

WEEKLY CURRENT AFFAIRS MAGAZINE for



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

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## DADAR



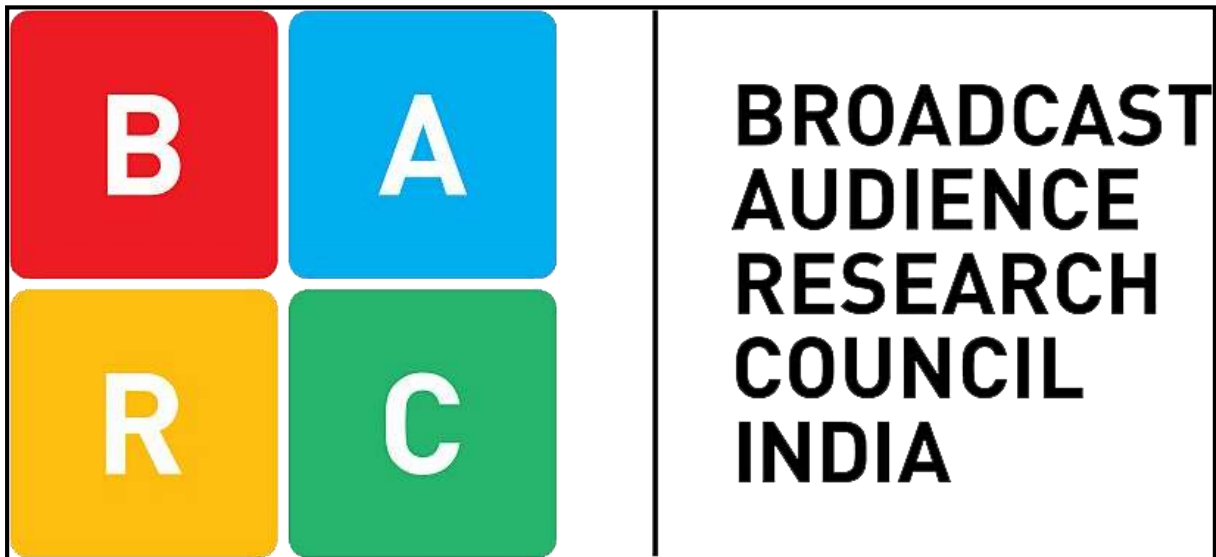
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*Success is born of action...*

**Topic 1: Broadcast Audience Research Council (BARC)**

*Importance for Prelims: Economy*



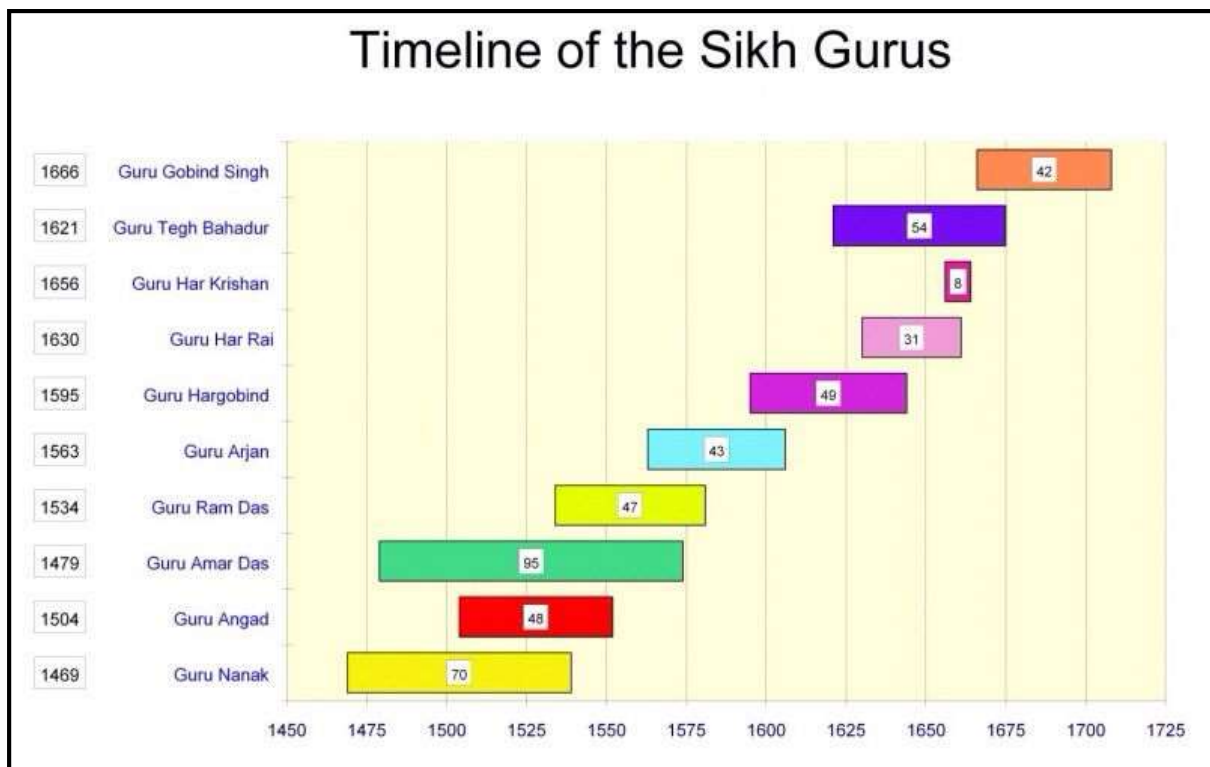
TRP debate with some news channel mistreatment unfair suggests that to boost TRP by having access to exclusive TRP knowledge.

- Broadcast Audience research Council (BARC) India may be a Joint business Company supported by stakeholder bodies that represent Broadcasters, Advertisers, and Advertising and Media Agencies.
- It is made upon a strong and future-ready technology backbone, BARC India owns and manages a clear, accurate, and inclusive TV audience measure system.
- Apart from the currency product to the TV field, BARC India additionally provides a set of Insight product designed for Broadcasters, Advertisers and Agencies.
- The large knowledge and Insights generated by BARC India powers well organized media spends and content choices in an

exceedingly extremely dynamic and growing tv sector.

## Topic 2:Nihang Sikhs

*Importance for Prelims: Art and culture*



Amidst the farmers announcement of tractor parade on republic day Nihang Sikhs rehearse with 50 horsemen.

- Nihang or ‘Akali’ Sikhs are community of armed Sikh warriors in Indian subcontinent.
- Many trace Nihang Sikhs from Fateh Singh and others from “Akali Dal” formed by Sikh Guru Hargovind.
- Traditionally known for their bravery and ruthlessness in the battlefield, the Nihang once formed the irregular guerrilla squads of the armed forces of the Sikh Empire, the Sikh Khalsa Army.
- They wear a conventional dress known as “KhalsaSwarupa”.
- This includes full outfit of super electric blue chosen by Guru Gobind Singh, edged bracelets of iron spherical their wrists (jangikara) and quoits of steel (chakram) layer in their high cone-shaped blue turbans, along

with conventional dagger carried by all Sikhs (kirpan).

