations within the interplanetary space. Sun emits a continual stream of charged particles referred to as the solar wind.
- Plasma characteristics and arrival times of a CME-driven shock, propagating in a very pre-conditioned inhomogeneous medium, could also be different at different longitudinal locations within the heliosphere.
- The study highlights the difficulties in connecting the native observations of an ICME from one in situ spacecraft to its international structures and explains that correct prediction of huge CME structures at any location within the part is challenging.

Topic 37. RESERVE BANK OF INDIA

Importance for Prelims: Economy

Making the banking sector more vibrant

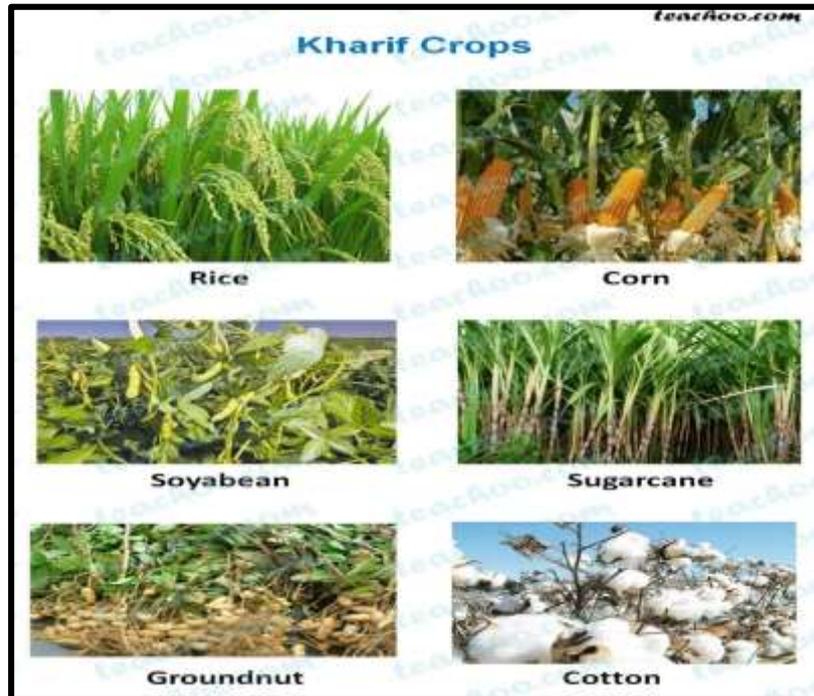
- The reserve bank of India is that the central bank of the country.
- The reserve bank of India was started on the premise of the recommendations of the Hilton Young Commission.
- The reserve bank of India Act, 1934 (II of 1934) provides the statutory basis of the functioning of the Bank, that commenced operations on April 1, 1935.
- It attracts its powers and responsibilities through different legislations additionally like the Banking Regulation Act, 1949.
- The Bank was constituted to control the difficulty of banknotes Maintain reserves with a read to securing financial stability and to control the credit and currency system of the country to its advantage.
- The Bank began its operations by taking on from the govt. the functions up to now being performed by the Controller of Currency and from the Imperial Bank of India, the management of state accounts and debt.
- With easement, the Bank's focus has shifted back to core central banking functions like monetary Policy, Bank supervising and Regulation, and Overseeing the Payments System and onto developing the money markets.
- Regulations Review Authority (RRA) In 1999, the run batted in started a rules Review Authority (RRA) for reviewing rules, circulars and reportage systems, supported feedback from the public, banks and financial establishments.
- This method, besides streamlining and increasing the effectiveness of many procedures and simplifying restrictive prescriptions, made-up the approach for issuing of Master Circulars (MCs) and reduced reportage

burden on regulated entities.

- MCs considerably improved general understanding of central bank rules and procedures, and exaggerated transparency.
- The transition from MCs to Master Directions became effective from Jan 2016, heralding handiness of central bank rules and rules for every subject material on period of time basis.
- The run batted in started the Second rules Review Authority in might 2021 to contour rules and cut back the compliance burden on regulated entities. ‘Priority sector’
- The year 1972 witnessed crystallizing of a proper definition for ‘priority sector’.
- The current PSL pointers need domestic business banks (excluding regional rural banks and tiny finance banks) to attain, in an exceedingly fiscal year, a target of 40 per cent of adjusted internet bank credit or credit equivalent of off -balance sheet exposures as on the corresponding date of the preceding year, whichever is higher.
- Narasimham Committee-I had counseled reducing the scope of directed credit beneath the priority sector from 40 per cent to 10 per cent, that couldn’t be accepted, and Narasimham Committee-II had taken note of this.
- Contingent Convertible Capital Instruments CoCos are nontraditional hybrid capital instruments.
- Their twin objectives are (a) loss absorption and (b) recapitalisation, once a bank ‘is’ in trouble, or once it's a ‘going concern’.
- CoCos will absorb losses either by changing into common equity or writing down the principal, subject to activation of “triggers”.

