

# SosinClasses

**INSTITUTE FOR IAS EXAMINATION**

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DAILY NEWS DIARY

Of

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**FOR PRELIMS AND MAINS**

Warm Greetings.

- DnD aims to provide every day news analysis in sync with the UPSC pattern.
- It is targeted at UPSC – Prelims & Mains.
- Daily articles are provided in the form of Question and Answers
- To have a bank of mains questions.
- And interesting to read.
- Providing precise information that can be carried straight to the exam, rather than over dumping.

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## GS 2

### ❖ POLITY & GOVERNANCE

#### **Q) Explain the purpose of Look Out Circular (LOC). Who can issue LOCs?**

##### **Context:**

The Punjab and Haryana High Court has held that a Look Out Circular (LOC), which prevents one from travelling abroad, must be supplied to the person at the time of being stopped at the airport and that the reasons should be communicated to the affected party.

##### **Look Out Circular:**

- It is a notice to stop any individual wanted by the police, investigating agency or even a bank from leaving or entering the country through designated land, air and sea ports.
- Immigration is tasked to stop any such individual against whom such a notice exists from leaving or entering the country.
- There are 86 immigration check posts across the country.

##### **Who can issue LOCs?**

A large number of agencies which includes the Central Bureau of Investigation (CBI), Enforcement Directorate, Directorate of Revenue Intelligence (DRI), Income Tax, State police and intelligence agencies are authorised to generate LOCs.

The officer should not be below the rank of a district magistrate or superintendent of police or a deputy secretary in the Union Government.

##### **What are the details required to generate an LOC and who issues it?**

- According to a 2010 official memorandum of the Ministry, details such as First Information Report (FIR) number, court case number are to be mandatorily provided with name, passport number and other details.
- The BOI under the MHA is only the executing agency.
- They generate LOCs based on requests by different agencies.
- Since immigration posts are manned by the BOI officials they are the first responders to execute LOCs by stopping or detaining or informing about an individual to the issuing agency.
- The LOCs can be modified; deleted or withdrawn only at the request of the originator.
- Further, the legal liability of the action taken by immigration authorities in pursuance of LOC rests with the originating agency.

##### **How are banks authorized?**

- ✓ After several businessmen including liquor baron Vijay Mallya, businessmen Nirav Modi and Mehul Choksi fled the country after defaulting on loans, the MHA in 2018 brought changes to the 2010 guidelines.
- ✓ It authorised the chairman, managing director and chief executives of all public sector banks to generate LOCs against persons who could be detrimental to economic interests of the country.

- ✓ Is there any other clause under which any individual can be stopped?
- ✓ The 2010 Ministry guidelines give sweeping powers to police and intelligence agencies to generate LOCs in “exceptional cases” without keying in complete parameters or case details.
- ✓ This was against suspects, terrorists, anti-national elements, etc. in larger national interest.
- ✓ After the special status of J&K under Article 370 was abrogated in 2019, LOCs were opened against several politicians, human rights activists, journalists and social activists to bar them from flying out of the country.
- ✓ The number of persons and the crime for which they have been placed under the list is unknown.

#### **Are individuals entitled to any remedial measures?**

1. Many citizens have moved courts to get the LOC quashed.
2. As per norms, an LOC will stay valid for a maximum period of 12 months and if there is no fresh request from the agency then it will not be automatically revived.
3. The MHA has asserted that LOCs cannot be shown to the subject at the time of detention nor can any prior intimation be provided.
4. The Ministry recently informed the Punjab and Haryana HC that the LOC guidelines are a secret document and the same cannot be shared with the ‘accused’ or any unauthorised stakeholder.
5. It cannot be provided or shown to the subject at the time of detention by the BOI since it defeats the purpose of LOC and no accused or subject of LOC can be provided any opportunity of hearing before the issuance of the LOC.

#### **Precedence set by the Judiciary:**

- In January this year, Delhi HC quashed an LOC against a Delhi businessman generated at the instance of the Income Tax department.
- The court said no proceedings under any penal law had been initiated against the petitioner” and the LOC was “wholly unsustainable.”
- It said that there cannot be any unfettered control or restriction on the right to travel and that it was part of the fundamental rights.
- Delhi HC has also asked the Director of the CBI to tender a written apology.

**Source: The Hindu**

## **❖ INTERNATIONAL RELATIONS**

**Q) Analyse the issues associated with the China’s illegal, unregulated and unprotected (IUU) fishing.**

**Context:**

In order to check China’s illegal fishing in the Indo-Pacific region, the Quadrilateral Security Alliance (Quad) has planned to launch a satellite-based surveillance initiative.

