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.
INDEX

A. BIOLOGICAL ANTHROPOLOGY

1. Molecular Study & Evolution ................................................................. 03
2. Biosynthesis of a New DNA Nucleobase .................................................. 04
3. Nutritional Disease ........................................................................ 04

B. ARCHAEOLOGICAL ANTHROPOLOGY

1. Maligaimedu Dig ........................................................................ 05
2. Copper Age - Metallurgy .................................................................. 06

UPSC ANTHROPOLOGY PREVIOUS YEAR QUESTIONS ....................................... 07
PRACTICE QUESTIONS FOR PEER REVIEW ..................................................... 07

Note - For convenience, the respective reference links have been dropped at the end of every topic.
A. BIOLOGICAL ANTHROPOLOGY

1. Molecular Study & Evolution

**Context:**
Massive molecular study uncovers clues to the evolution and diversification of essential plant family

**Highlights:**
- The most comprehensive study of the family tree for legumes, the plant family that includes beans, soybeans, peanuts, and many other economically important crop plants, reveals a history of whole-genome duplications.
- The study also helps to uncover the evolution of genes involved in nitrogen fixation—a key trait likely important in the evolutionary spread and diversification of legumes and vital for their use as "green manure" in agriculture.
- To reconstruct the family tree, researchers compared the DNA sequence of more than 1500 genes from 463 different legume species, including 391 newly sequenced species, that span the diversity of this large plant family.
- In addition to helping researchers understand the evolution and diversification of legumes, the new legume family tree helps to clarify the relationship between crop plants and their wild relatives.
- The two largest subfamilies account for over 17,000 legume species and include all of the species with the ability to fix nitrogen. Nitrogen is an important plant nutrient—most commercial fertilizers contain a mix of nitrogen, phosphorus and potassium—so the symbiotic relationship between some legumes and the microorganisms that allow them to assimilate nitrogen from the atmosphere using root nodules has spurred their success by allowing them to colonize areas with less fertile soil.
- The data supports the idea that nodulation and nitrogen fixation originated a single time early in the history of legumes and other related nitrogen-fixing plants and the whole-genome duplication event at the origin of legumes might have been crucial for the evolution of this process.
- In addition to this duplication event, the researchers were also able to see gene loss in plants that do not have the ability to nodulate, and evolutionary changes in genes that contributed to their role in nodulation.

**Reference:**
2. Biosynthesis of a New DNA Nucleobase

Context:
DNA is composed of nucleobases represented by the letters A, T, G and C. They form the basis of the genetic code and are present in all living beings. But in a bacteriophage, another base, represented by the letter Z, exists. This exception, the only one observed to date, has long remained a mystery. Scientists have now elucidated the biosynthesis pathway of this base.

Highlights:
- DNA, or deoxyribonucleic acid, is a molecule that serves as the medium for storing genetic information in all living organisms. It is a double helix characterized by alternating purine nucleobases (adenine and guanine) and pyrimidine nucleobases (cytidine and deoxycytidine).
- The bases of each DNA strand are located at the center of the helix and are bonded together, thereby linking the two DNA strands: adenine forms two hydrogen bonds with thymine (A-T), and guanine forms three hydrogen bonds with cytosine (G-C). This applies to all living beings, with one exception.
- Cyanophage S-2L is a bacteriophage, in other words a virus that infects bacteria. In this phage, adenine is completely replaced by another base, 2-aminoadenosine (represented by the letter Z).
- The new Z-T base pair and the discovery of the biosynthesis pathway show that new bases can be enzymatically incorporated into genetic material. This increases the number of coding bases in DNA, paving the way for the development of synthetic genetic biopolymers.

Reference:
https://www.sciencedaily.com/releases/2021/05/210511123700.htm

3. Nutritional Disease

Nutritional disease, any of the nutrient-related diseases and conditions that cause illness in humans. They may include deficiencies or excesses in the diet, obesity and eating disorders, and chronic diseases such as cardiovascular diseases, hypertension, cancer and diabetes.

- Nutritional diseases also include developmental abnormalities that can be prevented by diet, hereditary metabolic disorders that respond to dietary treatment, the interaction of foods and nutrients with drugs, food allergies and intolerances, and potential hazards in the food supply.
- Undernutrition is a condition in which there is insufficient food to meet energy needs; its main characteristics include weight loss, failure to thrive, and wasting of body fat and muscle.
- Low birth weight in infants, inadequate growth and development in children, diminished mental function, and increased susceptibility to disease are among the many consequences of chronic persistent hunger, which affects those living in poverty in both industrialized and developing countries.
• The largest number of chronically hungry people live in Asia, but the severity of hunger is greatest in sub-Saharan Africa.