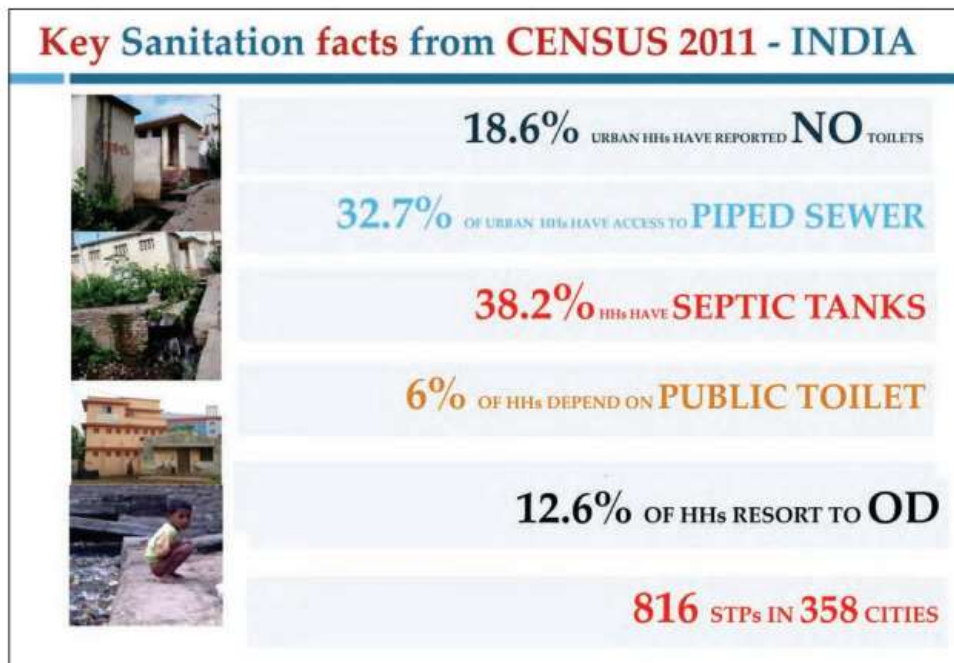
- This is accompanied with swords.

### **About Guru Hargovind and Fateh Singh:**

- Guru Hargovind was the six Guru (at age of 11) once his father Guru Arjan (5Guru) was killed by Jahangir.
- He initiated the method of militarisation that was complete throughout Guru GovindSingh's time.
- He wore 2 weapon (Nihangs follow it today) to symbolize ideas of "miri andpiri" (temporal power and religious authority).
- He made the "Akali Takht" (the throne of dateless one) ahead of HarmandirSaheb because the highest seat of khalsa authority of the khalsa (the collective body of the Sikhs) these days.
- Fateh Singh Sikhism fourth and youngest son of Guru Gobind Singh. among the mostrevered martyrs in Sikhism belief. he's additionally called baba Fateh Singh.

## Topic 3: National Policy on Faecal Sludge and Septage Management (FSSM)

*Importance for Prelims: Environment*



### What is Faecal Sludge . . .

“Faecal sludge is the solid or settled contents of pit latrines and septic tanks.

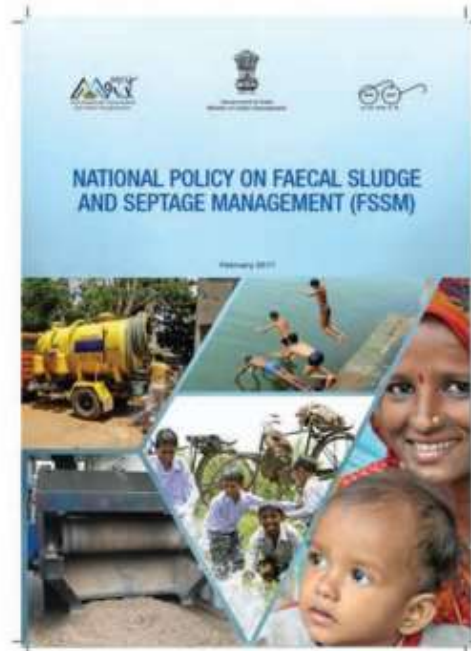
Faecal sludge (FS) comes from onsite sanitation system such as pit latrines, non-sewered public ablution blocks, septic tanks, aqua privies, and dry toilets.”

Source : [http://amrut.gov.in/writereaddata/FSSM\\_Policy\\_Report\\_23Feb.pdf](http://amrut.gov.in/writereaddata/FSSM_Policy_Report_23Feb.pdf)

## What is Septage . . .

“It is the liquid and solid material that is pumped from a septic tank, cesspool, or such onsite treatment facility after it has accumulated over a period of time.

Septage is the combination of scum, sludge, and liquid that accumulates in septic tanks”.



Source : [http://amrut.gov.in/writereaddata/FSSM\\_Policy\\_Report\\_23Feb.pdf](http://amrut.gov.in/writereaddata/FSSM_Policy_Report_23Feb.pdf)

Himachal submitted its action arrange earlier this month to the Central Monitoring Committee (CMC), that is overseeing compliance to a group of merged National green assembly orders to form waste product one hundred cent treated by March 2021.

- It had been issued by Ministry of Urban Development in 2017.
- It seeks to facilitate nationwide implementation of FSSM services all told ULBs and to line priorities, and direction for safe and property sanitation in each house in Republic of India.

### Features of the FSSM:

- It provides for state-level guidelines, framework, objectives, timelines and implementation plans **to address septage management.**
- Formulating strategy **to initiate capacity-building for training on FSSM.**
- A sanitation benchmark framework to be used by ULBs to develop a



database and registry of certified onsite sanitation system and a reporting ecosystem.

- Ensure funding for FSSM projects and with promotion of public private partnerships (PPP).
- Achieving integrated citywide sanitation along with safe disposal.

### **Gaps and issues in urban sanitation:**

1. **Access:** due to households having money problems and area crunch for constructing individual bathrooms, except for some cultural and social barrier.
2. **Septage collection and conveyance:** extrajudicial Manual scavenging, No / Limited access to tanks, Inappropriate tank size & style, Lack of infrastructure, and a regulated schedule for improvement, Lack of formal non-public players square measure problems during this.
3. **Treatment and Disposal:** lack of adequate centralized/ decentralized facilities and designated sites for sewage and for septage treatment and disposal is a major burden.
4. **Poor Awareness:** Faecal Sludge and septage management has been accorded low priority and there is poor awareness
5. **Fragmented Institutional Roles and Responsibilities:** Lack of an Integrated City-wide Approach: soiled Sludge and septage management investments square measure currently planned in a very piece-meal manner and don't take into consideration the total cycle of safe confinement, treatment and safe disposal
6. **limited Technology Choices:** Technologies are focussed and therefore the disposal techniques aren't environmentally friendly no efficient
7. **Gender Sensitive Gap:** The burden of poor sanitation (compounded by the lack of FSSM services) disproportionately affects women, especially the urban poor, because this falls along established fault-lines of malnutrition and family health care giving. Ex- **The Economic Survey Report (2016- 17) of the**

**Finance Ministry** indicates the adverse impact of lack of sustainable sanitation on health of women and impedes in cognitive development of girls and infants.

