UPSC Daily Current Affairs| Prelim Bits 02-01-2025

Cells of Endocrine Glands

Why in News?

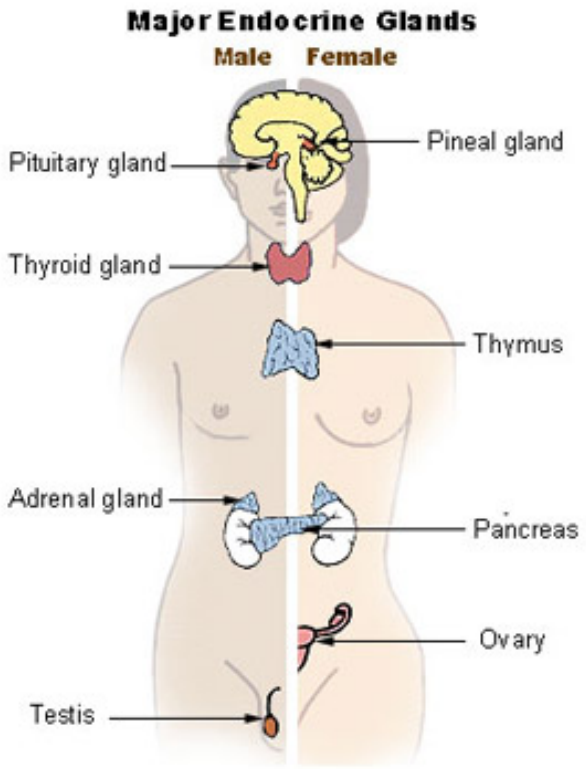
Recent analysis at the Weizmann Institute in Rehovot, Israel shows the number of cells in an endocrine gland that secrete hormones.

- **Endocrine Glands** – An organ that *makes hormones that are released directly into the blood* and travel to tissues and organs all over the body.
- **Functions** – It controls many body functions, including *growth and development, metabolism, and fertility.*

> ***Hormones*** *are signaling molecules found in most multicellular organisms which facilitate communication between organs and tissues in body that are far apart. The signals regulate a wide range of physiological and behavioral processes, such as growth and maturation, sleep, digestive functions, and stress responses.*

- **8 Major glands** – They are scattered *from head to toe.*

Endocrine Glands			
	Location	**Shape &/ Size**	**Weight**
Pineal gland	Midline of the brain	A grain of rice	50-150 mg
Pituitary gland	Hypothalamus of the brain	A pea	0.5–1 gram
Thyroid gland	Neck	A butterfly in shape	25 grams
Parathyroid gland	4 of which are in the neck	Size of a lentil seed	120 mg
Thymus	Between the lungs	Pyramid-shaped lymphoid organ	Average of 20 grams
Adrenal glands	Found atop each kidney	Triangular-shaped glands	5-10 grams in Adults
Pancreas	Behind the stomach	Tadpole-shaped gland	80-100 grams
Ovaries	On either side of uterus in female	Oval-shaped glands	-
Testis	Underneath penis in male	Round organs	-



- **Findings** – Every hormone producing cell has *about 2,000 target cells.*
- The number of hormone-secreting cells are in proportion to the number of cells that are targeted.
- Only *1-2% of cells in the pancreas produce insulin*, which targets the liver and muscle cells.
- Parathyroid gland has about 10 million cells that secrete the parathyroid hormone.
- Adrenal cortex over 5 grams has 4.5 billion cells that secrete cortisol.

Thyroid hormones keep up metabolic balance throughout the body and Pancreas has a major role in secreting digestive enzymes.

