

# 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 <u>oldest forts in Delhi</u> located on the banks of <u>Yamuna river</u>.
- The fort is popularly known as *Indraprastha or Pandavon ka Qila or* <u>Old fort.</u>
- 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 2<sup>nd</sup> 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

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 *<u>Rajasthani style</u>*.

- 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.

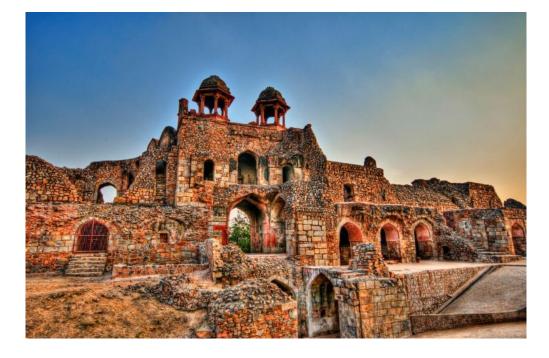
#### Excavation Findings

- **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. <u>Times of India | Purana Qila</u>
- 2. <u>Thrillophilia | Purana-qila</u>
- 3. <u>DM southeast | Purana Qila</u>
- 4. <u>Delhi Tourism | Purana Quila</u>

## **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 inhouse 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

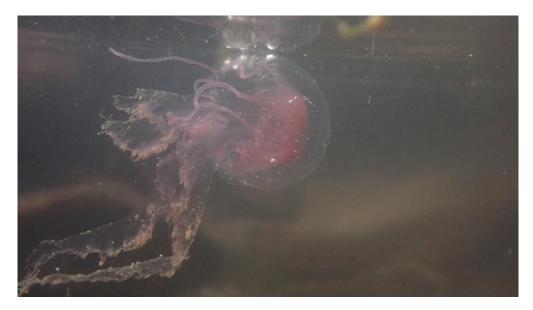
1. The Indian Express | C-CAMP, OptiDrop

- 2. The Hindu | OptiDrop platform
- 3. <u>Times of India | C-CAMP develops new affordable platform</u>

## 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 <u>tropical and warm-temperature</u> <u>seas.</u>
- 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.

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	
IUCN Red List Status	
CITES status	-Not Evaluated
Convention on Migratory Species	-Not Evaluated

#### References

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

## **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 <u>deliberately ending</u> <u>their life</u>, 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 <u>chief medical</u> <u>officer.</u>
- 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	
Minicorn	<ul> <li>Minicorns refer to startups which has a valuation <u>of \$1</u></li> <li><u>million or more</u>.</li> <li>They are considered <u>less risky</u> and are new to the game.</li> </ul>
Soonicorn	<ul> <li>A soonicorn is a startup which is expected to reach unicorn status (\$1 billion) very soon.</li> <li>It implies that the startup has gained a significant market share and is on a rapid growth trajectory.</li> <li>However, they are considered riskier as they still have to face significant competition in the market than established unicorns.</li> </ul>
Unicorn	<ul> <li>A Unicorn is a startup that has achieved a valuation of \$1 billion but less than \$10 billion.</li> <li>It is used to describe the exceptional growth and potential of the company.</li> <li>Unicorn companies are often considered to be the most valuable and innovative in the world.</li> </ul>
Decacorn	<ul> <li>Decacorn is a startup that has a valuation of \$10 billion</li> <li>or more.</li> <li>Decacorns are companies which are highly valued and are often represented in <i>the elite category</i>.</li> <li>They are well-established, innovative and disruptive and have the strength to transform the industries in which they operate.</li> <li>They face a lot of challenges as they continue to grow and scale.</li> </ul>
Hectocorn	<ul> <li>Hectocorn is used to describe startups that have a valuation of \$100 billion or more.</li> <li>They have reached extraordinary levels of valuation and now represent an <u>elite group of companies.</u></li> <li>Investing in hectacorn companies is rare but they are considered safe investments because of their reputation and strong financial resources.</li> </ul>

### Reference

1. DNA India | Different 'corns' of the startup world

