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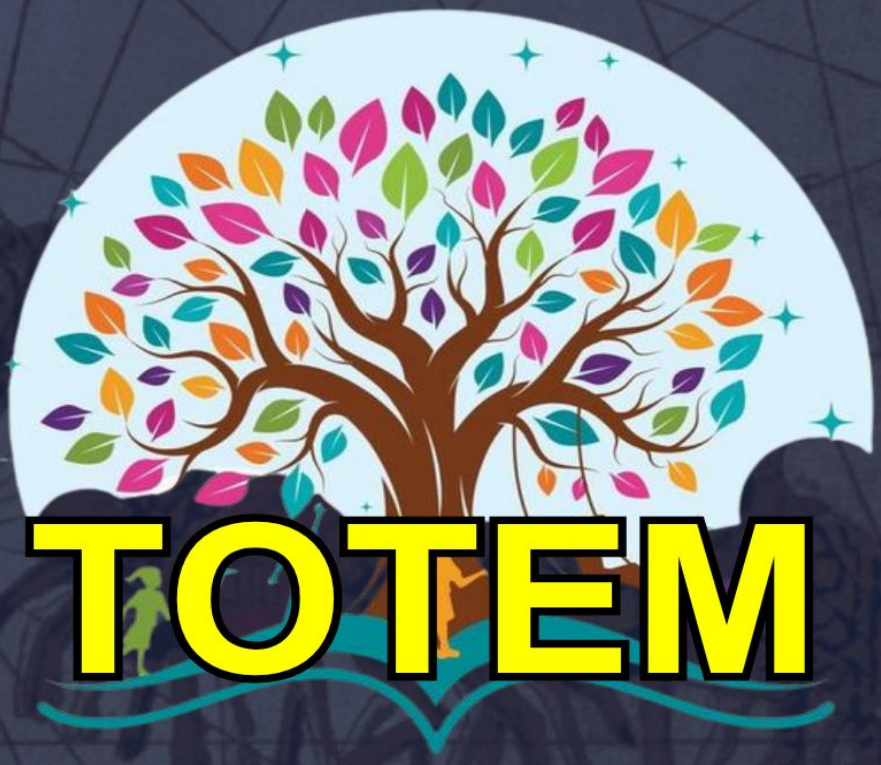

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PAPER - 1

PHYSICAL & ARCHAEOLOGICAL ANTHROPOLOGY

1. Primates in Peril

(Use this content in the topic of syllabus – Unit 1.5 Paper I)



- A recent report titled ***Primates in Peril*** highlights the increasing risks faced by **25 primate species** from across the globe.

- Out of 25 primates, **6 species belong to Africa**, **4 species from Madagascar**, **9 species from Asia**, and **6 species from South America (Neotropics)**

What are the Key Primate Species Identified in the Report?

- **Most Endangered Primates:** The **Cross River Gorilla** and **Tapanuli Orangutan** are highlighted as **critically endangered** in the report. **Cross River gorillas** are scattered in at least **11 groups** in Cameroon and Nigeria, while the **Tapanuli orangutan**, the most endangered great ape, has fewer than **800 individuals**. Both are listed as **Critically Endangered** by the **International Union for Conservation of Nature (IUCN)**.

- **Primate Species from India: Phayre's Langur** and the **Western Hoolock Gibbon**, found in **Northeast India and Bangladesh**, were **evaluated** based on **risks** faced by them, but ultimately **excluded from the final list.**

- **Phayre's Langur:** This primate, known for its distinct **'spectacled' appearance**, is primarily found in **eastern Bangladesh** and **northeastern India**, including **Assam,**

Mizoram, and Tripura.

- **Behaviour:** They are **arboreal (primarily live in trees)**, **diurnal**, and **folivorous** (primarily leaf-eating), with a preference for **young leaves.**

- **Conservation Status:** It is listed under **Schedule I** of the **Wildlife (Protection) Act, 1972** and is listed as **Endangered** in **IUCN Red list.** It is found in three **Protected Areas** i.e., **Sipahijala**, **Trishna**, and **Gumti Wildlife Sanctuaries** in **Tripura**.

- **Western Hoolock Gibbon** (*Hoolock hoolock*): It is a **tailless ape** found in the **tropical forests** of **India, Bangladesh, and Myanmar**, with **black males** having a **white stripe** above their eyes while **females are light colored (beige, brown, grey).**

  They are known for their **loud, melodic duet calls**, sung by male-female pairs to **mark territory**. Their vocal patterns are **similar in both sexes**.

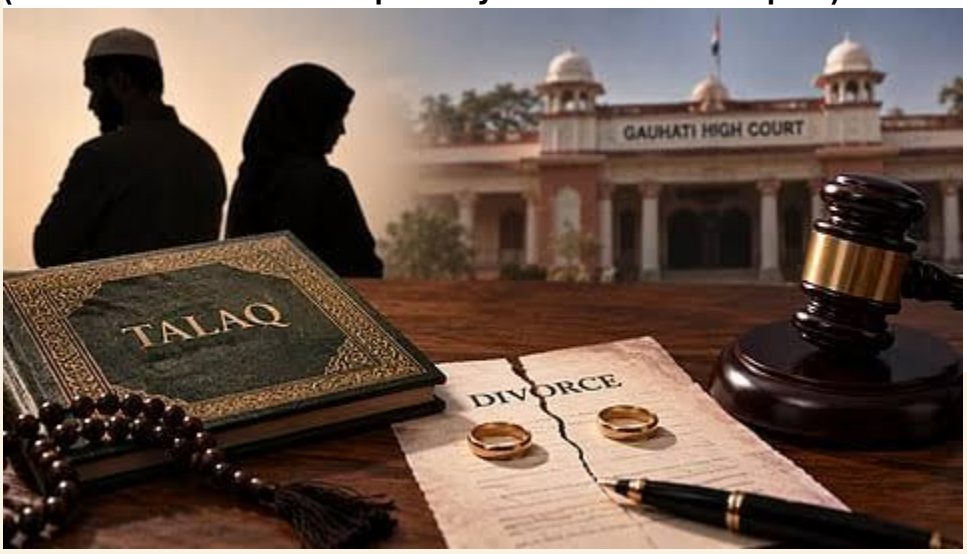
- **Behaviour:** Gibbons are **arboreal** and navigate the canopy by **leaping and swinging**, with an **omnivorous diet** of plants, invertebrates, and bird eggs.

  They live in **monogamous family groups**, giving birth to a **single offspring** that stays with the mother for about two years.

- **Habitat:** They thrive in **moist deciduous, evergreen, subtropical, and lowland forests**, with a range spanning **Northeast India**, **Bangladesh**, and **western/northern Myanmar**.