References

1. The Hindu| Analysis of Cells in each of the Endocrine Glands
2. NIH| Endocrine Glands

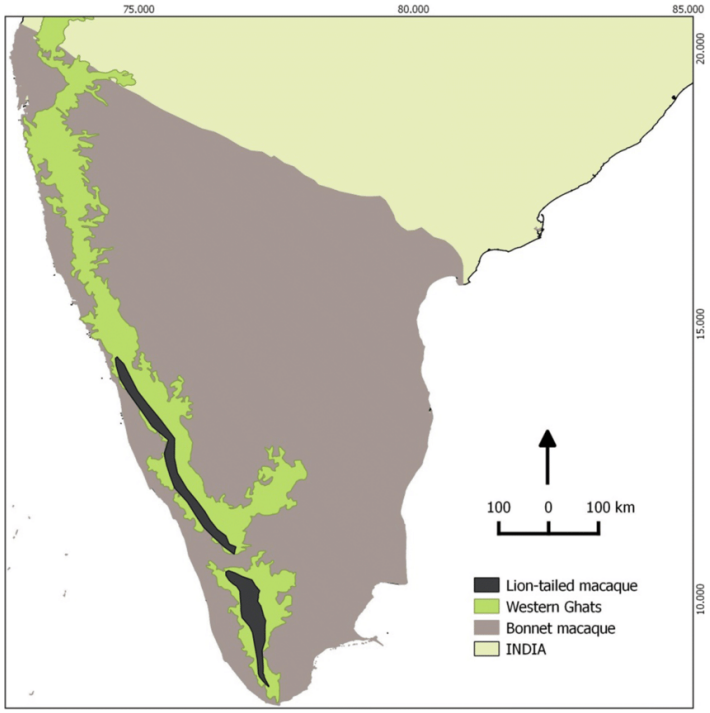
Lion Tailed Macaque

Why in News?

Recently, the researchers from Kerala Forest Research Institute (KFRI) said that human interactions threaten endangered lion-tailed macaque.

- **Lion-Tailed Macaque** – It is one of the smaller macaque species and an *Old-World monkey*.
  - **Scientific name –** Maraca Soleus.

    - **Genus Maraca** – known for its adaptability to human-altered environments.
- **Habitat –** Evergreen, semi-evergreen rainforests & monsoon forests.
- **Distribution –** Found ***only in India*** in the Western Ghats.
- **Distribution in Western Ghats** – Anamalai Hills, Nelliyampathy, Nilambur Ghats, Sholayar, Gavi, Sabarimala, Vallimalai Hills, Valparai and Agumbe.



- **Morphology** – Its body is covered with black fur and tail is long, thin, and naked, with a tuft of black puffy hair at the tip.
- Both males and females have a *grayish lion-like mane of fur* that surrounds the face and the face itself is bare and black.



- **Behavior –** It is *arboreal (*pertaining to trees) and *diurnal*.
- It is a social animal, living in groups of 30-40 animals.
- It is *polygynous*, having more than 1 wife or female mate at a time.

- **Uniqueness** – They are the ***only macaques in which males use loud call*** to let entering troops know their territorial boundaries.
- **Threats –** With only ***about 4,200 individuals*** remaining, they face severe *risks due to food provisioning*, which leads to malnutrition, and disease.
- The long-term consequences of increased human interaction include
    - Increased exposure to *zoonotic diseases* and diet-related illnesses.
    - Behavioural changes like *reduced foraging* in natural habitats and increased reliance on human-provided food.
    - Rise in *injuries, roadkill incidents*, and stress-induced mortality.

Approximately 25% of the macaque population in habitat areas engage in interactions with humans where hotspots like Valparai, Nelliyampathy, and Sabarimala have seen rising interactions, especially due heightened tourist and pilgrim footfall.

- **Conservation status**
    - **IUCN Status** – Endangered (as of IUCN Redlist 2023)
    - **CITES** – Appendix I.
    - **Wildlife (Protection) Act, 1972** – Schedule I.

References

1. The Hindu| Human Interactions threaten to lion-tailed macaque
2. Animal Diversity Web| Lion-Tailed Macaque

Pilippatti Merchant Guild Inscription

Why in News?

Recently, the epigraphy division of the Archaeological Survey of India (ASI) deciphered a Chola-period merchant guild inscription found at Pilippatti village in Pudukkottai district in Tamilnadu.

- The team copied the inscription on ***maplitho paper*** using the estampage method.

