

INDIAN HERITAGE AND CULTURE, HISTORY**Indus Valley Civilization's Independent Origin**

According to a study of DNA (Deoxyribo Nucleic Acid) from skeletal remains excavated from the Harappan cemetery at Rakhigarhi (the biggest IVC site located in Haryana) , the researchers found that the people in the Indus Valley Civilization (IVC) have an independent origin.

- The study negates the theory of the Harappans having Steppe pastoral or ancient Iranian farmer ancestry. As per the study, the DNA does not contain any genome from either the Steppe region or the ancient Iranian farmers.
- The finding also refuses the hypothesis about mass migration that happened during Harappan times from outside South Asia.
- According to the study, the genetic continuity from hunter-gatherer to modern times is clearly visible in the DNA results. The same hunter-gatherer communities developed into agricultural communities and formed the Harappan civilization.
- The researchers, therefore, concluded that farming in South Asia was not due to the movement of people from the farming cultures of the west to the Indian subcontinent, & people during IVC developed their own farming culture.

Indus Valley Civilization

- It is popularly known as Harappan Civilization.
- It flourished around 2,500 BC, in the western part of South Asia, in contemporary Pakistan and Western India.
- The Indus Valley was home to the largest of the four ancient urban civilizations of Egypt, Mesopotamia, India, and China.
- In the 1920s, the Archaeological Department of India carried out excavations in the Indus valley wherein the ruins of the two old cities, viz. Mohenjodaro and Harappa were unearthed.

INTERNATIONAL AFFAIRS- BILATERAL, GROUPINGS, ORGANISATIONS**India and South Korea Signs Logistics Pact**

India and South Korea have concluded a Military Logistics Agreement during the ongoing visit of Indian Defence Minister to Seoul.

- The two countries have also formulated a forward-looking road map to take bilateral defence industry cooperation to the next level.
- The roadmap has also listed other areas of cooperation like Land Systems, Aero Systems, Naval Systems, R&D cooperation and collaboration in Testing, Certification and Quality Assurance.
- The two Memoranda of Understanding (MOUs) were signed during the meeting which covers:
 - Defence Educational Exchanges,
 - To extend Logistical Support to each other's Navies.
- The above agreements would help:
 - Assured logistic support when India operates in the Indo-Pacific in the ports of South Korea.
 - To extend the reach, presence and sustainability of Indian Navy ships when deployed at great distances.
- The recent meeting has also been considered as an opportunity to combine India's 'Act East Policy' with the Republic of Korea's 'New Southern Policy'.

The sea route from Chennai to Vladivostok

India and Russia have signed a Memorandum of Intent to open a full fledged maritime route between Chennai to Vladivostok.

About Vladivostok:

- It is located on the Golden Horn Bay north of North Korea and a short distance from Russia's border with China.
- Vladivostok is the largest port on Russia's Pacific coast and home to the Pacific Fleet of the Russian Navy.
- At Vladivostok's massive port, shipping and commercial fishing are the main commercial activities.

Sea Route From Chennai To Vladivostok:

- The sea route from Vladivostok to Chennai covers a distance of approximately 5,600 nautical miles, or about 10,300 km.
- The sea route would pass through the southward on the Sea of Japan past the Korean peninsula.

- It then passes through Taiwan and the Philippines in the South China Sea.
- The route then reaches Singapore and through the Strait of Malacca, it emerges into the Bay of Bengal and then cut across through the Andaman and Nicobar archipelago to Chennai.

Significance of this route for India:

- It will ensure connectivity between the two major ports which will give impetus to the cooperation between India and the Russian Far East.
- India is building nuclear power plants with Russia's collaboration in Kudankulam on the sea coast in Tamil Nadu's Tirunelveli district. The opening of a sea route will help in the project.
- It will also increase India's presence in the Indo-Pacific and especially the South China Sea, which is a deeply contested part of the ocean that China claims it completely.
- The sea route will also enable transfer of cargo between Chennai and Vladivostok in 24 days in comparison to over 40 days currently taken to transport goods from East Russia to Europe.

India-China Strategic Economic Dialogue

The 6th India-China Strategic Economic Dialogue (SED) held in New Delhi from 7-9 September 2019.