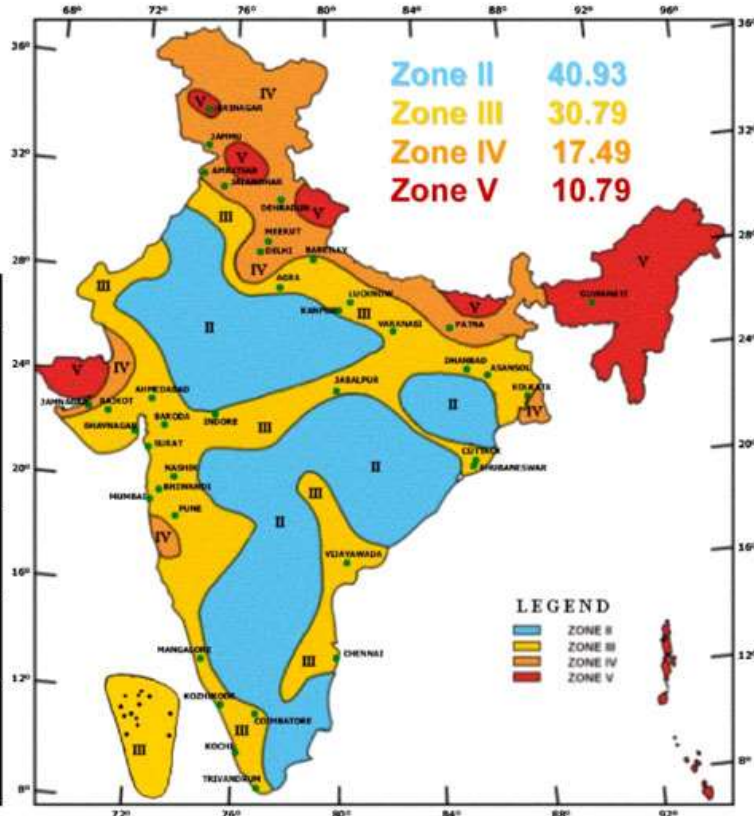
## Topic 4: Earthquake

### Importance for Prelims: Geography

#### Seismic Zone Map of India: -2002

About **59 percent** of the land area of India is liable to seismic hazard damage

Zone	Intensity
Zone V	<b>Very High Risk Zone</b> Area liable to shaking Intensity IX (and above)
Zone IV	<b>High Risk Zone</b> Intensity VIII
Zone III	<b>Moderate Risk Zone</b> Intensity VII
Zone II	<b>Low Risk Zone</b> VI (and lower)



**Fig. 1 Seismic zonation and intensity map of India**

A magnitude 6.2 quake hit the Indonesia and killed at least thirty five.

- an earthquake is shaking or trembling of the earth's surface, caused by the unstable waves or earthquake waves that are generated because of a sudden movement (sudden unleash of energy) within the earth's crust (shallow-focus earthquakes) or layer (some shallow-focus and every one intermediate and deep-focus earthquakes)
- The point where the energy is released is called the **focus** or the **hypocentre** of an earthquake.
- The point on the surface directly above the focus is called **epicentre** (first surface point to experience the earthquake waves).

- A line connecting all points on the surface where the intensity is the same is called an **isoseismic line**.

### Causes:

- ✓ Fault Zones
- ✓ Plate tectonics
- ✓ Volcanic activity
- ✓ Human Induced Earthquakes

### Waves:

- There are unit many completely different forms of unstable waves, and that they all move in different ways. the 2 main sorts of waves are unit body waves and surface waves.
- Body waves will travel through the earth's inner layers, however surface waves can solely move on the surface of the earth like ripples on water. The initial reasonably body wave is that the P wave or primary wave. this can be the fastest kind of unstable wave, and, consequently, the primary to 'arrive' at a unstable station.
- The P wave will move through solid rock and fluids, like water or the liquid layers of the earth. It pushes and pulls the rock it moves through similar to sound waves push and pull the air.
- The second variety of body wave is that the S wave or secondary wave, that is the second wave felt in Associate in Nursing earthquake. Associate in Nursing S wave is slower than a P wave and can only move through solid rock, not through any liquid medium. it's this property of S waves that LED seismologists to conclude that the Earth's outercore could be a liquid.
- S waves move rock **particles up and down**, or side-to-side—perpendicular to the direction that the wave is traveling in (the direction of wave propagation)

## Distribution of Earthquakes

### Measuring earthquake: Mercallivs Richter

- The **Mercalli** scale bases its measurement on the observed effects of the earthquake and describes its intensity. It is a linear measurement.
- On the other hand, the **Richter** scale measures the seismic waves, or the energy released, causing the earthquake and describes the quake's magnitude. It is alogarithmic
- A fault may be a fracture or zone of fractures between 2 blocks of rock. Faults enable the blocks to maneuver relative to every alternative.
- This movement might occur quickly, within the sort of AN earthquake – or may occur slowly, within the sort of creep.
- Faults could home in length from many millimeters to thousands of kilometers.
- Most faults produce repeated displacements over geologic time. During an earthquake, the rock on one side of the fault suddenly slips with respect to the other.
- The fault surface can be horizontal or vertical or some arbitrary angle inbetween.
- Earth scientists use the angle of the fault with respect to the surface (known as the dip) and the direction of slip along the fault to classify faults.
- Faults which move along the direction of the dip plane are dip slip faults and described as either normal or reverse (thrust), depending on their motion.
- Faults which move horizontally are known as strike-slip faults and are classified as either right-lateral or left-lateral.
- Faults that show each dip-slip and strike-slip motion area unit called oblique slip faults.

## Topic 5: Open Sky Treaty (OST)

### *Importance for Prelims: International treaty*

After USA, Russia also has withdrawn from the Open Sky Treaty.

This withdrawal is among the rising trend of USA withdrawing from major international pacts reducing relevance of pacts and other countries following suit, thus weakening the multilateralism.

- USA defendant Russia of noncompliance with OST protocols, blaming Russian capital of obstructing police work flights on its territory, while misusing its own missions for gathering key plan of action knowledge and withdraw from OST.
- About Open Sky Treaty: It is 34-member written agreement (key limitation framework) permitting participants to fly unarmed intelligence flights over any a part of their fellow member states.
- It was projected method back in 1955 throughout the rising tensions in conflict. however it might be signed solely post fall of Union of Soviet Socialist Republics in 1992.
- Currently it's thirty five signatories (before USA withdrawal) at the side of one nonratifying member (Kyrgyzstan).
- It aims at mutual openness to cut back the possibilities of accidental war.
- Under this a member state will “spy” on any a part of the host nation, with the latter’s consent.
- A country will undertake aerial imaging over the host state once giving notice 72 hours before, and sharing its precise flight path 24 hours before. The information gathered below such operations like on troop movements, military exercises and missile deployments, has got to be shared with all member states.