2. Talaq-e-Hassan' Valid Form of Divorce

(Use this content in the topic of syllabus – Unit 2.3 Paper I)



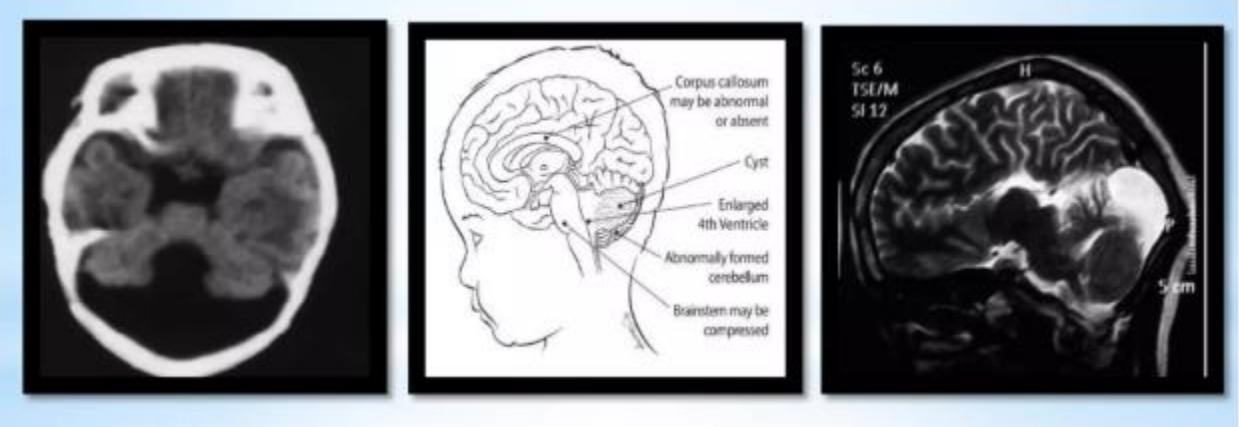
- The **Gauhati High Court** has held that **Talaq-e-Hassan is a valid form of talaq and is not prohibited in India as of now**. The judgment was delivered by Justice **Arun Dev Choudhury** on **8 September 2026**.

Key Points:

- **Talaq-e-Hassan:** It involves the pronouncement of the word **'talaq' once a month for three consecutive months**, with an interval between the pronouncements.
- **Case Background:** The petition was filed by **Rakibul Bhuyan**, who sought registration of his divorce pronounced through Talaq-e-Hassan.
- **Three Pronouncements:** The petitioner stated that Talaq was pronounced on three different occasions in **March, April and May 2026**, in the presence of witnesses.
- **Court's Observation:** The High Court observed that **Talaq-e-Hassan is a valid form of talaq and is not prohibited in the country as of now**.
- **Registration of Divorce:** The Court directed the petitioner to approach the jurisdictional **Marriage & Divorce Registrar** for registration under the **Assam Compulsory Registration of Muslim Marriages and Divorce Act, 2024**.
- **Section 12:** If the petitioner fulfils the requirements under **Section 12 and its proviso** of the 2024 Act, the Registrar can record the divorce in the divorce register.
- **Right to Challenge:** The Court clarified that the wife, who was not present despite service of notices, remained free to **challenge the Talaq-e-Hassan before an appropriate forum**.

3. Consanguinity Marriage and Inbreeding

(Use this content in the topic of syllabus – Unit 2.3 Paper I)



- In **Uppada coast** villages in Andhra Pradesh, **consanguineous marriages** are causing conditions like **cerebral palsy**, **Dandy-Walker Malformation (DWM), albinism,** and other deformities.
- A consanguineous marriage is a **union** between two people who are **related by blood,** usually as **second cousins or closer.**
- It is different from incestuous marriages (a marriage between **direct descendants** like between father and daughter, mother and son, brother and sister).
- Practices like the **'Voni' promise**, an **oral agreement** made at a girl's birth, enforce consanguinity in the above case.
- **Inbreeding** is the **genetic outcome** of consanguineous marriage. Inbreeding increases the degree of **homozygosity** to the **offspring** and also the expression of **recessive traits.**
- **In homozygosity,** an individual inherits the **same alleles** for a particular gene from both parents leading to **genetic disorders.**
- **Alleles** are **different versions of the same gene.**

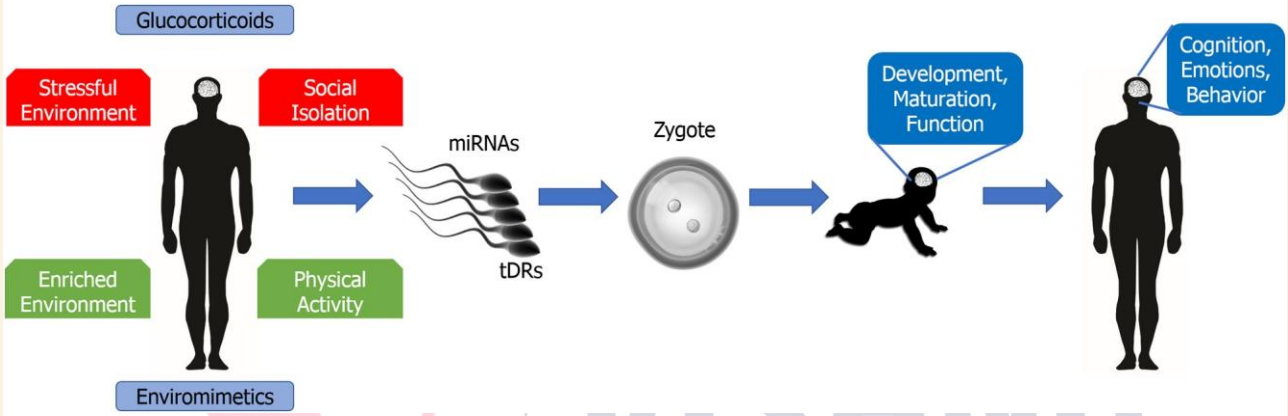
E.g., the gene for eye colour may have alleles for **blue, brown, or green eyes.**

- Inbreeding increases the **genetic load.** Genetic load measures the **rate of damage** caused by the presence of certain **deleterious or disadvantaged genes** in the population.

- The **Hindu Marriage Act** prohibits Sapindas marriage between **two Hindus** unless there is an **established custom.** A **sapinda marriage** involves individuals who share a **specific degree of familial closeness.**

4. Key Points on Transgenerational Epigenetic Inheritance

(Use this content in the topic of syllabus – Unit 9.1 Paper I)



- **Definition Beyond DNA:** TEI refers to the transmission of "epigenetic marks" (chemical tags like DNA methylation or histone modification) from one generation to the next, affecting gene expression without altering the actual DNA sequence.
- **The "Lamarckian" Revival:** While Darwinian evolution focuses on random mutations, TEI provides a mechanism for the inheritance of acquired characteristics, suggesting that a parent's environment (diet, stress, toxins) can influence the biology of offspring.
- **The Barker Hypothesis (Fetal Origins):** This central concept posits that environmental stressors during critical periods of prenatal development "program" the fetus for certain health outcomes, such as increased risks of obesity or diabetes in adulthood.
- **Impact of Intergenerational Trauma:** Anthropological studies in 2025 have focused on TEI in survivors of historical trauma (e.g., famine or war).
- Research shows that descendants often exhibit altered cortisol (stress hormone) levels, indicating a biological "memory" of their ancestors' suffering.
- **Nutrition and "Metabolic Memory":** Landmark studies (like the Dutch Hunger Winter) prove that maternal malnutrition can lead to epigenetic changes in children and grandchildren, predisposing them to metabolic disorders even if they live in food-abundant environments.

- **Paternal Contribution:** Contrary to older theories that focused only on the mother, 2026 research confirms that sperm carries epigenetic information.

  A father's diet or toxic exposure can transmit "metabolic stress" to his children via small RNA molecules in the sperm.