The leaders of Quad are reported to be getting ready to unveil a maritime surveillance initiative to protect exclusive economic zones in the Indo-Pacific against environmental damage.

#### **How will the proposed maritime surveillance system work?**

- The initiative will use satellite technology to connect existing surveillance centres in India, Singapore and the Pacific.
- This will help establish a tracking system to combat illegal, unregulated and unprotected (IUU) fishing.
- The satellite-enabled dragnet will track IUU fishing activities from the Indian Ocean and South-east Asia to the South Pacific.
- The idea is to monitor illicit fishing vessels that have their AIS (automatic identification system) transponders turned off to evade tracking.
- The move by the Quad security group is also seen to be aimed at reducing the small Pacific Island nations' growing reliance on China.

#### **Illegal fishing seen as such a big threat:**

- The unregulated plunder of global fishing stock poses a grave threat to the livelihood and food security of millions of people.
- Globally, fish provide about 3.3 billion people with 20% of their average animal protein intake.
- According to an FAO report, around 60 million people are engaged in the sector of fisheries and aquaculture.
- While the economic loss from illegal fishing has been difficult to precisely quantify, some estimates peg it around USD 20 billion annually.

#### **Threats posed by IUU Fishing:**

1. Illegal fishing has now replaced piracy as a global maritime threat.
2. In the Indo-Pacific region, like elsewhere, the collapse of fisheries can destabilise coastal nations.
3. It poses a much bigger security risk, as it can fuel human trafficking, drug crime and terror recruiting.

#### **Why is China in the dock?**

- The 2021 IUU Fishing Index, which maps 152 coastal countries, ranked China as the worst offender.
- China is considered responsible for 80% to 95% illegal fishing in the region after having overfished its own waters.
- It, in fact, is known to incentivise illegal fishing with generous subsidies to meet its growing domestic demand.

#### **China and distant-water fishing (DWF):**

China's DWF fleet has almost 17,000 vessels and is the largest in the world. Vessel ownership is highly fragmented among many small companies and the fleet includes vessels registered in other jurisdictions.

**Issues with Chinese IUU Fishing:**

- ✓ Chinese are often accused of pillaging ocean wealth with great sophistication and with little regard for maritime boundaries.
- ✓ China also uses them to project strategic influence and to bully fishing vessels from weaker nations.
- ✓ China uses destructive practises such as bottom trawling and forced, bonded and slave labour and trafficked crew, alongside the widespread abuse of migrant crewmembers.

**Source: Indian Express**

**GS 3****❖ SCIENCE & TECHNOLOGY**

**Q) What is the significance of AI chips? Explain the utility of AI chips.**

**Context:**

Market leader Nvidia recently announced its H100 GPU (graphics processing unit), which is said to be one of the world's largest and most powerful Artificial Intelligence (AI) accelerators, packed with 80 billion transistors.

**AI chips:**

- AI chips are built with specific architecture and have integrated AI acceleration to support deep learning-based applications.
- These chips, with their hardware architectures and complementary packaging, memory, storage and interconnect technologies, make it possible to infuse AI into a broad spectrum of applications.
- There are different types of AI chips such as application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), central processing units (CPUs) and GPUs, designed for diverse AI applications.

**Deep Learning:**

- Deep learning, more commonly known as active neural network (ANN) or deep neural network (DNN), is a subset of machine learning and comes under the broader umbrella of AI.
- It combines a series of computer commands or algorithms that stimulate activity and brain structure.
- DNNs go through a training phase, learning new capabilities from existing data.
- DNNs can then inference, by applying these capabilities learned during deep learning training to make predictions against previously unseen data.
- Deep learning can make the process of collecting, analysing, and interpreting enormous amounts of data faster and easier.

**Utility of AI chips:**

The adoption of Artificial Intelligence (AI) chips has risen, with chipmakers designing different types of these chips to power AI applications such as:

- ✓ Natural language processing (NLP).
- ✓ Computer vision.
- ✓ Robotics.
- ✓ Network security across a wide variety of sectors, including automotive, IT, healthcare, and retail.

**Are they different from traditional chips?**

- When traditional chips, containing processor cores and memory, perform computational tasks, they continuously move commands and data between the two hardware components.
- These chips, however, are not ideal for AI applications as they would not be able to handle higher computational necessities of AI workloads which have huge volumes of data.
- Although, some of the higher-end traditional chips may be able to process certain AI applications.
- In comparison, AI chips generally contain processor cores as well as several AI-optimised cores that are designed to work in harmony when performing computational tasks.
- The AI cores are optimised for the demands of heterogeneous enterprise-class AI workloads with low-latency inferencing, due to close integration with the other processor cores.