Topic 38.KHARIF CROPS

Importance for Prelims: Agriculture

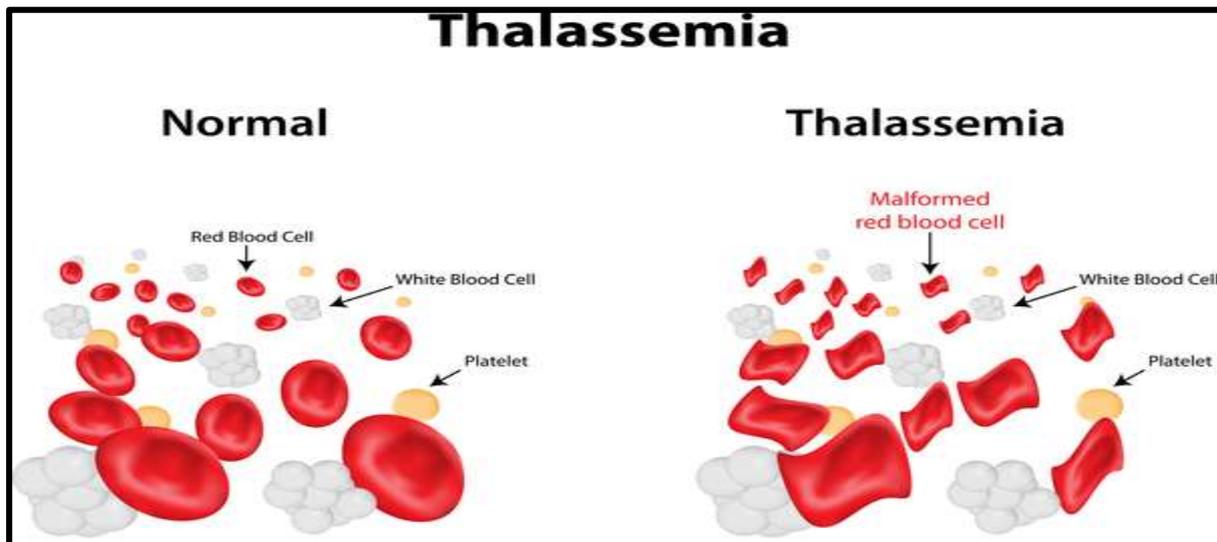


Kharif output seen at record 150.5 mt

- Kharif crops are grown with the onset of monsoon in numerous components of the country and these are harvested in September-October. • Important crops grown throughout this season are paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean Rabi Crops – Rabi Crops area unit harvested within the spring season whereas it's planted in winter.
- The rabi crops are planted around mid-November, ideally once the monsoon rains are over, and gather begins in April / might.
- The crops are full-grown either with rainwater that has percolated into the ground or using irrigation.
- A smart rain in winter spoils the rabi crops however is nice for Kharif crops.

Topic 39. THALASSEMIA

Importance for Prelims: Science and Tech



HC notice to govt. on plea to restore free provide of medication for thalassaemia patients

- Thalassaemia is a transmissible blood dyscrasia whereby the body produces an inadequate quantity of haemoglobin.
- Haemoglobin could be a protein molecule that carries oxygen within the red blood cells.
- This disorder ends up in the intense destruction of red blood cells that results in anaemia.
- Anaemia could be a condition within which the haemoglobin or red blood cells are below the normal count.
- It is an inherited disease that is especially caused because of the abnormal haemoglobin synthesis. It's transferred by one amongst the parents who could be a carrier of this illness because of either deletion of a key gene fragment or a genetic mutation.
- Mild monogenic disorder needs no treatment, however acute thalassaemia may need regular blood transfusions.
- Sickle Cell illness is a hemoglobin inherited disease caused by defects,

known as mutations, within the beta simple protein gene that helps build hemoglobin.

- The red blood cells become onerous and sticky and appearance sort of a C-shaped farm tool known as a “sickle”.
- The reap hook cells die early, that causes a constant shortage of red blood cells.

Topic 40.COSMOS MALABARICUS PROJECT

Importance for Prelims: Art and Culture

Cosmos Malabaricus project gets green signal

- The state government has formally cleared the Cosmos Malabaricus project to map the history of Kerala between 1643 and 1852 using the Dutch historical archives of the 17th century.
- The Department of upper Education has issued body sanction for signing an agreement between the Kerala Council for Historical research (KCHR), the National Archives of The Netherlands metropolis University within the Netherlands for the project.
- The seven-year collaboration aims to shed light on the history of Kerala using repository material bearing on the Dutch east india|archipelago} Company offered in India and also the The Netherlands.
- The total project price calculable for the KCHR is ₹4.5 crore.
- Leiden University can got to meet expenses, together with travel, reward so on, to be spent outside India.