- **Adaptive vs. Maladaptive Responses:** TEI is seen as a rapid adaptive mechanism. For instance, an ancestor's exposure to cold may program descendants to store more fat;

  However, this becomes "maladaptive" if the environment changes to a warm, high-calorie one.

- **Relevance to Tribal Health:** In the Indian context, TEI is used to study why certain tribal groups (who faced generations of displacement and food insecurity) show high rates of stunting and wasting despite modern nutritional interventions.

- **Environmental Toxins:** Exposure to endocrine-disrupting chemicals (like pesticides) has been shown to cause epigenetic changes that persist for up to four generations, affecting fertility and immune responses in descendants who were never directly exposed.

- **Ethical and Policy Implications**: TEI introduces the concept of "Biological Responsibility." It shifts public health policy toward protecting the health of the current generation as a way to safeguard the genetic and epigenetic integrity of the next four generations.

5. Palaeogenomics

(Use this content in the topic of syllabus – Unit 2 Paper I)



How can DNA be extracted from fossils?

- The challenge with extracting DNA from fossils is that it degrades fairly quickly and there is little usable material. Because such bones may have passed through several hands, the chances of it being contaminated by human as well as other bacterial DNA get higher.
- This has been one of the major stumbling blocks to analysing DNA from fossils. One of Pääbo's early forays was **extracting DNA from a 2,500-year-old Egyptian mummy** and while it caused a stir and helped his career, much later in life he said that the **mummy-DNA was likely contaminated**.
- DNA is concentrated in **two different compartments within the cell: the nucleus and mitochondria, the latter being the powerhouse of the cell.**
- **Nuclear DNA stores most of the genetic information**, while the much smaller mitochondrial genome is present in thousands of copies and therefore more retrievable.
- With his techniques, Pääbo managed to sequence a region of **mitochondrial DNA from a 40,000-year-old piece of bone.** This was the first time a genome from an extinct human relative was pieced together.
- Subsequently, he managed to extract enough nuclear DNA from **Neanderthal bones to publish the first Neanderthal genome sequence in 2010.** This was significant considering that the first complete human genome was published only in 2003.

What has Pääbo's work shown?

- Pääbo's most important contribution is demonstrating that ancient DNA can be reliably extracted, analysed and compared with that of other humans and primates to examine what parts of our DNA make one distinctly human or Neanderthal.

Comparative analyses with the human genome demonstrated that the most recent common **ancestor of Neanderthals and Homo sapiens lived around 8,00,000 years ago.**

- In 2008, a 40,000 year-old fragment from a finger-bone, sourced from a Siberian cave in a region called Denisova, yielded DNA that, analysis from Pääbo's lab revealed, was from an entirely **new species of hominin called Denisova.**

This was the first time that a new species had been discovered based on DNA analysis.

Further analysis showed that they too had interbred with humans and that 6% of human genomes in parts of South East Asia are of Denisovan ancestry

6. Species Hybridization

(Use this content in the topic of syllabus – Unit 1.6 Paper I)



- **Earlier conjecture:** Scientists initially thought that **interbreeding** among the two groups was more **isolated** to a particular place and time — specifically, when they encountered each other in western Eurasia shortly after modern humans left Africa.

This idea stemmed from the fact that the **genomes of modern humans from outside Africa are only about 2 per cent Neanderthal**, on average.

- **New findings: Multiple interbreeding** happened between **Neanderthals** and the ancestors of **modern humans** across Europe and Asia than scientists and dilutive effects might have occurred. This is because Neanderthal ancestry is **12 to 20 per cent higher** in modern **East Asians** compared to modern Europeans**.**

- **This could be due to following reasons:** One is that East Asians happen to have interbred more with Neanderthals. Of the multiple ancestral populations of Europeans, one had very little Neanderthal ancestry, diluting the overall Neanderthal contribution.

- **Denisovans contributed** to the **modern human gene pool at least twice**, leaving behind two distinct genetic components — one mostly in Papuan and Australian aboriginal populations, the other primarily in **East Asian** populations.

- **Probable reasons why Neanderthal DNA was purged from modern human genomes:** Neanderthal DNA was of less benefit to modern humans as their **environments changed** over time **harmful mutations** were more common in Neanderthals due to inbreeding.

Hybridization:

- Mixed-species association can result in the production of hybrid offspring in the wild.

- Hybridisation – means a breakdown of species isolation mechanisms. Traditional belief about hybridisation – is essentially unnatural, and hence unwelcome.

  Today, with rapid strides in science, it may be worthwhile to reconsider the biological importance of hybridisation, a naturally occurring and ubiquitous process, unsullied by value-laden human prejudices.

- **Methodology:** Scientists developed computer simulations that modelled how DNA would get shared during a range of numbers of encounters between modern humans and Neanderthals. Then, they looked into which models best fit modern human genetic databases

7. Sanskritisation

(Use this content in the topic of syllabus – Unit 5.3 Paper I)



- Sanskritisation was a term coined and popularised by M.N. Srinivas, an social anthropologist in his book [*Religion and Society Among the Coorgs of South India* (1952)] to describe the **cultural mobility** in the traditional caste structure of Indian society.

- M N Srinivas writes, "Sanskritization is a process by which a lower caste or tribe or any other group changes its customs, rituals, ideology and way of life in the direction of a higher caste."

  Examples include wearing of sacred thread, denying the use of meat and liquor, observing endogamy, prohibition of widow remarriage etc.

- In his study of the coorgs of Mysore, M.N. Srinivas came to know that the lower castes were trying to raise their status in their caste hierarchy by adopting some cultural ideals of the Brahmins.

- As a result they left some of their ideals which are considered to be impure by the Brahmins.

- To explain this process of mobility, Srinivas used the term 'Brahminization'. Later on he called it 'Sanskritization' in a broad sense. In some societies the lower caste people followed not only the customs of the Brahmins but also the customs of the locally

dominant castes like Kshatriyas and Vaisyas to raise their status.

- Srinivas pointed out how in a caste structure with rigid and hereditary placements/ranks, Sanskritisation became a process through which mobility in caste positions/roles became possible for certain castes.

- Sanskritization process is not only confined to the caste people of Hindu society, it is also found among the tribal society.
- Therefore, it is a long-drawn phenomenon that is not restricted to the caste hierarchy/religious structure alone, but also encompasses a wider social and cultural process that is integrative of, and not limited to, the Hindu caste order.

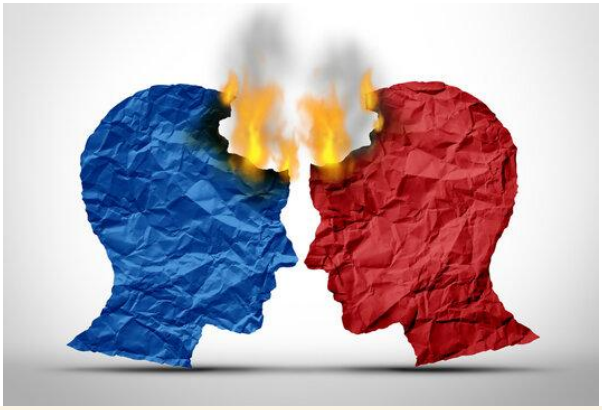
- In Sanskritisation there is culture accumulation as well as culture depletion. The "lower" castes are giving up their own rituals, customs, folkways, and values. Hence, there is culture depletion.