• Malnutrition is the impaired function that results from a prolonged deficiency—or excess—of total energy or specific nutrients such as proteins, essential fatty acids, vitamins, or minerals.

  Reference:
  https://www.britannica.com/science/nutritional-disease

B. ARCHAEOLOGICAL ANTHROPOLOGY

1. Maligaimedu Dig

  Context:
  A major dig is taking place at Maligaimedu site to know more about the royal palace and capital of King Rajendra Chola I.

  Highlights:
  • The State Department of Archaeology has made some encouraging finds less than two months into the excavation at Maligaimedu near Gangaikondacholapuram, the capital of King Rajendra Chola I.
  • Thirteen coarse brick walls have been exposed so far at the site. A copper coin, some potsherds and iron pieces have been collected. Besides, a piece of Chinese celadon ware, belonging to the 10-11th century, has also been found.
  • The coin was supposed to be sent for chemical cleaning but going by its circular shape, it can be assumed that it is a Chola period one. The presence of celadon ware is indicative of the trade ties that had existed.
  • Gangaikondacholapuram was established by King Rajendra Chola I (1012-1044 CE) after his victorious expedition up to the Gangetic plains.
  • Excavations conducted earlier at Maligaimedu had revealed the remains of a royal palace.
  • The previous excavations were carried out at the site on a smaller scale on six occasions when portions of the Rajendra Chola’s palace were unearthed. Antiques and other items found in the excavations are on display at a museum at Gangaikondacholapuram.
  • The present excavation at the site began towards the end of February 2021 after conducting surveys using drone, thermal cameras and ground penetrating radars, with the help of various agencies. Excavation is now underway at five trenches at the site. The department is looking to take up exploration on a larger scale now to find out more about the palace, the city and its streets.

  Reference:
2. Copper Age - Metallurgy

Context:
The Chalcolithic - or the Copper Age - is one of the great eras of cultural development, fitting into the main framework of man’s crucial steps towards civilization. This period introduced copper into the metalworking industry, ushering the world into a wholly new phase, and paving the way towards the use of bronze. As such, it is a crucial period in the timeline of the history of mankind as the use of copper opened up new options and changed the course for the future.

Highlights:
- In many ways, the Copper Age is seen as a transitional period between the Stone and the Bronze Ages.
- Many scholars today place the Copper Age within the Neolithic period, while some classify it as part of the broader Stone Age as use of copper was not truly widespread everywhere.
- Of course, it needs to be understood that these periods lasted for thousands of years, and that it took a long time for certain cultures and civilizations to understand the nature of smelting ores to achieve metals.
- For a time, copper was all the craze in the world. In an era when stone tools reached their highest advance stage, such a big change and a new material was equal to absolute wonder.
- Copper - although unrefined and malleable - was tough, strong, and much more versatile than stone. Great for use in weapons and tools, copper gave a much needed edge to those tribes and cultural groups that mastered its creation process.
- The Copper Age did not begin at the same time all around the world. In many places this was an isolated process, appearing at roughly the same time in various corners of the globe.
- Nevertheless, a certain time frame can be agreed upon, in that the Copper Age lasted from roughly mid-5th millennium BC, all the way to the late 4th, early 3rd millennium BC. At that time, people discovered that by adding tin to copper, a stronger and more durable metal could be created; Bronze. From that point on, the Bronze Age begins.
- Little attention was devoted specifically to the Copper Age by the archeologists of the early 20th century and it was often bundled in with the broader Neolithic.
- However, the arrival of copper was a major event, providing immense cultural, economic, and socio-political developments in the ancient world. Expanding on the innovation that appeared in the late Stone Age, the Copper Age was the needed shift towards a different future.
- Some of the earliest evidence of copper smelting can be found in the so-called Fertile Crescent, in the near east, the region of the famed cradle of civilization, Mesopotamia. Also, the earliest traces of metallurgy on the whole can be found here, specifically at the Yarim Tepe site in modern day Iraq, which is dated to the Late Neolithic period.
Smelting of copper at this site can be dated around 6000 BC, while clear evidence of copper mining in Southern Israel is dated to between 7000 to 5000 BC.

With all these social and economic changes that came in the Copper Age, the people gradually became even more sedentary. The old nomadic hunter-gatherer lifestyles of the early Stone Age were phased out, and walled villages and cities became widespread. Copper was the way of the future, because he who held the monopoly over copper, held all the real power.

Reference:
https://www.ancient-origins.net/artifacts-ancient-technology/copper-age-0015150

UPSC Previous year questions based on today’s concept:
1. Describe the absolute dating methods in archaeology, highlighting the importance of each method. (15 Marks - 2014)
2. Epidemiology (S.N. - 1989)

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. Bring about the salient features of Copper Bronze age in India. 20 Marks