Estampage *is used in order to get an exact copy of an inscription. It is typically derived by applying wet paper onto the rock face, over which any ink material is wiped.*

- **Time period** – It dates back to the *10th century*.
- **Installation** – It was probably installed during the *reign of either Parantaka Chola or Uttama Chola*.
- **Features** – It has various symbols including Ankush (sharp pointed hook then used to control elephants), Trishul and lamps.



- **Trade groups** – It mentions trade groups of various territorial divisions, including
  - Ainurruvars of Mangala Nadu, Puramalai Nadu, Poongundra Nadu, Manalur Nadu.
  - Virapattinam of Kodumbalur.

ASI team has also copied nearly 10 inscriptions from the walls of ***Pilavaneswarar temple in Virachilai in Tirumayam*** *taluk. These 11th century inscriptions of Sundarapandiyan and Veerapandiyan mention donations given to the temple.*

Trade guilds

Guilds or Shreni*, in Ancient India, was an association of traders, merchants, and artisans. Generally, a separate shreni existed for a particular group of persons engaged in the same vocation or activity.*

- Traders founded guilds and called themselves as *sudesi, nanadesi, ainurruvar* and others.
- Several trade guilds flourished during the Chola period.
- Members of the trade guilds convened their meetings to make decisions and engraved them as inscriptions and installed them in public places.

Regional Trade Guilds in Tamil Landscape

• **Regional Trade guilds** – There are some stray occurrences like Vellarai Nigamaththor in the Tamil-Brahmi inscriptions.
• **Autonomous functioning** – From 9th century onwards, such trade guilds started functioning in a distinct manner.
- Ayyapozhil Ainnurruvar (The 500 of Aihole)
- Tisaiayirathu Ainnurruvar (The 500 of the 1000 directions)
- Nanadesi (those of various countries)
- Valanjiyar (Balijas or Banajigas)
- Pathinenvishayaththar
- Manigramathar.

References

1. The Hindu| Copying of Chola Trade Guild Inscriptions
2. Government of Tamil Nadu| Guild Inscriptions

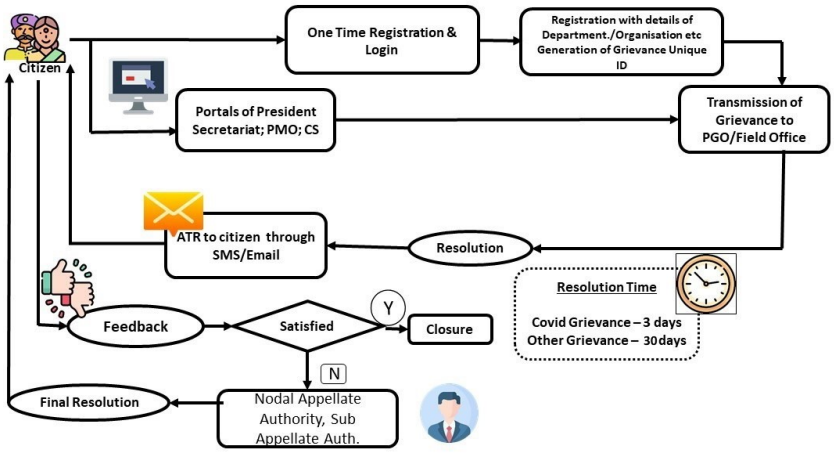
Centralized Public Grievance Redress and Monitoring System (CPGRAMS)

Why in News?

Recently, the Centralized Public Grievance Redress and Monitoring System (CPGRAMS) successfully resolved over 70 lakh grievances from 2022-2024.

