This series provides compilation of daily CURRENT AFFAIRS of Anthropology. It is aimed at addressing the requirement of aspirants to add contemporary aspects of the subject to the answers.

It also helps in understanding the trends of anthropology across India and the world.

**NOTE:** Please attempt the questions given at the end of the document and can upload on the **telegram channel:** Sosin for Anthropology Q&A, for peer review.
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Note - For convenience, the respective reference links have been dropped at the end of every topic.
A. ARCHAEOLOGICAL ANTHROPOLOGY

1. Monumental Neolithic Tomb Discovered in Saudi Arabia
   - The remains of a dog and 11 people have been found in a monumental tomb near the region of Al-Ula, which is located in northwestern Saudi Arabia.
   - The tomb, dated to 4300 B.C., was discovered at a volcanic uplands site during a survey that employed satellite imagery and aerial photography. It is thought to have been in use for a period of at least 600 years.
   - The dog remains evidence for dog domestication in the Arabian Peninsula for about 1,000 years.
   - A leaf-shaped mother-of-pearl pendant was also recovered from the site.
   - Rock art in the region depicts dogs assisting with the hunting of ibex and other animals. A second tomb, dated to the fourth millennium B.C., was found some 80 miles away in arid badlands.
   - This tomb yielded a carnelian bead and would have also been a recognizable feature in the surrounding scenery.


2. Prehistoric Nigerians’ Diet
   Context: Prehistoric Nigerians Were Eating Honey, Molecular Archaeology Proves.
   Highlights:
   - Honey appreciation goes back to before humans even existed, it seems, but evidence of the habit in sub-Saharan Africa had been missing until now.
   - In the beginning was the wasp, predatory insects of whom many laid their eggs inside other insects.
   - At some point around 130 million years ago, a sphecid apparently shifted to feeding its young on nutritious pollen rather than nutritious fellow insects – and the result was bees.
   - Absent water, honey doesn’t spoil and has also served people as a preservative or even an ointment in antiquity.
   - The researchers from Goethe University in Frankfurt and the University of Bristol report honey consumption in Nigeria 3,500 years ago, among the people associated with the Nok culture, based on an analysis of the residue in clay pots.
   - Though evidence of beekeeping and honey consumption goes back further elsewhere in the Old World – and nearly 5,000 years in Egypt – the discovery of the pots and their residue is the earliest known evidence of honey utilization in sub-Saharan Africa.

Reference: https://www.haaretz.com/archaeology/.premium-prehistoric-nigerians-were-eating-honey-molecular-archaeology-proves-1.9722510
3. Radiometric Dating

- Radiometric dating is a method of establishing how old something is – perhaps a wooden artefact, a rock, or a fossil – based on the presence of a radioactive isotope within it.
- The basic logic behind radiometric dating is that if you compare the presence of a radioactive isotope within a sample to its known abundance on Earth, and its known half-life (its rate of decay), you can calculate the age of the sample.
- Radiometric dating is useful for finding the age of ancient things, because many radioactive materials decay at a slow rate.
- Radioactive atoms are unstable, meaning they decay into “daughter” products. The number of protons or neutrons in the atom changes, leading to a different isotope or element. The time it takes for one half of the atoms to have decayed is referred to as a “half-life”.
- We know the half-lives of the radioactive isotopes found on Earth, and so we can trace how long a radioactive material within an object has been decaying for, and therefore how long (within a range of error) it’s been since the object was formed.
- Some radioactive materials decay into daughter products that are also radioactive, and have their own half-life: the result is called a “decay-chain”, which eventually decays into a non-radioactive substance.