## **Topic 6: Houbara Bustard**

### ***Importance for Prelims: Environment***

Members of the United Arab Emirates' (UAE) royal family arrived in Pakistan's Balochistan to hunt the internationally protected and intensely vulnerable houbara wading bird beneath a license issued by Pakistan's foreign ministry.

- It is a large terrestrial bird found in components of Asia, the middle East and Africa.
- The geographic area houbara (*Chlamydotis undulata*) and also the Asian houbara (*Chlamydotis macqueenii*) area unit two separate species of Houbara wader.
- It migrates in flock to the Indian landmass to pay winter in Asian nation, the Arabian Peninsula and near Southwest Asia once it breeds in Central Asia t It is terribly like the critically endangered great Indian wader (native to India).
- IUCN classified it as Poaching, unregulated hunting and the degradation of its natural surround has been major causes for decline in population of Houbara wader.hroughout spring in original surroundings.
- .It is very similar to the critically vulnerable great Indian bustard (native to India).
- IUCN categorized it as Poaching, unregulated hunting and the degradation of its natural home ground has been major causes for decline in population of Houbara wader.
- Wealthy dignitaries from the UAE, saudi arabia and alternative Gulf countries arrive in the country to hunt the birds once a year exploitation searching gear and falcons.

- They kill the bird for sport and conjointly as a result of its meat is meant to own aphrodisiac qualities Pakistan has been hosting rich dignitaries for last few decades.
- But, the Supreme Court obligatory a ban on searching the houbara wader in 2015.



## **Topic 7: PMKVY 3.0**

### ***Importance for Prelims: Welfare Schemes***

: MKVY 3.0 was launched to make on learning from PMKVY 1.0 and PMKVY 2.0 to align ability framework to aspirational India's demand.

- it had been launched in 717 districts across all states of India by the Ministry of skill Development and Entrepreneurship (MSDE).
- It aims at unlock the vision of constructing Republic of India the 'Skill Capital' of the planet (over three hundred skills available)
- It will conjointly target demand-driven and redistributed in its approach, with focus on digital technology and trade 4.0 skills
- Its focus is on new age skills and Covid-19 connected skills. it's a trainee- and learner-centric approach addressing the ambitions of aspirational India.
- It focuses on coaching of eight number candidates over a subject amount of 2020- 2021 with Associate in Nursing outlay of Rs. 948.90 crore. 9/11 It will be enforced by the Pradhan Mantri Kaushal Kendras (PMKK), emapneled non-PMKK centres and ITI District skill Committees (DSCs), to a lower place the steering of State skill Development Missions (SSDM), shall play a key role in addressing the talent gap and assessing demand at the district level
- It will incentivise states by healthy competition between states by creating available exaggerated allocation to those states that perform higher.

## **Topic 8: Startup India Seed Fund**

### ***Importance for Prelims: Economy***

The government can launch a Rs 1,000-crore seed fund for start-ups, called Start-up Asian country Seed Fund. It had been proclaimed at the “Prarambh: Start-up India International Summit”.

- A one thousand crore rupees seed money for start ups under the Startup India Seed Fund.
- It will facilitate in starting and growing new startups. It will complement Fund of funds theme that's already serving to startups raising equity capital.
- Similar incentive was seen in budget of Rs 95.03 integer being earmarked for the programme named ‘Chunauti’, to be spent over a amount of 3 years.
- About Prarambh: Start-up Republic of India International Summit First start-up meeting of BIMSTEC nation was organized. It seeks to reap spirited energy among the start-up house in BIMSTEC counties like Bangladesh, Bhutan, India, Nepal, Sri Lanka, myanmar and Kingdom of Thailand
- It will be supported collaboration and taking responsibility to come back along.

## **Topic 9: Net metering**

### ***Importance for Prelims: Economy***

To popularise solar energy Bengal govt has allowed net metering for individual household starting from 1 KW onwards.

- Earlier institutional, commercial, industrial and cooperative housing were only allowed the great issue regarding net metering that too for 5 kw capability onward.
- Allowing households will exclude any restrictions and anyone can install top solar panel.
- Net metering construct permits to set-off the quantity of units made from the whole consumption and also the shopper pays electricity charges of solely what he had derived from the grid or distribution company
- About internet Metering: Net metering could be a request mechanism that credits alternative energy system house owners for the electricity they augment the grid
- It offers shopper power over electricity bills and promote renewable energy.

## **Topic 10: International bodies**

United Kingdom has invited Indian PM along with the South Korea and Australia because the guest countries.

- G7 summit are command in Cornwall in United Kingdom of Great Britain and Northern Ireland this year.
- It will be initial in-person summit in 2 years. The invite to 3 countries is seen as potential growth into D-10 (G7+3) with illustration of hour of individuals living within the democracies worldwide.
- Last year even USA planned the growth. Expansion is important for declining importance of G7 because it doesn't replicate current realities of world order with none of the rising economies portrayed.
- About G7: It is a platform of World's seven developed countries USA, UK, France, Canada, Italy, Japan, and Germany. Its origin is copied to grease crisis of 1973 and shaped as a results of a summit in France in 1975.
- It distended to incorporate Russia in 1997 as G-8. when annexation of Crimea by Russia it had been suspended and grouping once more became G-7.
- It seeks to debate economic and financial problems with the international importance and meets annually.

## **Topic 11: Ammonia as pollutant**

### ***Importance for Prelims: Environment***

An examination done by skilled committee from the Central Pollution control Board (CPCB) and also the National Environmental Engineering research Institute (NEERI) in 2018 reportable high levels of Ammonia in Yamuna stream between Haryana's Hathnikund and Delhi's Wazirabad barrage coming back from Haryana drains.:

- National green Tribunal-appointed Yamuna monitoring Committee (YMC) share detail with Haryana govt and conjointly appraised Supreme Court on a plea to direct Haryana to prevent discharging waste material in watercourse.
- It has not solely compact the standard of water in Yamuna, however conjointly created downside of water supply thanks to high ammonia level. 3/7
- Expert committee recommendation to ascertain Ammonia pollution in Yamuna: Construction of a dividing wall was suggested by committee between 2 drains in Sonapat space during which drain carries fresh and therefore the different carries industrial and domestic sewer water, that at the time enclosed untreated waste.
- It concurrently ends up in each water intermixture and polluting the stream Yamuna.
- In-situ bioremediation Phytoremediation has got to be undertaken in drains to prevent untreated effluents going into the stream.
- Other measures may be: Treating with fresh, chlorination and restoring ecological flow of stream.
- **About Ammonia and Ammonia pollution in River:**
- About Ammonia and Ammonia pollution in River: Ammonia (NH<sub>3</sub>) may

be a colourless gas associate degree used as an industrial chemical in fertilisers, plastic, artificial fibres and dyes etc.

- Natural supply of ammonia is breakdown of organic waste. On the opposite hand, industrial effluent and agriculture run-off is major unreal contribution to rise in ammonia levels.
- Ammonia concentration on top of 1 ppm is dangerous for fishes.
- Ammonia additionally reduces dissolved oxygen in water by combining with the oxygen to form oxidized form of nitrogen.
- Water intake with high ammonia level might harm internal organs of human as well.
- Bureau of Indian Standards has place most permissible limit of Ammonia in water at 0.5 ppm.