About the Strategic Economic Dialogue:

- India-China Strategic Economic Dialogue is a bilateral dialogue platform between the NITI Aayog and the National Development and Reform Commission (NDRC) of China.
- The idea of having such a dialogue was first floated by the then Chinese Premier on his visit to India in 2010. As a result, the first India-China SED was held in 2011 in Beijing, China.
- The objective of the dialogue is to discuss challenges and explore possibilities of cooperation between sectors that are strategically important for the economic growth of the two countries.
- The 6th strategic dialogue will focus on collaboration between the two countries on areas of infrastructure, energy, high-tech, resource conservation, pharmaceuticals and policy coordination.

ENVIRONMENT- CONSERVATION, BIO-DIVERSITY AND ISSUES

Wetlands Restoration

Recently, the Government has identified 130 wetlands for priority restoration in the next five years and asked states to submit their respective integrated management plan.

- Each of these wetlands will be restored under a comprehensive scheme of the National Plan for Conservation of Aquatic Ecosystems (NPCA) for conservation and restoration of wetlands and lakes.
- This decision came on the sidelines of the ongoing UN conference on combating desertification (COP14) at Greater Noida.
- Apart from this, the government also proposed the concept of 'Wetland Health Card' to be introduced to monitor the entire ecosystem based on multiple parameters.
- In order to increase community engagement, the government declared to form 'Wetland Mitras' (the group of self-motivated individuals) for taking care of the identified wetlands across the country.

Importance of Wetlands

- The wetlands are actually land areas covered by water, either temporarily or permanently. Marsh, fen and peatland come under this category.
- They play a key role in the hydrological cycle and flood control, water supply and providing food, fibre and raw materials.
- They not only act as a source of water but also as ecosystems that prevent land degradation and desertification.
- Besides, such land areas also support lakhs of migratory birds from colder regions of the world in summers.
- Mangroves protect coastlines and filter pollutants, that's why wetland are referred to as kidneys of the ecosystem.

Wetlands in India

- In 2011, ISRO come out with a national wetlands atlas on the basis of satellite images, mapping over two lakh wetlands covering around 4.63% of the total geographic area of India.
- India's prominent wetlands include Chilika lake (Odisha), Wular lake (J&K), Renuka (Himachal Pradesh), Sambhar Lake (Rajasthan), Deepor Beel (Assam) etc.
- All these falls in the list of 26 wetlands of India under Ramsar Convention.
- Globally, there are 2,220 wetlands in the Ramsar list.

SCIENCE AND TECHNOLOGY- EVERYDAY SCIENCE, SPACE, NUCLEAR, DEFENCE ETC**ISRO Loses Connection with Vikram Lander**

India's attempt to create history by becoming the first nation to land close to the south pole of the Moon might have turned to despair after Chandrayaan 2's lander 'Vikram' lost communication

- The Chandrayaan-2 approached the Moon as normal until an error occurred about 2.1km (1.3 miles) from the surface, seconds before the ship was expected to land.
- The descent hoped to reduce its speed from 6048 km per hour to about 7 km per hour or lower to enable a soft landing.
- India would have been the fourth nation to make a soft landing on the Moon if Chandryaaan-2 mission had gone successfully.
- However, according to Indian Space Research Organisation (ISRO), only 5% of the mission has been lost (Vikram the lander and Pragyan the rover), as Chandrayaan 2 orbiter - is orbiting the moon successfully.
- The mission life of the Orbiter is one year.
- The Orbiter is meant to map the lunar terrain, examine the intensity of solar radiation and the presence of major elements such as Magnesium, Aluminium, Silicon, Calcium, Titanium, Iron, and Sodium etc.
- It will also conduct a quantitative estimation of water-ice in the polar regions of the Moon.

Avian Influenza

With effect from 3rd September 2019, India has been declared free from Avian Influenza (H5N1), which has also been notified to the World Organization for Animal Health (OIE).

- The declaration is a result of measures taken to control the recent outbreak of the disease at several places in Jharkhand, Bihar and Odisha and hence there is no presence of the Highly Pathogenic Avian Influenza (HPAI) Virus.
- The status will last only till another outbreak is reported. India was last declared free of the disease in 2017.
- This declaration is important not just from the poultry industry standpoint, but also because humans can contract the disease from animals. Though the pathogen is not capable of sustained human-to-human transmission.