- On the other hand, there is culture accumulation in view of the fact that they are taking over new values, traditions, and customs from the upper castes.

- The concept of Sanskritization has also given rise to De-sanskritization. There are some instances in modern times, some of the higher castes are imitating the behaviour pattern of "lower" caste, and for example Brahmins have started taking meat and liquor. This process is called De- sanskritization.

8. Ethnocentrism

(Use this content in the topic of syllabus – Unit 2.1 Paper I)



- Ethnocentrism broadly refers to ethnic self-centeredness and self-importance. This attitude could lead an individual to believe that their own culture or way of life is the **correct way of living.** It could also result in **hostility** towards other cultures.

Ethnocentrism is therefore the tendency to view one's own group, the 'in-group', as the ideal and all other groups as the 'out-groups'. The in-group's boundaries are defined by one or more observable characteristics such as language, accent, physical features or religion, indicating common descent.

Definitions

- **Charles Darwin** argued that competition with other groups makes people more cooperative with members of their own group, which further influences group prosperity.

- **Herbert Spencer** argued that societies in general are characterised by **internal amity** (towards members of one's group) and **external enmity** (towards everyone else). Neither of them used the term ethnocentrism, however.

  Developing their ideas, it was the **anthropologist William Sumner** who is first said to have coined the term in 1906 in his book Folkways and also used the concepts 'in-group' and 'out-group'.
  For the geologist and anthropologist William John McGee, ethnocentrism was a particular way of thinking similar to **egocentrism**, but characteristic of ethnic groups.

Why ethnocentrism was considered bad?

- **Curtails Individual Capabilities**: Early anthropologists argued that this feeling of superiority about the in-group curtailed an individual's ability to understand the practices and values of other groups and to trust them.

- **Social Tension:** This feeling could lead to prejudice, dislike, dominance, ethnic conflict, and even war.

- **Political Choices:** Ethnocentrism can also affect consumer choices, voting and may lead to instability of democratic institutions.

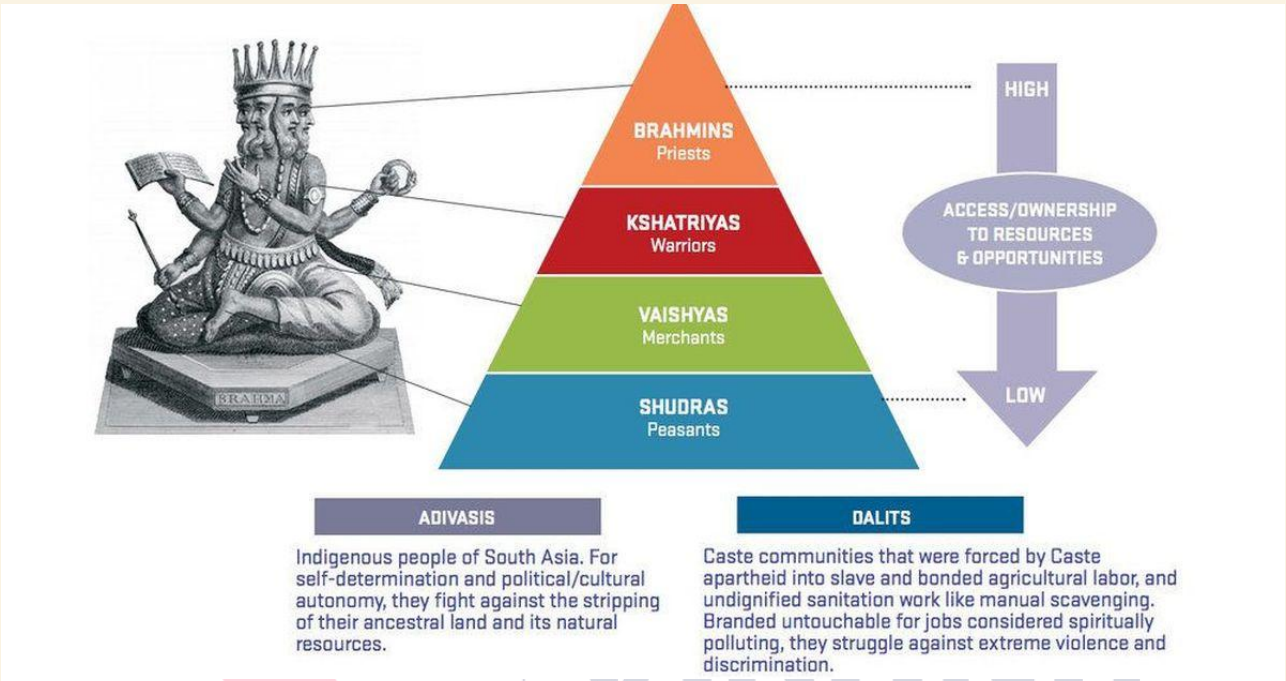
Ethnocentrism, attitude & behaviour

- Later theorists argued that ethnocentrism might **simply be preference** for in-groups over out-groups. They said that the segregation of in-groups and out-groups should not necessarily be **attributed to bias.**

- In other words, they argued that you can be indifferent towards out-groups or even like them, but less than one like their in-group. One may dislike an out-group, but that attitude might not necessarily translate into some sort of discriminatory behaviour in a given situation.

9. Characteristics of Caste System in India

(Use this content in the topic of syllabus – Unit 3.2 Paper I)



- **Division of the society into segments –** In the society there are several groups and associations and the people associated with these groups and associations care more for their own castes than for the community as a whole.

- **Hierarchy:** The caste system is always characterised by a hierarchal arrangement which implies that there are some castes which are considered superior to the others. Membership in the caste hierarchy is based on birth and is more or less fixed.

  Traditionally it is the hierarchal arrangement of caste according to different degrees of dominance and privileges.

- **Restrictions on Interaction:** In the caste system, there are several restrictions on interaction. The members of one caste cannot mix or move freely with the members of the other castes. This ban on interaction becomes still more rigid when the question of mixing of a superior caste with an inferior one comes to the front.
  Every caste abides by well-established customs and well-defined norms of interaction.

- **Social and religious disabilities:** In a rigid caste system the members of a higher caste impose certain disabilities and restrictions on other castes as well as on themselves.

  People belonging to the lowest caste in the hierarchy are not allowed to dwell in the cities and purchase property in the localities inhabited by the high caste people.

They are not allowed even to go to the temples and worship there. They are not even permitted to study religious books etc. They are not also allowed to use village wells or ponds, used by the higher castes.

- **Imposition of restrictions on Commensality:** These refer to the restrictions on eating and drinking. Each caste group has its own laws which govern the food habits of the members.

- **The Ideology of Purity and Pollution:** The gradation of castes is based on the notion of ritual purity. The higher castes are believed to be purer and less polluted.