## **Topic 12: Ustad Mustafa Khan**

### ***Importance for Prelims: Arts and Culture***

Winner of Padma Shri in 1991, Sangeet Natak Akademi Award in 2003, Padma Bhushan in 2006 and Padma Vibhushan in 2018, Ustad Mustafa Khan died recently.

- He belonged to Rampur Sahaswangharana and was a part of the Hindustani Classical music tradition. Rampur Sahaswangharana could be a gharana of Hindustani Musical tradition centred in Rampur and Sahaswan in North Uttar Pradesh.
- Ustad Inayat Hussain khan was the founding father of this gharana, who was impressed by Mehboob Khan (his father who was a Khayal singer).
- Gharana is nearer to Gwalior gharana and emphasizes on medium-slow tempos, a full-throated voice and complex swingy play It represents diversity and elaboration of the taans (rapid-fire elaborations), as well as tarana singing.

## **Topic 13: International Atomic Energy Agency (IAEA)**

### ***Importance for Prelims: International agencies***

Iran asked UN's nuclear watchdog to prevent business enterprise spare details concerning its nuclear program.

- Post-USA's withdrawal from Joint Comprehensive found out of Action as a region of Islamic Republic of Iran and P5+1 (EU)'s nuclear deal framework Islamic Republic of Iran has been pushing for canopy of deal or it will restart its nuclear program for U enrichment.
- This has created world's effort for nuclear proliferation weak. Iran has been complaintive of United Nations watchdog International Atomic Energy Agency revealing spare details which it got access to as a part of deal and is resulting in spare misunderstanding.

### **About IAEA:**

- The International atomic energy Agency (IAEA), an un agency is that the world's central intergovernmental forum for scientific and technical co-operation among the nuclear field.
- It works for the safe, secure and peaceful uses of nuclear science and technology, contributing to international peace and security and also the United Nations' sustainable Development Goals.
- It was intentional in 1957 as a results of Conference on the Statute of the International atomic energy Agency control at the un headquarters. initially it was observed as 'Atoms for peace'. It is headquartered in vienna, Austria.
- It has 171 members (Sain Lucia being latest member). Though it's and freelance international agencies, yet, it reports annually to UNGA.
- It together with its Director General won Alfred Bernhard Nobel Peace prize in 2005. The IAEA's political bodies decide the Agency's programmes and budgets.



- They comprise the overall Conference of all Member States and so the 35-member Board of Governors.

**The IAEA's three main areas of work are:**

- Safety and security
- Science and technology
- Safeguards and verification

**Funding of IAEA:**

- The IAEA carries out its work in 2 main areas: the regular programme and the Technical Cooperation programme.
- These 2 programmes are financed from separate funds. 5/7 They are to boot supported by extra-budgetary contributions from Member States and non-member states donors.
- The IAEA's budget is approved annually by the IAEA General Conference.

## **Topic 14: Blue and green hydrogen**

### ***Importance for Prelims: Economy***

Oil-Rich Abu Dhabi Targets Hydrogen as Future Export Fuel.

- Abu Dhabi is going to use a pair of its sovereign wealth funds to indicate the petroleum-rich emirate into an bourgeois of blue and green hydrogen.
- Munich-based Siemens Energy is already building a hydrogen demonstration plant at the neighbor emirate of city.
- This is done to diversify export amidst demand for cleaner fuels.

### **Potential for hydrogen fuel in Abu Dhabi:**

- Huge fossil fuel base, that it may use to develop what's called blue hydrogen. Ample sunshine, which may be controlled to form a variant referred to as green hydrogen.

### **Hydrogen as fuel:**

- Hydrogen could be a clean fuel that, once consumed during a fuel cell, produces only water.
- +Hydrogen are often made from a spread of domestic resources, like natural gas, nuclear energy, biomass, and renewable power like solar and wind.
- Hydrogen could be a versatile energy carrier which will be made from a large vary of sources and utilized in some ways across the whole energy sector.
- It is created from Solar-driven processes using lightweight as the agent for hydrogen production Water is separated into oxygen and hydrogen through a method referred to as electrolysis
- Biological processes use microbes like microorganism and microalgae and might turn out hydrogen through biological reactions.
- In microorganism biomass conversion, the microbes break down organic

matter like biomass or waste product to provide hydrogen, whereas in biological processes the microbes use sunlight because the energy supply.

### **Grey, Blue and green hydrogen**

- When made industrially from natural gas (which generates vital carbon emissions) it's referred to as “grey” hydrogen. (It is cheapest)
- When element is made from natural gas however carbon emissions are a unit captured and stored, or reused it's referred to as “blue” hydrogen. (price is influenced each by natural gas and carbon capture and storage)
- The cleanest one amongst all is “green” hydrogen, that is generated by renewable energy sources while not manufacturing carbon emissions within the initial place.

## **Topic 15: . Gucchi Mushroom**

***Importance for Prelims: Economy/ GI tag: GI tag has been sought for India's costliest mushroom 'Gucchi***

***mushroom'***

- It grows in J&K's Doda district. On the rear of saffron from state receiving GI tag, currently the demand is for Gucchi to be given GI tag.
- Locally referred to as Gucchi, or Morel, the mushroom, priced at over ₹20,000 a kg, is a forest turn out collected by native farmers and tribals in region.
- It is a spongy, edible fungus that is said to own medicative and antiinflammatory properties is found within the temperate forests of the Doda district.
- They even have inhibitor and antimicrobial properties. they're additionally considered a chic supply of protein, carbohydrates and B vitamin.

## **Topic 16: Vista dome Coach**

### ***Importance for Prelims: Tourism and art and culture***

Prime Minister Narendra Modi flagged off eight trains from totally different components of the country to Kevadia in Narmada district, wherever the sculpture of Unity is found.

- It is a progressive coach created by Indian Railways, designed to produce passengers with travel comfort furthermore as associate increased viewing expertise of their surroundings.
- It has been factory-made at the Integral Coach manufacturing plant in chennai, Tamil Nadu.
- It is for the primary time that the Vistadome coach has been created on the Linke Hofmann Busch (LHB) platform, created for rider coaches for trains in Republic of India.
- The coach with giant window for scenic expertise conjointly has CCTV police work, fire alarm system associated an led destination board, GPS-based public-address-cum passenger system etc.

## **Topic 17: ] GEO ENGINEERING**

### ***Importance for Prelims: ] : Environment***

Geoengineering is an umbrella term for human interventions that amend the earth's climate system. There are presently a pair of main approaches under the geoengineering umbrella: carbon-dioxide removal (CDR) and solar radiation management (SRM).

- CDR tackles the foundation reason for warming by removing greenhouse gases from the atmosphere — assume carbon capture and storage. SRM, meanwhile, leaves greenhouse gases untouched, but offsets their impact by reflecting sunlight away from the earth.
- Whereas CDR addresses the explanation for warming, reducing greenhouse gases, SRM only masks it or offsets it.