Reference: https://cosmosmagazine.com/earth/earth-sciences/what-is-radiometric-dating/

B. BIOLOGICAL ANTHROPOLOGY

1. Genes & Gut bacteria

- Researchers discovered that most bacteria in the gut microbiome are heritable after looking at more than 16,000 gut microbiome profiles collected over 14 years from a long-studied population of baboons in Kenya’s Amboseli National Park.
- The team also found that several of the microbiome traits heritable in baboons are also heritable in humans.
- In the study, published recently in Science, researchers discovered that most bacteria in the gut microbiome are heritable after looking at more than 16,000 gut microbiome profiles collected over 14 years from a long-studied population of baboons in Kenya's Amboseli National Park.
- However, this heritability changes over time, across seasons and with age. The team also found that several of the microbiome traits heritable in baboons are also heritable in humans.
- The environment plays a bigger role in shaping the microbiome than your genes, but what this study does is move us away from the idea that genes play very little role in the microbiome to the idea that genes play a pervasive, if small, role.
- The gut microbiome performs several jobs. In addition to helping with food digestion, it creates essential vitamins and assists with training the immune system. This new research is the first to show a definitive connection with heritability.
Previous studies on the gut microbiome in humans showed only 5 to 13 percent of microbes were heritable, but the research team hypothesized the low number resulted from a "snapshot" approach to studying the gut microbiome: All prior studies only measured microbiomes at one point in time.

In their study, the researchers used fecal samples from 585 wild Amboseli baboons, typically with more than 20 samples per animal.

Microbiome profiles from the samples showed variations in the baboons' diets between wet and dry seasons. Collected samples included detailed information about the host, including known descendants, data on environmental conditions, social behavior, demography and group-level diet at the time of collection.

The research team found that 97 percent of microbiome traits, including overall diversity and the abundance of individual microbes, were significantly heritable. However, the percentage of heritability appears much lower -- down to only 5 percent -- when samples are tested from only a single point in time, as is done in humans. This emphasizes the significance of studying samples from the same host over time.

The team did find evidence that environmental factors influence trait heritability in the gut microbiome. Microbiome heritability was typically 48 percent higher in the dry season than in the wet, which may be explained by the baboons' more diverse diet during the rainy season. Heritability also increased with age, according to the study.

But knowing that genes in the gut microbiome are heritable opens the door to identifying microbes in the future that are shaped by genetics.

In the future, therapies could be tailored for people based on the genetic makeup of their gut microbiome.

Reference:
https://www.sciencedaily.com/releases/2021/07/210708170331.htm

2. Rats & Humans

A decade after scientists discovered that lab rats will rescue a fellow rat in distress, but not a rat they consider an outsider, new research pinpoints the brain regions that drive rats to prioritize their nearest and dearest in times of crisis. It also suggests humans may share the same neural bias.

Researchers have found that the group identity of the distressed rat dramatically influences the neural response and decision to help, revealing the biological mechanism of ingroup bias.

With nativism and conflicts between religious, ethnic and racial groups on the rise globally, the results suggest that social integration, rather than segregation, may boost cooperation among humans.

The finding of a similar neural network involved in empathic helping in rats, as in humans, provides new evidence that caring for others is based on a shared neurobiological mechanism across mammals.

Using fiber photometry, immunohistochemistry, calcium imaging and other diagnostic tools, researchers found that all the rats they studied experienced empathy in response to another rat's signs of distress.
• However, to act on that empathy, the helper rat's neural reward circuitry had to be triggered, and that only occurred if the trapped rat was of the same type as the helper rat, or member of its ingroup.
• Humans and other mammals share virtually the same empathy and reward regions in the brain, implying that we may have similar biases toward our ingroup when it comes to helping others.
• Overall, the findings suggest that empathy alone doesn't predict helping behavior, and that's really a crucial point.

Reference:
https://www.sciencedaily.com/releases/2021/07/210713165303.htm

UPSC Previous year questions based on today’s concept:
1. New Physical Anthropology (S.N. - 1989)
2. Neolithic (S.N. - 2007)

DAILY PRACTICE QUESTION/S FOR MAINS 2021.
Pl do not forget to upload your answer sheet for a peer review on the telegram channel:
Sosin for Anthropology Q&A
1. Scope of epidemiological anthropology. (20 Marks)