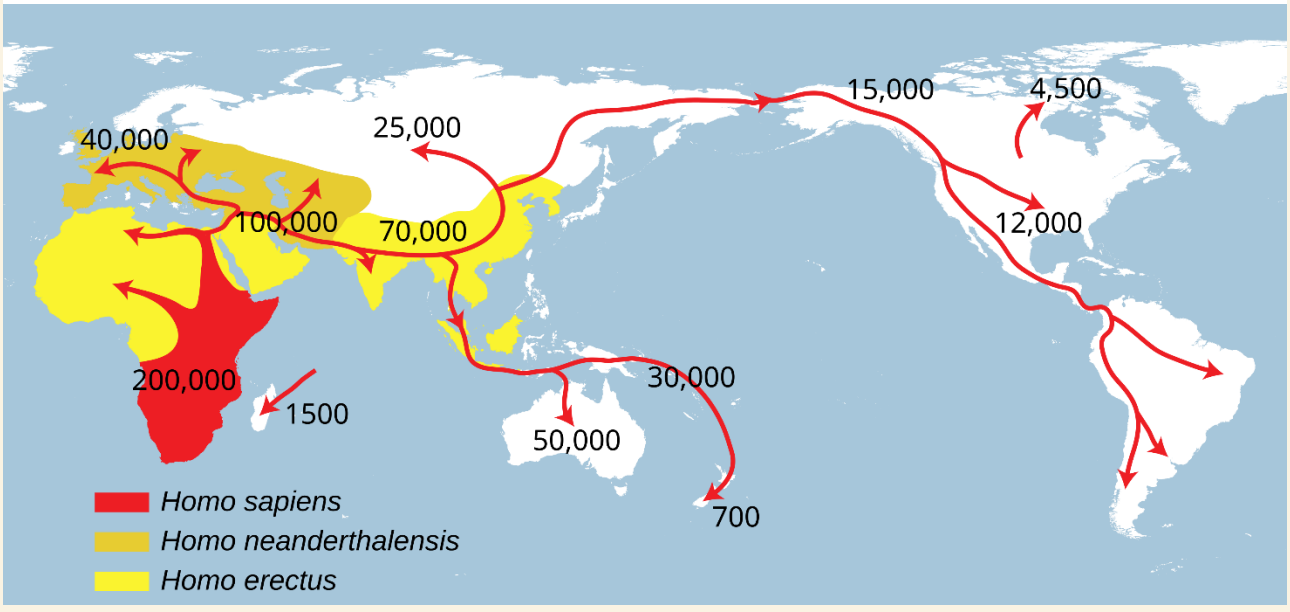
  Ritual purity is derived from the caste ideology that human beings are born into a high or a low caste in accordance with the doctrine of karma.

- **Restrictions on Occupations:** The different castes are usually associated with traditional occupations. Hindu religious texts determined the occupations of all 'varnas'. As regards the fixation of occupation, the caste system heavily draws upon the 'Varna' system. One's birth into a particular caste determines his occupation during his life time.

- **Marital Restrictions:** Caste endogamy is strictly enforced wherein the members of each caste marry only within their own caste. Inter-caste marriage is not only viewed with disfavor but it is also very much resented and discouraged.

10. What is the Route of Human Migration?

(Use this content in the topic of syllabus – Unit 9.3 Paper I)



- **Genetic studies** have provided **insights into human evolution and migration patterns**. By analyzing **mitochondrial DNA mutations**, scientists confirmed that Homo sapiens evolved in Africa over millennia before migrating globally.

- While scientists widely accept the **out-of-Africa theory**, they differ on the timing and routes of migration.

- **Two Theories of Dispersion:**
  - **Coastal Dispersion Theory:** Studies suggest **humans migrated along coasts**, benefiting from **warm climates, abundant food, and tropical conditions.**
    Research in 2005 using mitochondrial DNA of **260 Orang Asli individuals (Tribe of Malaysia)** indicated **rapid coastal migration around 65,000 years ago, reaching Australia** via the **Indian Ocean.**

  - A **2020 study on 2,700-year-old DNA in Japan** linked coastal migration to genetic affinities with **Taiwanese tribes. Andaman Islands' settlements** also correlate with coastal journeys.

  - **Challenges to the Theory:** Archeological **evidence in India contradicts** this model. **Inland Palaeolithic sites** dominate, with **no archeological traces along the Indian Ocean coastline** to support coastal dispersion.

- **Inland Dispersion Model:** The inland dispersal model suggests that **early humans migrated through interior terrestrial routes** rather than coastal ones.

  - **Saurashtra Peninsula Study:** Recent research analysed **Middle Palaeolithic tools** in the **Bhadar and Aji river basins of Gujarat.**
    Using relative dating methods, the **tools** were found to be **56,000–48,000 years old, indicating inland migration.** Middle Palaeolithic tools revealed advanced flaking techniques, contrasting with sharper blade tools of the **Late Palaeolithic.**

    Studies suggest Saurashtra was connected to **Kutch, Makran, and the Western Ghats during the Middle Palaeolithic**, indicating the region was farther from the coast.

    No evidence of marine resource dependence (e.g., fish, shellfish) was found, further supporting inland migration.
  - **Conclusion:** The **study offers new data but** emphasizes the need for precise dating. Evidence challenges purely coastal migration theories but r**equires careful interpretation due to submerged sites and undated regions.**

- The study also highlights broader dispersal in Saurashtra, covering coastal, hinterland, and inland areas, **suggesting a multifaceted migration pattern**.

11. Homo erectus

(Use this content in the topic of syllabus – Unit 1.6 Paper I)



- According to a study published in 'Nature', the last known settlement of **Homo erectus** was situated in Ngandong on the Indonesian island of Java.

- **Homo erectus (meaning upright man)** is an **extinct species of the human genus** (Homo), perhaps **an ancestor of modern humans (Homo sapiens).**

- As per the study, the human ancestors existed on the Indonesian island between 1,08,000 and 1,17,000 years ago.
- While fossil remains from H. erectus are found in Africa, like those of earlier **hominins,** they have also been identified at fossil sites **widely dispersed across Eurasia.**
- In particular, H. erectus had a **similar range of body sizes to modern humans,** and it is the first human ancestor to have similar limb and torso proportions to those seen in modern humans. This suggests it had adapted to walking on two feet in a more open, grassland environment, rather than swinging from tree branch to branch.

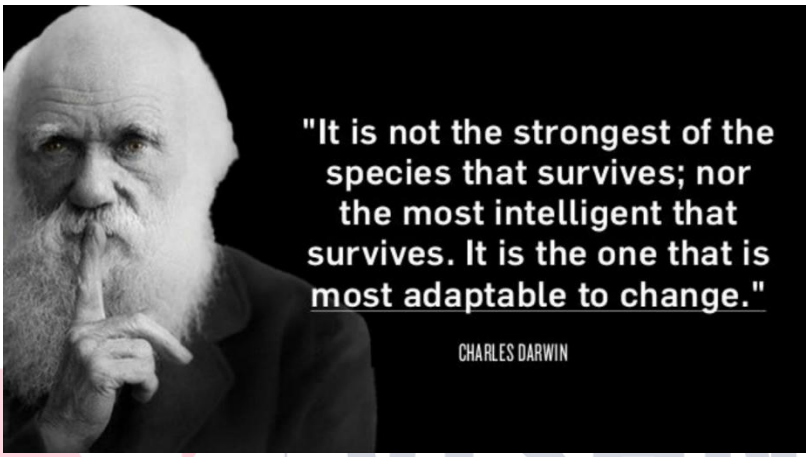
Hominin

- **Hominin** is any member of the zoological "tribe" Hominini (family Hominidae, order Primates), of which only one species exists today—Homo sapiens, or human beings.