### **Geoengineering Techniques**

#### **Bio-energy with carbon capture and storage (BECCS)**

- It is the method of extracting bioenergy from biomass and capturing and storing the carbon, thereby removing it from the atmosphere.
- The carbon within the biomass comes from the greenhouse gas carbon dioxide (CO<sub>2</sub>) that is extracted from the atmosphere by the biomass once it grows.
- Energy is extracted in helpful forms (electricity, heat, biofuels, etc.) because the biomass is utilized through combustion, fermentation, shift or different conversion ways.

#### **Ocean fertilization or ocean nourishment**

- Ocean fertilization is a kind of climate engineering supported the purposeful introduction of nutrients to the higher ocean to extend marine food production and to remove carbon dioxide from the atmosphere.
- A number of techniques, together with fertilization by iron, urea and

phosphorus have been planned.

### **Soil carbon sequestration (SCS)**

- Soils will operate a sink for carbon dioxide since region concentrations of carbon dioxide have crossed 410 components per million and oceans are already turning acidic.
- Carbon sequestration in soils has the potential to offset GHG emissions from fossil fuels by up to 15 annually.
- Soil organic carbon (SOC) comes from plants, animals, microbes, leaves and wood, mostly found within the initial metre some.
- There are several conditions and processes that guarantee changes to SOC content including temperature, rainfall, vegetation, soil management and land-use modification.

### **Stratospheric aerosol injection (SAI)**

- SAI is that the main form of solar radiation management (SRM) .

In the case of SAI, gases are tense into the layer to mirror a number of the sun's heat, mimicking a sway that happens naturally in a sturdy volcanic eruption

- . Scale of SAI makes its governance troublesome — implementing it in one country will trigger rain and extreme weather across borders.
- Lack of public support may be the biggest hurdle.

### **Marine cloud brightening (MCB)**

- MCB involves reflective sunlight faraway from the earth in a way. during this case, sea salt or alternative particles square measure sprayed into marine clouds to form them thicker and more reflective.

### **Cirrus cloud thinning (CCT)**

- CCT is sort of the alternative of marine cloud brightening. High-altitude Cirrus clouds are skinny and wispy, in order that they don't mirror abundant radiation into area, and instead lure long-wave radiation on earth.

- CCT proposes cutting them more through cloud seeding, property a lot of long-wave radiation escape.



## **Topic 18: INDIAN STAR TORTOISES**

### ***Importance for Prelims: Environment***

: Forest Department personnel on Monday condemned as several as 414 live endangered Indian star tortoises.

- Indian star tortoise is found across the Indian sub-continent, additionally specifically, in the Central and Southern elements of India, in West Pakistan and in Sri Lanka.
- Star Tortoises are protected below Schedule IV of Wild Life Protection Act, 1972 and Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora.
- The IUCN has listed it below the vulnerable. The species faces 2 threats: loss of surround to agriculture and illegal gathering for the pet trade.
- The Indian star turtle is that the single most seized species of fresh tortoise in the world, in line with wildlife-trade watchdog TRAFFIC.
- TRAFFIC is an international life trade observation network. The tortoise, protected below CITES Appendix I, got an enormous boost in its protection status, wherever the embezzled international trade of the Indian star tortoises, as well as that of the smooth-coated otter and Asian small-clawed otter, was declared embezzled.
- Now, commercialism in these animals would require registration and special permits.
- Appendix II still makes allowances for the regulated trade of captive-bred animals, which isn't one thing that applies to species protected below Appendix I.

## **Topic 19: CO WIN**

### ***Importance for Prelims: : Science & tech***

To carry out the Covid-19 vaccination drive as smoothly as possible, the government is looking forward to Co-WIN, a digital intelligence platform.

- It is designed on an indigenously developed electronic vaccine Intelligence Network (eVIN) that has been in use since 2015.
- Each person who would be receiving Covid-19 vaccination in India
- would have to be compelled to register on the Co-WIN network and and he/she would be followed up for subsequent shots likewise as for any adverse event following immunisation (AEFI).
- Registration on the Co-WIN app is obligatory for anyone to receive the vaccination.

### **About CO WIN**

- Co-WIN may be a cloud-based IT resolution for designing, implementation, observation and evaluation of Covid-19 vaccination in India.
- It is an end-to-end resolution that connects the complete public health system from national level right up to the vaccinator level.
- Co-WIN permits for creation of various users (admins, supervisors, and vaccinators), registration of beneficiaries, followed by designing and programing sessions and after vaccine administration and following of beneficiaries after the vaccination.
- In a time period basis, the app tracks not only the beneficiaries however conjointly the provision of immunizing agent stock at the national, State and district levels.
- this permits the system to monitor the use, wastage, coverage of Covid-

19 vaccination at numerous levels.

## **Topic 20: QUESTION HOUR & ZERO HOUR**

### ***Importance for Prelims: Polity***

Lok Sabha Speaker Om Birla said each homes can have five-hour sessions every with Question Hour and zero Hour. Rajya Sabha can sit from 9 am to 2 pm, and Lok Sabha from 4 pm to 9 pm.

### **Question Hour**

- The first hour of each parliamentary sitting is slotted for this. It is regulated according to parliamentary rules and presiding officers of both the homes are the final authority for conducting the question hour.
- During now, the members raise queries and also the ministers typically provide answers.
- Questions also can be asked to personal members of the house. The queries area unit of three kinds, namely, starred, unstarred and short notice.
- **Starred question** (distinguished by an asterisk)- this needs an oral answer and hence supplementary queries will follow.
- **Unstarred question**- this needs a written answer and therefore, supplementary questions cannot follow.
- **Short notice question** is one that's asked by giving a notice of but ten days. It is answered orally.
- Question Hour in each homes is stayed all days of the session. however there are two days once an exception is created.
- When the President addresses MPs from each homes. The President's speech takes place at the start of a brand new Lok Sabha and on the primary day of a brand new Parliament year.
- On the day the finance minister presents the Budget.

### **Zero Hour**

- Unlike the question hour, the time of day isn't mentioned within the

Rules of Procedure.

- Thus it's an informal device out there to the members of the Parliament to boost matters with none previous notice.
- The time of day starts right away once the question hour and lasts till the agenda for the day (ie, regular business of the House) is preoccupied. In different
- words, the time gap between the question hour and also the agenda is thought as zero hour.
- It is an Indian innovation within the field of parliamentary procedures and has been existing since 1962.

## **Topic 21: GLOBAL RISK REPORT**

### ***Importance for Prelims: International Report***

The report, released ahead of the virtual ‘Davos Agenda’ summit of the WEF from January 25-29 that will be attended by Prime Minister Modi among different international leaders.

- The (16th edition) report was released by World economic forum and it's a part of it's global risk initiative.\
- It has aforementioned that the planet has to come to life to long-run risks, once witnessing in 2020 the harmful effects of ignoring long-run risks like pandemics, which is currently a direct risk.
- The 16th edition of world Risks Report analyses the risks from social group fractures— manifested through persistent and rising risks to human health, rising unemployment, widening digital divides, youth sophistication, and government fragmentation.
- Businesses risk a disorderly economic condition which might exclude giant cohorts of employees and companies from the markets of the longer term.
- Environmental degradation—still associate degree existential threat to humanity—risks crossed with social group fractures to bring about severe consequences.

