# Prelim Bits 04-04-2024 | UPSC Daily Current Affairs

## Purana Qila

*The Archaeological Survey of India (ASI) has planned to further excavate the Purana Qila site near the kunti temple.*

- **About -** It is one of the ***oldest forts in Delhi*** located on the banks of ***Yamuna river.***
- The fort is popularly known as ***Indraprastha or Pandavon ka Qila or Old fort.***
- **Literacy evidence-** The fort was mentioned by the Greek traveler Megasthenes in the 4th century BCE as one of the seven cities of Delhi.
- **Built by -** The present citadel at Purana Qila was believed to have been built by the 2nd Mughal Emperor Humayun and was completed by Afghan Sher Shah Suri.
- The fort was the inner citadel of the ***city of Din Panah*** during Humayun's rule.
- The Qila was inspired by ***Jama Masjid,*** which was established 15 years before the reconstruction of Qila.
- **Architecture -** Purana Quila is roughly rectangular in shape having a circuit of walls built using ***red sandstone.***
- It was surrounded by a wide moat (deep trench) connected to river Yamuna, which used to flow on the east of the fort.
- **Gateways**

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| **Bada Darwaza (Large Gate)** | • It is tucked between two massive, curving bastions made of rubble masonry. |
| **Forbidden / North gateway (Talaqui darwaza)** | • It typically combines Islamic pointed arch with Hindu Chhatris and brackets. |
| **Southern gateway (Purana Quila, Humayun Darwaza)** | • It had a similar plan like northern gateway. |

- All of the gates are double-storeyed and comprise of huge semi-circular bastions flanking either of their sides.
- The ornate detailing on the pavilions (chhatris) and balconies (jharokhas)

of the fort gateways display traces of ***Rajasthani style.***

- The Qila-i-Kunha Mosque situated within the fort exhibits 5 doorways and is designed in the ***Indo-Islamic architectural style.***
- Sher Mandal is situated within the fort, it is an octagonal tower built by Humayun as an observatory and library.
- It is designated as a ***UNESCO World Heritage Site*** in 1993.

• **Excavation Findings**
- **Kushan period** - Gold foil, ivory sealing, copper coins, a tortoise amulet .
- **Gupta period -** Copper wheel, Gajalakshmi plaque,
- **Sultanate period -** Ivory locket.
- **Sunga and Kushan period** - House structures with brick walls and clay floors.
- **Rajput period -** Guard cell and a post hole.

**References**


1. Times of India | Purana Qila
2. Thrillophilia | Purana-qila
3. DM southeast | Purana Qila
4. Delhi Tourism | Purana Quila


## OptiDrop & C-CAMP

*The Centre for Cellular and Molecular Platforms (C-CAMP) in Bengaluru recently announced that it has developed a new platform to study single cells.*

## OptiDrop

- It is an innovative ***microfluidic chip-based platform*** that simplifies and reduces the cost of ***studying single cells*** encapsulated in droplets.
- **Developed by -** Centre for Cellular and Molecular Platforms (C-CAMP) and IIT, Madras.
- This research is supported by the Biotechnology Industry Research Council (BIRAC), the Department of Science and Technology (DST), and the Ministry of Human Resource Development (MHRD).
- It is a novel microfluidic chip-based platform allows for optical sensing of biological samples whereas traditional flow cytometers, used for fluorophore-based biomarker detection.

*Flow cytometry is a laser-based technology that analyzes the characteristics of cells or particles.*

- **Working -** Each droplet flows through the microfluidic channel lit by an incident beam, light is scattered from its surface and contents.
- The platform detects fluorescent signals associated with the individual droplet.
- The output or signals are captured, processed and read live through an in-house developed software.

- **Applications -** Diagnostics, therapeutics, agriculture, and animal health.
- **Unique feature-** The platform include live data visualisation, a smaller data footprint, and a 'closed' system design that prevents external contamination, making it a viable benchtop technology for broad clinical applications.

## Centre for Cellular and Molecular Platforms (C-CAMP)

- C-CAMP is a non-profit organization that supports research and innovation in the life sciences.
- It is one of the India's premier biosciences research and innovation hub.
- **Ministry** - Department of Biotechnology, Ministry of Science, Technology and Earth Sciences.
- **Established in –** 2009.
- **Headquarters –** Bengaluru, Karnataka.

### References


1. The Indian Express | C-CAMP, OptiDrop
2. The Hindu | OptiDrop platform
3. Times of India | C-CAMP develops new affordable platform


## Mauve stinger or purple-striped jellyfish

*A Venomous jellyfish blooms recently spotted along Visakhapatnam coast in Andhra Pradesh.*

- It is a toxic jellyfish that has a powerful sting which causes different degrees of illnesses and can be life-threatening.
- **Scientific Name** - Pelagia noctiluca.
- **Appearance -** This jellyfish usually appears a bluey purple (mauve) colour with a globe shaped umbrella covered in orangey brown warts.