- The term is used most often to refer to extinct members of the human lineage, some of which are now quite well known from fossil remains: Homo neanderthalensis (the Neanderthals), Homo erectus, Homo habilis, and various species of Australopithecus.

12. It is not the Strongest of the Species that Survive, nor the Most Intelligent, but the one Most Responsive to Change.

(Use this content in the topic of syllabus – Unit 1.4 Paper I)



- These ideas are commonly attributed to Charles Darwin, framed around the relationship between survival and adaptability. The essay examines how adaptability is far more important than strength or intelligence for survival, especially in the context of evolution, business, technology, and social systems.

- This oft-attributed paraphrase of Charles Darwin underscores a principle that resonates far beyond the natural sciences. In today's rapidly changing world, the importance of adaptability has only magnified, whether in biology, business, technology, or society at large.

- Strength and intelligence are valuable traits, but adaptability- the ability to respond well to change and improvise decisions, approaches, and behaviour is what ultimately determines survival and prosperity.

- Darwin's theory of natural selection, introduced in *On the Origin of Species (1859)*, posits that organisms better adapted to their environment are more likely to survive and reproduce. While strength and intelligence can offer competitive advantages, they are context-dependent.

- A species with extraordinary strength might dominate in a stable environment, but become obsolete when that environment shifts.

  For example, the woolly mammoth failed to adapt to climate change and human encroachment, leading to its extinction, while less celebrated creatures like

cockroaches and rats have survived millennia of environmental change due to their flexibility in habitat and diet.

- Similarly, human evolution is a testament to adaptability. Homo sapiens outlasted other hominin species like Neanderthals, because Homo sapiens' communal innovation enabled them to outlast physically stronger rivals. This principle of adaptability extends beyond biology to human-made systems.

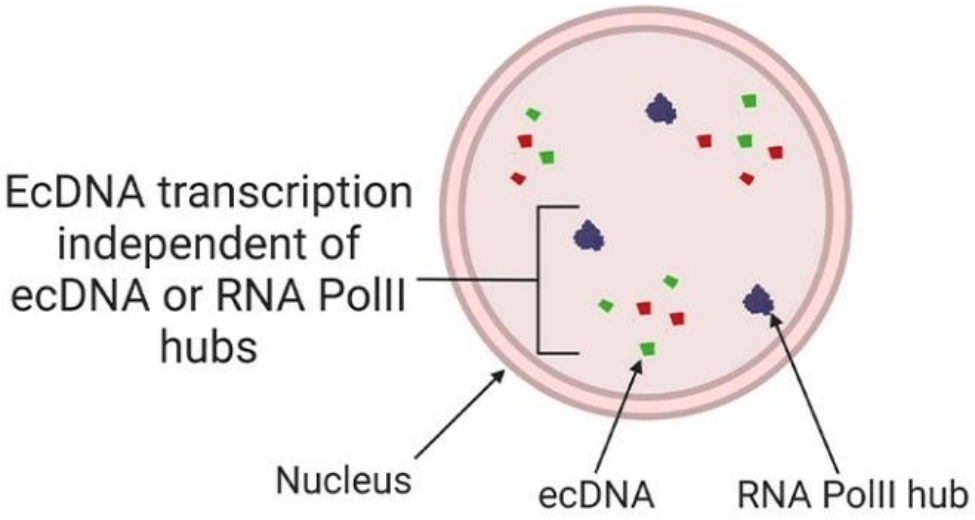
- The principle of adaptability is just as vital in the economic sphere. In the volatile world of business, companies that respond quickly to market shifts tend to survive and flourish, while those that fail to evolve often collapse.

  For example, Kodak's reluctance to abandon film led to bankruptcy, while Apple embraced reinvention.

- Sometimes attributes like strength or intelligence are more important for survival in certain contexts. For example, military power has historically enabled empires to expand and dominate.
  Similarly, highly intelligent individuals and organizations can sometimes predict and control environments rather than adapt to them. However, these advantages are limited by external change.

13. ecDNA Challenging Genetics Principles

(Use this content in the topic of syllabus – Unit 9.1 Paper I)



- Recently, a study published in ***Nature*** has revealed that **extrachromosomal DNA (ecDNA)**, a previously overlooked component of **genetic material**, plays a significant

role in **cancer progression and drug resistance**.

- These findings challenge the conventional understanding of genetics and open new avenues for understanding and treating cancer.

- **What is ecDNA and How It Challenges Conventional Genetic Principles?**

- **About: ecDNA** is a type of **DNA** that **exists outside of chromosomes** in the nucleus of cells. **DNA** stores **genetic information** crucial for an organism's growth, function, and reproduction. In eukaryotic cells, it is coiled into **chromosomes**.

- Humans have **23 pairs of chromosomes**, with genes on them encoding proteins and determining traits.

- **Formation: ecDNA** forms when **portions of DNA break away from chromosomes** due to processes like **chromothripsis** (chromosomes are broken and rearranged) or **errors** in DNA replication, creating **circular structures** that exist independently within the nucleus.

- **Significance:** ecDNA is commonly **found** in **cancer cells**, where it can contain **multiple copies of oncogenes**, contributing to **tumor growth, genetic diversity**, and **drug resistance.**

- **How ecDNA Contributes to Cancer and Drug Resistance?**

- ecDNA can carry **multiple copies of oncogenes**, leading to **increased expression of cancer-promoting genes** and **tumor growth.** It can take **regulatory elements (enhancers)** from other parts of the **genome**, causing **abnormal gene activity** that promotes cancer.

- The **non-Mendelian inheritance of ecDNA** creates **genetic diversity within tumors**, complicating targeted treatments.

- ecDNA can **increase the number of genes that help cancer cells pump out drugs** or **change their targets,** making it harder for chemotherapy to work. It allows **cancer cells to quickly develop new mutations**, helping the **tumor resist treatment** and adapt to drugs.

PAPER - 2

INDIAN & TRIBAL ANTHROPOLOGY

1. Adi Tribe & Nyishi Tribe

(Use this content in the topic of syllabus – Unit 7.1 Paper II)



- The Adi community also performed a similar ritual called the motor or pator system in the Adi (tribe) dialect.
- This is a customary self-restriction, where the locals lock down several villages by erecting barricades to prevent the entry of outsiders. No person is allowed to enter or leave the villages.
- They believe that this ritual lets shamans with legendary powers to locate wild herbs to combat an epidemic.

Note:

- The Adi tribe of Arunachal Pradesh is believed to have come from southern China in the 16th century.
- They are the Tibeto-Burman language speaking population.
- They reside in the far north inhabiting East Siang and Lower Dibang Valley districts of Arunachal Pradesh.
- The Adis are experts at making cane and bamboo items.
- Solung (harvesting festival where animal sacrifices and rituals are performed) and Aran (a hunting festival where all the male members of the family go for hunting) are two

major festivals of the Adi tribes.

Nyishi Tribe

- In districts such as Papum Pare and East Kameng, the dominant Nyishi community observed Arrue involving self-quarantine.

- Nyishi Tribes also called Bangni are the tribal people of eastern Bhutan and Arunachal Pradesh (formerly North East Frontier Agency).

- Nyishi is a Scheduled Tribe. It is the single largest tribe of Arunachal Pradesh.

- They speak the Tibeto-Burman language of the Sino-Tibetan family.