## **Topic 22: PARAKRAM DIWAS**

### ***Importance for Prelims: Current Events/History***

The Union Culture Ministry on Tuesday announced that January 23, birth anniversary of Subhas Chandra Bose, would be celebrated as “ParakramDiwas” — day of courage — every year.

- Prime Minister Narendra Modi would command over the inauguration of the celebrations in Kolkata, wherever a permanent exhibition on Netaji at the Victoria Memorial would be opened.
- A programme would be control in Cuttack, birth place of Bose. Patel said a commemorative coin and postage stamp would be released.
- an artists’ camp at the National Library, Kolkata and an international conference on Bose’s legacy would be organised similarly.

### **Subhash Chandra Bose’s Role in Indian Independence Struggle**

- Bose was sent to jail in mandalay for nationalist activities in 1925. He was released in 1927 and have become the INC’s general secretary.
- He worked with jawaharlal nehru (Born on november 14 – 1889) and also the two became the Congress Party’s young leaders gaining quality among the folks.
- He advocated complete Swarajand was in favour of the utilization of force to achieve it.
- Bose stood for and was elected the party’s president in 1939 however was forced to resign due to variations with Gandhi’s supporters. Bose’s ideology
- leaning towards socialism and leftist authoritarianism. He formed the All India Forward alinement in 1939 as a faction at intervals the Congress.
- At the beginning of the Second warfare, Satyendra Nath Bose protested against the government for not consulting Indians before dragging them

into the war.

- He was inactive once he organised protests in metropolis for the removal of the monument memorialising the Black Hole of Calcutta.
- In Germany, he met with the Nazi leaders associated hoped to stage an armed struggle against the British to achieve independence.
- He hoped to tie the Axis powers since they were against his 'enemy', the British.
- He supported the Indian Legion out of regarding 4500 Indian troopers who were within the British army and had been taken prisoners by the Germans from geographical region.
- In 1943, he left European nation for Japan disenchanted with the lukewarm German support for Azad Hind. Bose's arrival in Japan revived the Indian National Army (Azad Hind Fauj) which had been fashioned earlier with Japanese facilitate.
- Azad Hind or the tentative Government of Free India was established as a government-in-exile with Bose as the head. Its headquarters was in Singapore.
- The INA was its military. Bose actuated the troops along with his fiery speeches.
- His illustrious quote is, "Give me blood, and that I shall provide you with freedom!"
- The INA supported the Japanese army in its invasion of northeast India and conjointly took management of the Andaman and Nicobar Islands
- . However, they were forced to retreat by the British forces following the Battles of Kohima and Imphal in 1944.



## **Topic 23: OFFICIAL SECRETS ACT**

### ***Importance for Prelims: Governance***

The Maharashtra government has set to hunt legal opinion whether Republic TV owner and editor-in-chief is charged under Official Secrets Act for his revelations regarding the Balakot airstrike 3 days in advance.

- OSA has its roots within the British colonial era. the original version was The Indian Official Secrets Act (Act XIV), 1889.
- This was brought in with the most objective of muzzling the voice of a large number of newspapers that had come back up in many languages, and were opposing the Raj's policies, building political consciousness and facing police crackdowns and jail terms.
- It was amended and created additional tight within the type of The Indian Official Secrets Act, 1904, throughout Lord Curzon's tenure as Viceroy of Asian nation.
- In 1923, a more moderen version was notified. The Indian Official Secrets Act (Act No XIX of 1923) was extended to any or all matters of secrecy and confidentiality in governance within the country.
- It generally deals with two aspects Section 3 cover spying or espionage, covered Section 5 covers revealing of different secret data of the government.
- Secret information are often any official code, password, sketch, plan, model, article, note, document, or data.
- under Section 5, each the person human activity the information and also the person receiving {the data|the knowledge|the data} are often admonished RTI Act vs OSA Section 22 of the RTI Act provides for its grandness vis-a-vis provisions of different laws, including OSA. Therefore, if there's any inconsistency in OSA with reference to

furnishing of data, it'll be outmoded by the RTI Act.

- However, beneath Sections eight and nine of the RTI Act, the government will refuse information.
- Effectively, if the government classifies a document as “secret” under OSA Clause 6, that document are often unbroken outside the reach of the RTI Act, and the government will invoke Sections 8 or 9.

## **Topic 24: DRAGON FRUIT**

### ***Importance for Prelims: Environment***

Government in Gujarat has initiated the method of patenting the name of the variety of dragon fruit grown in Gujarat as 'kamalam', that is additionally the name of the state party headquarters.

- Dragon fruit is that the fruit of a species of wild cactus autochthonous to South and Central America, wherever it's referred to as pitaya or pitahaya.
- The world's largest producer and businessperson of dragon fruit is Vietnam, where the plant was brought by the
- French within the 19th century. Dragon fruit is additionally cultivated in — except for its native Latin America — Siam, Taiwan, China, Australia, Israel, and sri lanka.
- It was delivered to India within the 1990s, and is fully grown in Karnataka, Kerala, Tamil Nadu, Maharashtra, Gujarat, Odisha, West Bengal, andhra pradesh, and Andaman and Nicobar Islands.
- 5/8 It grows all told styles of soil, and doesn't need a lot of water. About the proposal ICAR sources aforementioned the Gujarat government's proposal had been forwarded to the Union Ministry of Agriculture and Farmers' Welfare.
- Whatever word, unharness of types, production, it's all done by the Department of Agriculture and Cooperation.
- ICAR officers aforementioned such a proposal would want approval from the botanic Survey of India and also the National multifariousness Authority under the Union Ministry of Environment, Forest and temperature change.
- Dragon fruit isn't a species native to India and any amendment in its

word in official annals will cause international proceeding. Hence, the opinion of BSI and NBA matters.

## **Topic 25: . INDIA INNOVATION INDEX**

### ***Importance for Prelims: National Reports***

Karnataka preserved its position because the most innovative major state within the country within the India Innovation Index 20 discharged by NITI Aayog on January 20, 2021.

- : NITI Ayog with the Institute for fight releases the india Innovation Index .
- The index, developed on the lines of the global Innovation Index, would help the innovation system of Indian states and Union Territories (UTs) to style policies to drive innovation across regions.
- Based on the index every state must formulate its own policy, supported its distinctive resources and strengths and that caters to its specific desires.
- The index goes on the far side ancient approaches for measure innovation like patents per million of population, publication in scientific journals, share of GDP defrayal on analysis and adds parameters that ar specific to the Indian economy (eg. Demographic dividend), to present it a a lot of holistic coverage.
- 2020 Report Findings Karnataka scored 42.5, followed by maharashtra at second place with a score of 38 and Tamil Nadu at third place with 37.91 score.
- Bihar was ranked the last within the index with 14.5 score. Himachal Pradesh flat-top among the NE/ hilly states with a score of 25.06, followed by Uttarakhand and Manipur, whereas Meghalaya was ranked last with 12.15 score.
- Delhi flat-top among the UT/ town States with a score of 46.60, followed by Chandigarh and Daman & Diu and Lakshadweep came last with 11.71 score.