**What are their applications?**

- Use of AI chips for NLP applications has increased due to the rise in demand for chatbots and online channels such as Messenger, Slack, and others
- They use NLP to analyse user messages and conversational logic.
- Then there are chipmakers who have built AI processors designed to help customers achieve business insights at scale across banking, finance, trading, insurance applications and customer interactions.

**What firms are making these chips?**

- Nvidia Corporation, Intel Corporation, IBM Corporation, Samsung Electronics Co., Ltd, Qualcomm Technologies, Inc., and Apple Inc. are some of the key players in the AI chip market.
- Nvidia, which dominates the market, offers a wide portfolio of AI chips including Grace CPU, H100 and its predecessor A100 GPUs.
- It is capable of handling some of the largest AI models with billions of parameters.
- The company claims that twenty H100 GPUs can sustain the equivalent of the entire world's internet traffic.
- IBM's new AI chip, announced last year, can support financial services workloads like fraud detection, loan processing, clearing and settlement of trades, anti-money laundering and risk analysis.

### Scale of global market:

The Worldwide AI chip industry accounted for \$8.02 billion in 2020. It is expected to reach \$194.9 billion by 2030, growing at a compound annual growth rate (CAGR) of 37.4% from 2021 to 2030.

### What can be expected in the future?

- ✓ AI company Cerebras Systems set a new standard with its brain-scale AI solution, paving the way for more advanced solutions in the future.
- ✓ Its CS-2, powered by the Wafer Scale Engine (WSE-2) is a single wafer-scale chip with 2.6 trillion transistors and 8,50,000 AI optimised cores.
- ✓ The human brain contains on the order of 100 trillion synapses, the firm said, adding that a single CS-2 accelerator can support models of over 120 trillion parameters (synapse equivalents) in size.
- ✓ Another AI chip design approach, neuromorphic computing, utilises an engineering method based on the activity of the biological brain.
- ✓ An increase in the adoption of neuromorphic chips in the automotive industry is expected in the next few years.

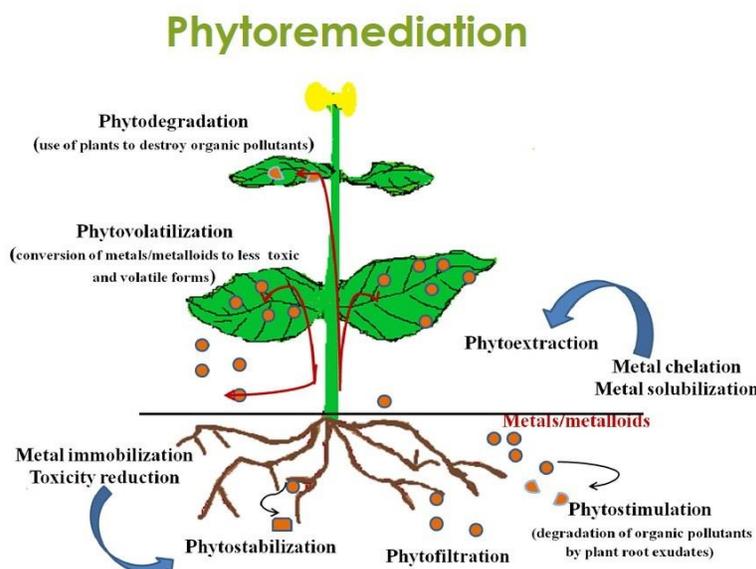
**Source: The Hindu**

## ❖ ENVIRONMENT & BIODIVERSITY

**Q) Heavy metal pollution of soil is “emerging at a speedy rate” in India due to industrialisation. Discuss.**

### Context:

A study published in the JNKVV (Jawaharlal Nehru Krishi Vishwavidyalaya) research journal concluded that heavy metal pollution of soil is “emerging at a speedy rate” in India due to industrialisation.



**How does soil get contaminated?**

- Soil contamination can happen due to a variety of reasons, including manufacturing, mineral extraction, accidental spills, illegal dumping, leaking underground storage tanks, pesticide and fertiliser use etc.
- These toxic heavy metals are then absorbed by food crops and other plants before they eventually make their way into our food chain, directly affecting human life along with ecology.

**Detoxing the soil:**

Many technologies have emerged to remediate this soil pollution. But these methods have been deemed lacking in terms of sustainability as they come with a large cost and have adverse effects themselves.