- The Nyishi support themselves with slash-and-burn agriculture and with hunting and fishing.

- They live together in a longhouse without partitions but with a separate fireplace for each conjugal family.

- Aside from a patrilineal household there is no formal social organization or village government.

- Their religion involves belief in spirits associated with nature.

2. Integrating tribal knowledge systems

(Use this content in the topic of syllabus – Unit 6.1 Paper II)



- Recently, President Droupadi Murmu while addressing the delegates of a National Workshop on 'Janjatiya Anusandhan – Asmita, Astitva evam Vikas' said that the Indian Knowledge System (IKS) that the National Education Policy is currently emphasizing needs to incorporate the knowledge of indigenous tribes.

- According to the 2011 Census, the Scheduled Tribes account for 104 million representing 8.6% of the country's population.

- The essential characteristics of these communities are: Primitive Traits; Geographical isolation; Distinct culture; Shy of contact with community at large; Economically backwards.

About Integrating tribal knowledge systems:

- Tribal knowledge systems represent inter-generational wisdom in band societies passed on to the present times through centuries of experience and learnings.

- Tribal societies have contemporary knowledge of nature due to continued closeness to forests, flora and fauna. Tribal methods are based on conservation of knowledge.

- For example, the awareness among tribals of Andaman & Nicobar about a wall of sea helped them against Tsunami in 2004.

Significance of Tribal Knowledge Systems:

- Tribal societies have contemporary knowledge of nature due to continued closeness to forests, flora and fauna.
  Mainstream societies have moved on to agricultural basis of society, and their cultural knowledge represents impressions of their tribal past, which no longer exists.

- While mainstream knowledge systems are based on rigorous refining and questioning of ideas through discussions and scientific verification, tribal methods are based on conservation of knowledge.

- Tribal knowledge systems are stored in songs and stories, while mainstream knowledge is preserved in books and recordings.

- Tribal knowledge systems promote integrated learning for the community. In mainstream society, knowledge and traditions have bifurcated, with traditions becoming a subject of study instead of mode of studying.

- Tribal knowledge systems are non-exclusionary and marked by equity. Mainstreams knowledge systems are mired in barriers like cost of education, patent protections, social exclusion etc.

3. Features of Dandami Madia Tribe

(Use this content in the topic of syllabus – Unit 6.1 Paper II)



- The Dandami Maria, also known as Bison Horn Maria or Khalpati Maria, are a tribal community belonging to the broader Gond (Koytorias) ethnic group.

- They are recognised for their distinctive ceremonial dance and headgear resembling bison horns, which has become a cultural marker of their identity.

Origin:

- The Dandami Maria trace their lineage to the ancient Gondwana region, once spread across central India. They identify as part of the Gond tribal tradition, one of the oldest indigenous groups of the Deccan plateau. Linguistically, they speak Dandami Maria, with many also using Gondi dialects, an oral language of Dravidian origin.

Habitat and Distribution:

- Predominantly inhabit the Bastar region of southern Chhattisgarh, especially in Darbha, Tokapal, Lohandiguda, Dantewada, and surrounding forested tracts.

- Their settlements are closely integrated with dense forests, shaping their subsistence patterns, rituals, and worldview. They practice agriculture, supplemented by hunting and fishing.

Key Cultural Characteristics:

- **Bison Horn Maria Dance:** Performed by both men and women during festivals, rituals, and communal gatherings.
  Men wear horn-shaped bamboo headgear decorated with bison or cattle horns, feathers, cowries, and cloth strips, along with bead necklaces and ankle bells.
  Women wear handwoven saris, heavy silver and brass jewellery, coin ornaments, and ceremonial crowns.

- **Social and Cultural Life:** The ghotul (youth dormitory) plays a vital role in socialisation, cultural transmission, and community cohesion.
  Distinct hairstyles, traditional ornaments, and ceremonial objects such as tobacco boxes and combs are culturally significant. They permit divorce and widow remarriage, reflecting flexible social norms.

- **Significance:** Represents a living tribal heritage that preserves Gond identity and pre-Aryan cultural traditions.

- Embodies a nature-centric worldview, celebrating hunting traditions, seasonal cycles, and forest deities like Budhadev and Danteshwari Mai.

4. How conversion affects reservation

(Use this content in the topic of syllabus – Unit 7.1 Paper II)



- Converting to Islam no longer carries a former Backward Class (BC), Most Backward Class (MBC) or Scheduled Caste (SC) status into Tamil Nadu's BC Muslim quota, because conversion alone does not make a person a member of a notified backward Muslim community.

- The Supreme Court, in The Secretary to Government v. Sameer Ahamed N. (2026), upheld the Madras High Court's invalidation of a 2024 Tamil Nadu Government Order that allowed such a transfer.

What did the Government Order do, and why did it fail?

- What it is: The Government Order (G.O.) let converts to Islam from BC, MBC, Denotified Communities (DNC) and SC classes obtain BC Muslim certificates for the State's 3.5% quota. It treated reservation like a ticket that travels with its holder.
- **Why the State issued it:** The State argued that a person who had enjoyed reservation should not lose every benefit by converting. The G.O. followed a letter from the Tamil Nadu Backward Classes Commission.

- **What went wrong:** The order grouped these converts without showing any common social trait linking them to the State's seven notified backward Muslim communities.

- **The takeaway:** Good intent cannot replace evidence, because reservation rests on a group's demonstrated disadvantage, not a former label.

Why are SC status and backward class status decided differently?

- SC route: Article 341 empowers the President to specify Scheduled Castes. Under Article 341(2), only Parliament may alter that list by law.
- Religion bar: Paragraph 3 of the Constitution (Scheduled Castes) Order, 1950 restricts SC status to Hindus, Sikhs and Buddhists, so conversion to Islam or Christianity ends it.
- Backward class route: Articles 15(4) and 16(4) permit special provisions for socially and educationally backward classes (SEBCs), including in public employment.
- State lists: Article 342A recognises the States' power to keep their own SEBC lists, as amended by the Constitution (One Hundred and Fifth Amendment) Act, 2021.
- Beyond Hindu caste names: Occupational groups, sects and communities among non-Hindus may qualify as backward classes if constitutional criteria are met.

5. Hill councils to be created in all eight districts of Ladakh

(Use this content in the topic of syllabus – Unit 6.3 Paper II)

- Elected hill councils in Ladakh, until now confined to Leh and Kargil, are to be set up in all eight districts of the Union Territory, with smaller councils in place of a uniform 26 seats each.
- The President has promulgated the Ladakh Autonomous Hill Development Councils (LAHDC) (Amendment) Regulation, 2026. The Kargil Democratic Alliance (KDA) has questioned changes made during ongoing talks on Statehood and the Sixth Schedule.

What is a hill council, and how was the law changed?

- **What it is:** An LAHDC is an elected district council under the Ladakh Autonomous Hill Development Councils Act, 1997, handling local development and land vested in it. It works much like a zila parishad.
- **Why it matters in Ladakh:** Ladakh became a Union Territory without a legislature in 2019, carved out of the Kashmir division of the erstwhile State of Jammu and Kashmir.

It then had only two hill councils.

How the change was made: The amendment is a Presidential regulation under Article 240, which lets the President make laws for certain Union Territories, with the force of an Act of Parliament.