## **Topic 26: . V SHAPED RECOVERY**

### ***Importance for Prelims: Economics***

The economy is among putting distance of achieving positive growth, officials of the reserve bank of India (RBI) wrote, adding that the letter ‘V’ in the v-shaped recovery stood for vaccine.

- V-shaped recovery: it's a situation during which the economy quickly recoups lost ground and gets back to the normal growth trend-line.

## **Topic 27: . JERENGA POTHAR**

### ***Importance for Prelims: Culture:***

Prime Minister Narendra Modi can launch a special programme of the province government to distribute land ‘patta’ or land allotment certificates to over one lakh landless indigenous of us. The event are planning to be command at Jerenga Pothar in Sivasagar district, a historical place connected with Assam’s erstwhile Ahom kingdom.

- 2/10 Formerly referred to as rangpur, Sivasagar was the seat of the powerful Ahom folk, who ruled Assam for six centuries (1228-1826). Jerenga Pothar, an open field in Sivasagar town, is popularly connected to the valour of 17th century Ahom patrician Joymoti.
- While the bravery of Ahom kings is well-documented, Joymoti’s story — littleknown until the latter a part of the 19th century — is nowadays celebrated and invoked as a symbol of inspiration.
- Present day Significance Jerenga Pothar itself isn't a protected archaeological web site, its section includes a number of protected sites.
- Na Pukhuri tank to its east and therefore the Pohu Garh, a natural facility designed throughout the Ahom era, to its west. reachable is that the massive Joysagar tank, designed by Ahom king Swargadeo Rudra Singha in 1697, and therefore the Hindu deity Dol temple.
- Joymoti Konwari: Joymoti Konwari, was the wife of Tai-Ahom prince Gadapani (later Supatphaa).
- She was accorded the honorific Mohiyokhi on account of her heroic endurance of torture till the tip, dying at the hands of royalists underneath Sulikphaa Loraaja Roja without revealing her exiled husband prince
- Gadapani’s whereabouts, thereby enabling her husband to rise in revolt and assume rank.
-

- Gadapani and Joymoti's son Rudra Singha had the Joysagar Tank dug at the spot where she was tortured.
- Ahom Kingdom The Ahom kingdom (1228–1826) was a late medieval kingdom within the Brahmaputra Valley in Assam.
- It is documented for maintaining its sovereignty for nearly 600 years and successfully resisting Mughal growth in Northeast India.
- The Ahom state depended upon forced labour. Those forced to figure for the state were known as paiks.
- Ahom society was divided into clans or khels. A khel usually controlled many villages.
- Ahoms idolised their own social group gods however rather than imposing their own language, faith and rituals on communities living in Assam, they accepted the Hindu faith and therefore the Assamese language. However, the Ahom kings didn't utterly quit their ancient beliefs when adopting Hinduism.
- Ahom society was terribly refined. Poets and students got land grants and theatre was inspired. important works of Sanskrit were translated into the native language.
- Historical works, referred to as buranjis, were additionally written, initial within the Ahom language and then in Assamese.
- 3/10 The kingdom became weaker with the increase of the Moamoria rebellion, and subsequently fell to continual Burmese invasions of state.
- With the defeat of the Burmese when the primary Anglo-Burmese War and therefore the Treaty of Yandabo in 1826, management of the dominion passed into East Indies Company hands.



## **Topic 28: DESERT KNIGHT 21**

### ***Importance for Prelims: International Relation***

As a part of the primary edition of the exercise Desert Knight-21, four French Rafale fighters landed in Jodhpur once flying directly for around four hours from the Djibouti airbase.

- Indian Air Force (IAF) and French Air and space Force can conduct a bilateral Air exercise, Ex Desert Knight-21 at Air Force Station Jodhpur from 20 to 24th January 2021.
- The French aspect can participate with Rafale, airbus A-330 Multi-Role Tanker Transport (MRTT), A-400M tactical Transport craft and around 175 personnel. The IAF craft collaborating within the exercise can embody Mirage 2000, Su-30 MKI, Rafale, IL-78 Flight Refuelling craft, AWACS and AEW&C craft. The exercise is exclusive because it includes fielding of Rafale craft by both sides and is indicative of the growing interaction between the two premier Air Forces.
- Presently, the French detachment for Ex Desert Knight-21 is deployed in Asia as part of their 'Skyros Deployment' and can ferry in forces to Air Force Station Jodhpur.

### **Other Defence Exercises between India and France:**

- Varuna – Naval exercise
- Garuda – Air exercise
- Shakti – Army exercise.

## **Topic 29: DRAFT ARCTIC POLICY**

### ***Importance for Prelims: Current Events***

:India has unveiled a brand new draft ‘Arctic’ policy that, among alternative things, commits to increasing expanding, “sustainable tourism” and mineral oil and gas exploration within the Arctic region.

- The policy envisages connecting the Arctic residents, particularly the indigenous communities with those living within the himalayan regions.
- The policy aims to form opportunities wherever the Indian enterprises is concerned to become a part of the international commerce businesses and promote traditional indigenous knowledge.
- The Arctic Policy has been synchronal and adapted to Goal 11 of property Development Goals ( property Cities and Communities)
- India believes that any human action during this fragile region ought to be property, responsible, and clear with respect for international laws, together with UNCLOS [United Nations Convention for the Law of the Sea].
- Additional information India signed the Svalbard treaty in Paris.
- The treaty allowed free access to the Arctic region together with the commitment of not militarizing it. India
- launched its initial scientific expedition to the Arctic in 2007. In 2008, India established a hunt base referred to as Himadri at New York Alesund, Svalbard, Norway.
- In 2014, India deployed IndArc. it's a multisensory observatory in Kongsfjorden. In 2016, India discovered Gruvebadet part Laboratory at New York Alesund, Svalbard..

### **Topic 30: MAMALLAPURAM**

#### ***Importance for Prelims: History***

The Pallava era monuments at Mamallapuram, wherever the informal summit between Prime Minister Narendra Modi and Chinese President Xi Jinping passed in October 2019, are among the highlights at the Republic Day parade in New Delhi.

- Mamallapuram, also referred to as Mahabalipuram or Seven Pagodas, is a Bengal that lies along the Coromandel Coast of the Bay of Bengal, 60 km south of Chennai.
- The town's religious centre was based by a 7th-century Hindu Pallava King—Narasimhavarman, also referred to as Mamalla—for whom the city was named.
- It contains several living 7th- and 8th-century Pallava temples and monuments, chief of that are the sculptured rock relief popularly referred to as "Arjuna's Penance," or "Descent of the Ganges," a series of sculptured cave temples, and a Shiva temple on the seashore.
- The town's 5 Rathas, or monolithic temples, are the remnants of seven temples, for which the town was referred to as Seven Pagodas.
- The entire assemblage jointly was selected a UNESCO World Heritage website in 1984.