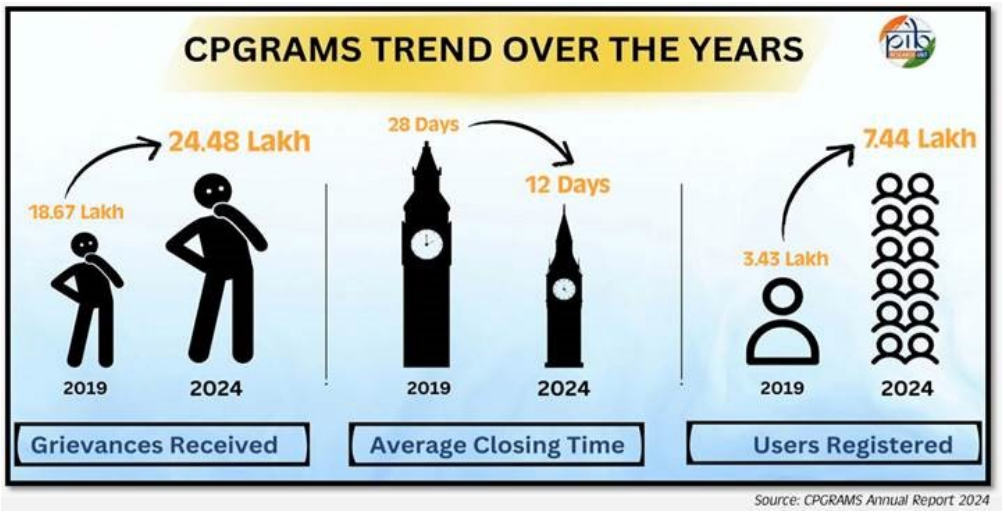
- **CPGRAMS** – It is a 24*7 online platform for citizens to ***lodge their grievances to the public authorities*** on any subject related to service delivery.
- **Launched in** – *2007*.
- **Monitored by** – Department of Administrative Reforms and Public Grievances, Ministry of Personnel, Public Grievances & Pensions.
- **Coverage** – It connects 92 Central Ministries, Departments and Organizations with 36 States/UTs.
    - **Supported by** – Over 73,000 active subordinate users.
    - **Organizations** – 96,295 registered.
- **Compliant filing** – Citizen can file complaints through the *web portal or mobile app or UMANG app.*
- Each complaint receives a *unique registration ID*, allowing users to track its progress.
- **Tracking** - *My Grievance app* serves as an independent platform for filing and tracking complaints.
- **Grievance Redressal timeline** – ***21 days***.
- **Appeal mechanism** – If a citizen is dissatisfied with the resolution, they file an appeal once the grievance is closed.

CPGRAMS PROCESS FLOW



- **Matters not treated as Grievance**
  - Right To Information (RTI) Matters
  - Court related / Subjudice matters
  - Religious matters
  - Suggestions
  - Service matters of Government employees.
- **Policy Guidelines 2024** – Ensuring quicker resolutions & better citizen engagement.

10-Step Reforms	
Integrated Platform	Whole of Government Approach
Nodal Officers	Feedback Call Centre
Grievance Cells	Grievance Redressal Assessment Index
Reduced Timelines	Training and Capacity Building
Escalation Process	Regular Review



From 2022 to 2024, the system enabled the resolution of 70,03,533 grievances and mapped 1,03,183 Grievance Redressal Officers (GROs) as on 31 October 2024.

Initiatives

• **4th Sushasan Saptah & Prashasan Gaon ki Ore Campaign** – It aims to resolving public grievances and improving service delivery.
  - Service delivery – 2.9Cr applications disposed.
  - State portals – 14 lakh grievances redressed.
  - CPGRAMS – 3.4 lakh grievances redressed.
• **NextGen CPGRAMS** – Building on *CPGRAMS 7.0*, offer features like grievance filing via WhatsApp/Chatbot, voice-to-text lodging, instant alerts and auto-escalation.
• It is set to launch on *1st July 2025*.

References

1. PIB| CPGRAMS A Citizen-Centric Path
2. PG Portal| CPGRAMS

One Liners 02-01-2025

History, Art and Culture

Blood money

• It is also *known as diya*, a part of the legal systems of several Islamic countries.
• **In Sharia law** – The victim's family is entitled to decide how the murderer should be punished.
• The murderer might be forgiven if he/she is repaid with '*diyya' (monetary compensation)*.