Speed of approval: The Union Cabinet approved the amendments on October 14, and the President promulgated them on October 16. The Lieutenant Governor called it a "historic regulation".

The takeaway: Ladakh's local self-government can be redrawn by executive regulation within a week, without a vote in any elected House.

What does the amended regulation change?

- **Eight councils:** The regulation paves the way for an LAHDC in every district, including the newly created Sankoo district. The Union Territory administration created eight districts this year.
- **Seat rationalisation:** Each council will now have between seven and 24 constituencies, in place of the earlier uniform size.
- **Nominated members:** Four members are to be nominated from 'women' and 'unrepresented communities', for wider participation in local governance.
- **Kargil continuity:** LAHDC-Kargil, which held elections in 2023, remains in place.
- **Parallel negotiations:** The Leh Apex Body (LAB) and the KDA sit on a high-level committee the Centre constituted in 2023 to ensure constitutional safeguards for Ladakh.
- **The demands on the table:** Both bodies seek Statehood and inclusion of Ladakh in the Sixth Schedule, which would give its tribal areas constitutionally protected self-rule.

6. Citing 50% cap, Karnataka HC strikes down law to hike quota for SC/ST

(Use this content in the topic of syllabus – Unit 7.1 Paper II)



- Karnataka's higher quotas for Scheduled Castes (SCs) and Scheduled Tribes (STs), which took total reservation to 56%, have been declared unconstitutional for crossing the 50% ceiling.

- A division bench of the Karnataka High Court struck down Sections 3 and 4 of the Karnataka Scheduled Castes and Scheduled Tribes (Reservation of seats in educational institutions and of appointments or posts in the services under the State) Act, 2022.

What did the 2022 Act do, and why?

- **What it is:** The Act raised reservation for SCs and STs in State educational institutions and government posts. It took effect retrospectively from November 1, 2022.

- **Quota hike:** It raised two shares: the SC quota from 15% to 17%; the ST quota from 3% to 7%.

- **State's reasons:** Citing the Nagamohan Das Commission, the Adi Committee and the K. Ratna Prabha committee, the State argued SCs and STs were under-represented in its services.

- **Population argument:** The Ratna Prabha committee found over 90% of Karnataka's people are SC, ST or Other Backward Classes (OBC), and wanted reservation to match.
- **The takeaway:** Karnataka tried to tie reservation to population share, a basis the 50% rule does not accept.

Why did the court strike it down?

- **Section 3 struck down:** Insofar as it takes reservation beyond 50%, it violates Articles 14 and 15, the guarantees of equality before law and against discrimination.
- **Section 4 struck down:** It violates Articles 14 and 16, the second guaranteeing equal opportunity in public employment.
- **Indra Sawhney ceiling:** In Indra Sawhney v. Union of India (1992), a nine judge bench fixed this ceiling on reservation under Articles 15(4) and 16(4). The limit cannot be stretched or tied to population share, but allows an exception in "extraordinary situations".
- **No extraordinary situation:** The bench held that a subjective opinion that a class deserves a few points more is not extraordinary. Breaching the limit would undermine equality, a founding value of the Constitution.
- **Mandatory consultation:** Articles 338(9) and 338A(9) require governments to consult the National Commission for Scheduled Castes (NCSC) and the National Commission for Scheduled Tribes (NCST) on major policies affecting these groups.
- **Consultation too late:** The State wrote to the Commissions nearly three years after enacting the law.
- The bench held that consultation, to be meaningful, "must precede the decision".
- **No adverse effect exception:** It rejected the argument that consultation is needed only when a policy harms SCs or STs.

7. SEED Scheme for DNT Communities

(Use this content in the topic of syllabus – Unit 9.1 Paper II)



- Recently, the Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic Communities (DWBDNC) reported significant progress under the SEED Scheme during FY 2025–26, highlighting enhanced outreach and impact.

About SEED Scheme

- **About:** It is a central sector scheme launched in February 2022 by the Ministry of Social Justice & Empowerment for economic empowerment of DNT, NT and SNT communities.
  The scheme has an outlay of ₹200 crore over five years (from 2021–22) and is implemented by DWBDNC through an online portal for registration and monitoring.

- **Components:** It focuses on four major components: Free coaching for competitive exams and professional courses . Health insurance coverage through PMJAY. Livelihood support for income generation. Housing assistance through schemes like PMAY

About DNT, NT and SNT Communities

- **About:** The term De-notified Tribes refers to communities that were once classified under the Criminal Tribes Acts,1871 which were implemented by the British

Government.

- The Acts were abolished by the Government of India in 1952, leading to the De-Notification of these communities. A few of these communities which were listed as de-notified were also nomadic.

Nomadic and semi-nomadic communities are defined as those who move from one place to another rather than living in one place all the time.

  - While most DNTs are spread across the SC, ST and OBC categories, some DNTs are not covered in any of the SC, ST or OBC categories.

- **Distribution:** India has around 150 Denotified Tribes and ~500 Nomadic communities, accounting for nearly 10% of the population.

- **Challenges:** Various committees (e.g., Kaka Kalelkar Commission, Mandal Commission, NCRWC) have highlighted their historical marginalisation, stigma and need for targeted welfare measures.

8. Granting Scheduled Tribe (ST) Status in India

(Use this content in the topic of syllabus – Unit 9.1 Paper II)



- The Assam Cabinet approved a report by a Group of Ministers (GoM) recommending Scheduled Tribe (ST) status for six communities: Tai Ahom, Chutia, Moran, Motok, Koch-Rajbongshi, and the Tea Tribes (Adivasis).

Who are Scheduled Tribes (STs)?

- Scheduled Tribes (STs) are indigenous communities officially recognized by the

government for special protection and assistance due to their extreme social, educational, and economic backwardness.

The term 'Scheduled Tribes' first appeared in the Constitution. Article 366 (25) defines STs as communities deemed under Article 342 to be Scheduled Tribes for the purposes of the Constitution.

According to the 2011 Census, STs account for 104 million people, representing 8.6% of India's population, largely residing in forest and hilly regions.

Constitutional Framework for Identifying STs

- **Article 366(25):** Stating that Scheduled Tribes are "such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this Constitution."

- Article 342: Specific mechanism for notification. Clause (1): The President of India is empowered to specify the communities to be deemed as STs in a particular State or Union Territory.

- Clause (2): It grants the Parliament the exclusive power to include or exclude any community from the ST list through a legislative act.Once Parliament enacts a law, the Presidential order cannot be modified by a subsequent notification.

- **Procedure for Granting ST Status:**
- **State Government Recommendation:** The process must originate from the respective State or UT government with a detailed proposal, including an ethnographic report justifying the claim.

- **Ministry of Tribal Affairs Review:** The proposal is sent to the Union Ministry of Tribal Affairs, which acts as the nodal ministry and conducts an initial examination.

- **Scrutiny by Registrar General of India (RGI):** The proposal is forwarded to the Office of the RGI (under the Ministry of Home Affairs). The RGI's approval, based on the Lokur Committee criteria, is mandatory for the process to move forward.

- **Consultation with National Commission for Scheduled Tribes (NCST):** After RGI's concurrence, the proposal is sent to the NCST, a constitutional body under Article 338A, for its recommendation.
- **Union Cabinet Approval:** Once the NCST approves, the Ministry of Tribal Affairs prepares a cabinet note for the Union Cabinet's final decision.