**Novel technique: Hyperaccumulators**

- Turning toward more sustainable and eco-friendly technologies, scientists have developed methods of “Phytoremediation”.
- It is a remediation method that uses living organisms like plants, microalgae, and seaweeds.
- One particular way to remove toxic heavy metals from the soil includes the use of “hyperaccumulator” plants that absorb these substances from the soil.

**Hyperaccumulator plants:**

- Phytoremediation refers to the usage of “hyperaccumulator” plants to absorb the toxic materials present in the soil and accumulate in their living tissue.
- Most plants do sometimes accumulate toxic substances.
- Hyperaccumulators have the unusual ability to absorb hundreds or thousands of times greater amounts of these substances than is normal for most plants.
- Most discovered hyperaccumulator plants typically accumulate nickel and occur on soils that are rich in nickel, cobalt and in some cases, manganese.

**Where are they found?**

- These hyperaccumulator species have been discovered in many parts of the world.
- They include the Mediterranean region (mainly plants of the genus Alyssum), tropical outcrops in Brazil, Cuba, New Caledonia (French territory) and Southeast Asia (mainly plants of the genus Phyllanthus).

**How can they be used to remove toxic metals from the soil?**

- Suitable plant species can be used to ‘pick up’ the pollutants from the soil through their roots and transport them to their stem, leaves and other parts.
- After this, these plants can be harvested and either disposed or even used to extract these toxic metals from the plant.
- This process can be used to remove metals like silver, cadmium, cobalt, chromium, copper, mercury, manganese, molybdenum, nickel, lead and zinc; metalloids such as arsenic and selenium; some radionuclides; and non-metallic components such as boron.
- But it cannot be used to remove organic pollutants from the ground due to metabolic breakdown.

**Advantages of phytoremediation with hyperaccumulators:**

1. One of the primary advantages of phytoremediation is the fact that it is quite cost-effective in comparison with other remediation methods.
2. The only major costs attached are related to crop management (planting, weed control, watering, fertilisation, pruning, fencing, harvesting etc.).
3. This method is also relatively simple and doesn't require any new kinds of specialised technology.
4. Also, no external energy source is required since the plants grow with the help of sunlight.
5. Another important advantage of this method is that it enriches the soil with organic substances and microorganisms which can protect its chemical and biological qualities.
6. Also, while the plants are growing and accumulating toxic heavy metals, they protect the soil from erosion due to wind and water.

**Limitations of hyperaccumulators:**

- ✓ For all its advantages, this kind of phytoremediation with hyperaccumulators has a big drawback: it is a very slow and time-consuming process.
- ✓ The restoration of an area with this process can take up to 10 years or more.
- ✓ This comes with a large economic cost, proportional to the size of the area under rehabilitation.
- ✓ The plants to conduct this rehabilitation must be carefully selected based on a large number of characteristics or they could act as an invasive species.
- ✓ They could grow out of control and upsetting the delicate ecological balance of not just the area under rehabilitation, but also the entire region it is part of.

**What can be done for their better utilization?**

Due to this reason, scientists only propose using species that are native to the region where the phytoremediation project is undertaken. This also has other benefits: these plants will already be acclimatised to the region and there will be no legal problems concerning the procurement, transport and use of seeds.

**Source: Indian Express**

**Q) Nagorno-Karabakh is a territorial conflict between:**

- a. Greece and Turkey
- b. Armenia and Azerbaijan
- c. Iraq and Kuwait
- d. Israel and Palestine

 **Hey from Yesterday –**

**Q) Consider the following statements with respect to the Great Himalayan National Park:**

1. It is located in the Kullu region in the state of Himachal Pradesh.
2. It is a UNESCO World Heritage Site.

**Which of the given statement/s is/are correct?**

- a. Only 1
- b. Only 2
- c. Both 1 and 2
- d. None of the above

**Answer: d**

**Explanation:**

- ✓ Great Himalayan National Park was constituted in 1984 and was formally notified as a national park in 1999. It is located in Banjar Sub-Division of Kullu District of Himachal Pradesh, India, in the far Western Himalayas.
- ✓ GHNP was awarded UNESCO World Heritage Site status in 2014, in recognition of its outstanding significance for biodiversity conservation. The park protects over 1,000 plant species, including many medicinal herbs, 31 mammal species and 209 bird species, as well as amphibians, reptiles and insects. Four of GHNP's mammal species and three of its bird species are globally threatened, including the musk deer and the western horned tragopan.
- ✓ Great Himalayan National Park is spread across four valleys (Sainj, Parvati, Tirthan and Jiwa Nal), each of which offers a wide variety of endemic and exotic flora and fauna. Himalaya is known to be home to 10% of the world's and 50% of India's endemic plant species.

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