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. BIOLOGICAL ANTHROPOLOGY

1. Phage communities in human and primate intestines (Paper I, 1.5)

- The researchers first examined the evolutionary relationships of primate phages with each other.
- They found that for some groups of phages, their relationships mirror the evolutionary history of the primates that harbor them, an observation previously made for the bacterial component of the gut microbiome.
- This pattern, known scientifically as co-divergence, suggests that some phages maintained an association with particular primate strains over millions of years.
- This was possible even though in some cases these primates shared the same ecosystem with other primates with divergent phage communities, and in some cases even consumed them regularly.
- In a next step, the researchers investigated how flexible or permanent the connections between primates and their phage communities are.
- In principle, wild primates have maintained their phage composition over millions of years.
- The research team thus analyzed phages living in primates in zoos. They found that primates in captivity lose the phages they normally harbor in the wild.
- Overall, the study provides new insights into the evolutionary and ecological origins of phages associated with humans and opens interesting perspectives for further research.

Reference:

2. Gene Mutations effects (Paper I, 1.7, 9.1)
For Tomato Genes, One Plus One Doesn’t Always Make Two
Different combinations of mutations can affect the size of tomatoes unpredictably. In this image, the first column shows an unmutated (WT) tomato. The second and third columns show tomatoes with a single mutation in a region of the promoter (R1 or R4) for fruit size gene SlCV3. The individual mutations have little effect on fruit size. But the combination of these two mutations (R1 + R4) yields a much bigger fruit.

- Both people and tomatoes come in different shapes and sizes. That is because every individual has a unique set of genetic variations — mutations — that affect how genes act and function.
- Added together, millions of small genetic variations make it hard to predict how a particular mutation will impact any individual.

**Study Methodology:**
- CRISPR, a highly accurate and targeted gene-editing tool, was used on two tomato genes that control fruit size, SlCV3 and SIWUS.
- Over 60 tomato mutants were generated by removing little pieces of DNA in the promoter regions, areas near the genes that control their expression.
- In some cases, individual mutations increased the size of the tomatoes by a little bit.
- Some pairs of mutations did not change fruit size at all.
- A few synergistic combinations caused a dramatic, unpredicted increase in fruit size.

This range of interactions for any two mutations models the consequences of a single mutation occurring in different genetic backgrounds. The effect is comparable to those found in some human diseases, where some people might have certain pre-existing mutations that protect them from disease-causing mutations.

**Reference:**

3. **Down Syndrome Revisited (Paper I, 9.4.c)**

- Down syndrome (DS), a condition that affects one in every 700 hundred births, is usually a chance occurrence, often in families with no history of any problems.
- It is caused by an extra copy of Chromosome 21 in the genetic complement of the individual.
- The reasons as to why certain individuals are born with an extra copy of chromosome 21 when both parents are normal are not completely understood.
- Every human has genetic material called chromosomes in the nucleus of the cell: a total of 46 complex coils of DNA. Chromosomes are arranged in 23 identical pairs, one of each pair inherited at conception from the father and the mother.
- Each chromosome has multiple genes arranged like beads on a string.
- Genes contain instruction manuals that determine how the body will be built and function. In DS, the extra copy of chromosome 21 (containing 225 genes) causes the chromosome count to be 47 instead of 46.
- The extra set of genes cause developmental problems in the child.
- A distinctive face, learning difficulties and low muscle tone, congenital heart problems in around half and intestinal obstructions in a third, low thyroid function, delayed speaking and short adult height are amongst the commonest features.
- Despite the medical issues, most children with DS are sociable, loving, musically inclined and eager to learn.
Each year, March 21 is celebrated as World Down Syndrome Day to raise awareness and to promote medical research.

Reference:
https://www.indiatoday.in/information/story/all-you-need-to-know-about-down-syndrome-1796197-2021-04-29

4. Amber Fossil (Paper I, 1.6)

Context:
An amber fossil of a Cretaceous beetle has shed some light on the diet of one of the earliest pollinators of flowering plants.

Highlights:
- An amber fossil of a Cretaceous beetle was unearthed by a team of scientists, geologists and paleontologists. Their study of the fossil fecal matter, which was composed solely of pollen, shed some light on the diet of one of the earliest pollinators of flowering plants.
- Scientists named this fossil Pelretes vivificus. P. vivificus was a visitor of angiosperms – flowering plants. Scientists also found that P. vivificus also fed on their pollen.
- Cretaceous amber fossils provide an important source of evidence for understanding the biology of early angiosperms before they became the dominant group of plants on Earth. Amber is the fossil resin of ancient trees that often fortuitously trapped insects and other small organisms, preserving them with life-like fidelity.
- The fossil is associated with beetle coprolites – fossil fecal pellets – that provide a very unusual but important insight into the diet of short-winged flower beetles in the Cretaceous.
- The fossil faecal pellets are completely composed of pollen, the same type found in clusters surrounding the beetle and attached to its body.
- It is thus established that Pelretes visited angiosperms to feed on their pollen. This finding provides a direct link between early flowering plants in the Cretaceous and their insect visitors; it shows that these insect fossils were not just incidentally co-preserved with pollen, but that there was a genuine biological association between the two.

Reference:
B. TRIBAL AFFAIRS

1. San Carlos Apache tribe (Paper II, 6. Paper I, 2)
   - The San Carlos Apache Tribe has seen a dramatic turnaround over the past year when one-third of its on-reservation population was infected with the coronavirus.
   - The average number of positive COVID-19 cases is down to less than 1 percent a week, according to the San Carlos Apache Healthcare Corp.
   - Early education campaigns, an emergency declaration, and other safety precautions helped the community prepare even before it reported its first case, according to the Arizona Republic.
   - The tribe has more than 17,000 members, about 13,000 of whom live on the reservation.
   - The Tribal Emergency Response Commission that handles natural disasters and epidemics helped guide the Tribal Council with decisions related to the coronavirus.
   - When cases spiked, the tribe set up checkpoints at the reservation boundaries to keep visitors out, issued a stay-at-home order and imposed regulations on businesses operating in the community. A mask mandate remains.
   - The tribe also set up an alternative care site at the Apache Gold Casino Resort for people who needed to be isolated from their families or quarantined. The effort was recognized by the National Indian Health Board.

Reference:

UPSC Previous year questions based on today’s concept:

1. Genetic Engineering (S.N. - 2005)
2. Tribal land alienation (10 Marks - 1987)

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. Explain the process of fossilisation. (15 Marks)