Glass Bridge in Kanyakumari, Tamilnadu

Tamil Nadu has recently opened an innovative glass bridge spanning the sea, improving access between 2 iconic sites.

• **Connection** – It connects the *Tiruvalluvar Statue with the Vivekananda Rock Memorial* in Kanniyakumari.
• The occasion commemorated the Tiruvalluvar statue's 25th anniversary, underlining its importance in Tamil culture.

Statue of Wisdom

• It is the Tiruvalluvar Statue in Kanyakumari in Tamilnadu.
• **Opened in** – *2000*, erected on a rocky island in the sea.
• **Height** – It towers at *133 feet*, symbolizing the 133 chapters of the Tirukkural.
• **Importance** – It illustrates the principle of social equality conveyed in the Thirukkural: "Pirapokkum ella uyirkkum" (Everyone is equal at birth).

International Relations and Issues

Optional Practical Training (OPT) programme of U.S.

• It authorises *international students*, who are in the US on an F-1 visa, *to work for up to 12 months in an area* "directly related" to their major area of study.
• Indian students make up the largest international cohort in U.S.
• **Eligibility** - International students who are enrolled full-time for at least 1 academic year in the US can apply for OPT.
• **Pre-completion OPT** - Work before completing their studies, up to 20 hours a week while the academic session is underway, and full-time when the session is not.
• **Post-completion OPT** - Work after completing their studies, at least 20 hours a week or full-time.
• Students who have obtained a degree in Science, Technology, Engineering and Mathematics (STEM) can extend their post-completion OPT by another 24 months (Total 3 years).

Economy

Non-performing assets (NPAs)

30% jump in gold loan NPAs in April-June on slowing economy, debts.

• **NPAs** - They are loans or advances that have not been paid back on time, or that have stopped generating income for the lender.
• An asset is considered an NPA if the *interest or principal* payment is *overdue for 90 days or more*.
• **Substandard asset** - An asset that has been classified as an NPA for 12 months or less
• **Doubtful asset** - An asset that has remained in the substandard category for 12 months
• **NPA ratio** - It is calculated by dividing the non-performing assets by total loans and multiplying by 100.

Security

Z Plus security

Former Prime Minister Manmohan Singh's wife Gursharan Kaur will continue to be guarded by the Central Reserve Police Force (CRPF) under Z-plus category.

• It is the *highest level of protection* provided to some of the most powerful yet most vulnerable citizens.
• **Protection force** – It includes a *55-person entourage*, of which, usually, 10 personnel are NSG commandos, while the rest may be the civil police.
• **SPG coverage** – These people sometimes also get an additional Special Protection Group covering which usually, the Prime Minister and their family members are provided.

Cyber Volunteer Framework

• **Initiative by** - Indian Cyber Crime Coordination Centre (I4C).
• **Objective** – To enable *citizens to enrol as cyber volunteers* for reporting unlawful content, dissemination of cyber hygiene, and as cyber expert to aid law enforcement.

Tehrik-e Taliban Pakistan (TTP)

• It is also known as the *Pakistan Taliban*.
• **Alliance of** – Formerly disparate militant groups that came together in 2007 following Pakistan military operations against Al-Qaida-related militants in the Federally Administered Tribal Areas.
• **Formation** – Under the leadership of Baitullah Mehsud.
• **Regions** – It is rooted along the *Afghanistan/Pakistan border*.

Science

Willow

• It is a *quantum processor.*
• **Launched by** – *Google*.
• **Features** – The coherence time of data qubits on Willow is about 100 microseconds, which is more than the coherence time of the physical qubits.
• **Advantages** – It has significantly better error correction and is significantly faster than other quantum computers.

Chemicals in Flame Retarding Plastics

• **Decabromodiphenyl ether (decaBDE)** - It is used in many products, including electronics, furniture, and textiles.
• It is known to be hazardous and persistent in the environment.
• **2,4,6-Tribromophenol** - It is in black plastic and it is associated with *thyroid disruption in humans* and mice and has been detected in serum, breast milk, and placenta.

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