- **Distribution** – It is found worldwide in ***tropical and warm-temperature seas.***
- **Habitat-** Pacific Ocean, North Atlantic Ocean, California and open oceans.
- **Life span-** These relatively fragile, easily damaged jellies probably live about a year or less.
- It is considered as one of the notorious bloom forming species in the world's oceans due to its wide distribution.

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| *A jellyfish bloom is when the population of the species increases dramatically within a short period of time, usually due to a higher reproduction rate.* |

- **Uniqueness -** Unlike other jellyfish species, it has stingers not just on the tentacles, but on the bell too.
- **Luminescence -** These are bioluminescent, having an ability to produce light in the dark.
- **Migration -** They participate in diel vertical migration, moving closer to the surface at night and deeper during the day.
- **Diet –** They are ***carnivorous,*** preying on zooplankton, small fish, crustaceans, other jellyfish, and eggs.

| **Conservation status** | |
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| **IUCN Red List Status** | Not Evaluated |
| **CITES status** | |
| **Convention on Migratory Species** | |

### References


1. The Hindu | Venomous jellyfish blooms in Andhra Pradesh
2. Sea Life Bas | Pelagia-noctiluca
3. Inaturalist | Pelagia-noctiluca


## Living Wills

*30 people in Thrissur, Kerala executed living wills recently.*

**Article 21 –**Right to die with dignity.
The Supreme Court allowed ***passive euthanasia since 2018.***

## Euthanasia

- Euthanasia refers to the practice of an individual ***deliberately ending their life,*** oftentimes to get relief from an incurable condition, or intolerable pain and suffering.
- It can be ***administered only by a physician.***
- **Types**
  - **Active euthanasia** – It involves an active intervention to end a person's life with substances or external force, such as administering a lethal injection.
  - **Passive euthanasia** – It refers to withdrawing life support or treatment that is essential to keep a terminally ill person alive or 'passive'.
- In case a person does not have a living will, members of their family can make a plea before the High Court to seek permission for passive euthanasia.
- It was strengthened with the concept of 'Advance Medical Directives' (AMD) or 'living will'.
- **Living will** – It is a legal document that allows patients who are no longer able to take medical decisions, to give instructions in advance concerning their medical treatment (Passive Euthanasia).
- Making a living will does not automatically imply that it will be given effect.
- Living wills have to be signed in the presence of two witnesses, attested before a notary or a gazetted officer, and handed over to a "competent officer" in the local government.
- If the patient becomes terminally ill and does not have decision-making capacity, the treating doctor is to authenticate the living will against the copy held with the custodian.
- The guidelines require that the decisions on withholding or withdrawing treatment are certified first by a primary medical board and then confirmed by a secondary medical board.
- The secondary board must have a doctor nominated by the ***chief medical officer.***
- However, local governments have not generally designated custodians for living wills, nor are they likely to.
- **Regular will**- A normal will is a last will and testament which is a formal,

legal declaration of the intention of individuals with respect to their property which they desire to be carried into effect after their death—strict formalities apply to its execution and implementation.

### References


1. The Hindu | Living wills implementation lags in India
2. Live Law | Right to Die


## Types of Startups

- **Startup** - In India, a startup is an entity that is incorporated or registered in India *not prior to 5 years*, with an annual turnover not exceeding rupees 25 crore in any preceding financial year.
- It is an entity that works towards innovation, development, deployment or commercialization of new products, processes or services driven by technology or intellectual property.

| Types of Startups | |
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| **Minicorn** | • Minicorns refer to startups which has a valuation ***of $1 million or more.*** <br>• They are considered ***less risky*** and are new to the game. |
| **Soonicorn** | • A soonicorn is a startup which is expected to reach ***unicorn status ($1 billion) very soon.*** <br>• It implies that the startup has gained a significant market share and is on a rapid growth trajectory. <br>• However, they are ***considered riskier*** as they still have to face significant competition in the market than established unicorns. |
| **Unicorn** | • A Unicorn is a startup that has achieved a valuation of ***$1 billion but less than $10 billion.*** <br>• It is used to describe the exceptional growth and potential of the company. <br>• Unicorn companies are often considered to be the ***most valuable and innovative in the world.*** |

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| **Decacorn** | • Decacorn is a startup that has a valuation of ***$10 billion or more.***<br>• Decacorns are companies which are highly valued and are often represented in *the elite category.*<br>• They are well-established, innovative and disruptive and have the strength to transform the industries in which they operate.<br>• They face a lot of challenges as they continue to grow and scale. |
| **Hectocorn** | • Hectocorn is used to describe startups that have a valuation of ***$100 billion or more.***<br>• They have reached extraordinary levels of valuation and now represent an *elite group of companies.*<br>• Investing in hectacorn companies is rare but they are considered safe investments because of their reputation and strong financial resources. |

**Reference**


1. DNA India | Different ‘corns’ of the startup world



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