About Avian Influenza

- Avian Influenza (AI) is a highly contagious viral disease affecting several species of food-producing birds (chickens, turkeys, quails, guinea fowl, etc.), as well as pet birds and wild birds.
- Occasionally mammals, including humans, may contract avian influenza.
- Influenza A viruses are classified into subtypes based on two surface proteins, Hemagglutinin (HA) and Neuraminidase (NA). For example, a virus that has an HA 7 protein and NA 9 protein is designated as subtype H7N9.
- Avian influenza virus subtypes include A(H5N1), A(H7N9), and A(H9N2).
- HPAI A(H5N1) virus occurs mainly in birds and is highly contagious among them.
- HPAI Asian H5N1 is especially deadly for poultry.
- Avian Influenza outbreaks can lead to devastating consequences for the country, particularly the poultry industry.
- Farmers might experience a high level of mortality in their flocks, with rates often around 50%.
- Prevention: Strict biosecurity measures and good hygiene are essential in protecting against disease outbreaks.
- Eradication: If the infection is detected in animals, a policy of culling infected and contact animals is normally used in an effort to rapidly contain, control and eradicate the disease.

Controlling Hepatitis B

Recently, Bangladesh, Bhutan, Nepal and Thailand became the first four countries in the World Health Organization's Southeast Asia region to have successfully controlled Hepatitis B.

- When the disease prevalence is reduced to less than 1% among children less than five years of age the Hepatitis B virus is said to be controlled.
- Hepatitis B infection at a young age turns chronic, causing over 1,00,000 premature deaths annually from liver cirrhosis or liver cancer.
- Despite the introduction of hepatitis B vaccine in the Universal Immunisation Programme in 2002 and scaling-up nationwide in 2011, about one million people in India become chronically infected with the virus every year.

- High prevalence among children aged less than five years has not dropped below 1% due to suboptimal coverage of birth dose in all infants within 24 hours of birth.
- Hepatitis B birth dose, given in the first 24 hours, helps to prevent vertical transmission from mother to child.
- Nearly, 70-90% newborns infected and 20-30% carriers are the result of Vertical Transmission of Hepatitis B, in India.
- Although the Health Ministry has approved the birth dose in 2008, its coverage remained low — 45% in 2015 and 60% in 2016 — according to a 2019 Health Ministry report.
- Reasons for the low coverage are :
 - The fear of wastage of vaccine when a 10-dose vial is used.
 - Unawareness of health-care workers about WHO recommendation that allows Hepatitis B Open-Vial Policy which states that vaccine can be kept for a maximum duration of 28 days for use in other children if the vaccine meets certain conditions.

ODISHA DEVELOPEMNT

SATARK

Odisha State Disaster Management Authority(OSDMA) has won the IT Excellence Award,2019 for its innovative mobile application called SATARK.

SATARK:

- SATARK stands for System for Assessing, Tracking and Alerting Disaster Risk Information based on Dynamic Risk Knowledge.
- SATARK is a web/smartphone based app for Early Warning Communication system(EWCS).
- The app has been developed by Odisha State Disaster Management Authority(OSDMA) in collaboration with the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia(RIMES), Thailand
- The app provides real time watch, alert and warning information for different hazards like heat wave, lightning, droughts, ocean state information and floods.
- The app utilises a machine learning algorithm to self-learn from each seasonal cycle of operation and improving on its own advisory generation process over season.

Regional Integrated Multi-Hazard Early Warning System(RIMES)

- RIMES is an international and intergovernmental institution owned and managed by its Member States for the generation and application of early warning information.
- It was established after the aftermath of the 2004 Indian Ocean tsunami on 30 April 2009 and was registered with the United Nations on 1 July 2009.
- RIMES operates from its regional early warning center located on the campus of the Asian Institute of Technology in Pathumthani, Thailand.
- It is owned and managed by a Council comprising of 48 Members and Collaborating States. Currently, the Government of India chairs the RIMES Council.

MISC

Swachhata Awards

The President of India presented the Swachhata Awards on 6th September 2019.

- Indian Railways was awarded the best ministry for implementation of Swachhata Action Plan (SAP) for 2018-19.
- SAP was formally launched on 1st April 2017 with the active participation of 72 Ministries and Departments. It is one of the flagship initiatives of the Prime Minister towards making Swachh Bharat everyone's business.
- It aims at engaging all wings of the Government in the Swachh Bharat Mission programme.
- Ministry of Drinking Water and Sanitation, being the nodal agency, has been engaged with the SAP implementing Ministries and Departments to provide actionable ideas, support implementation as needed and reporting and monitoring through the online portal www.swachhataactionplan.com.
- Best Swachh iconic Place award was conferred to the Chhatrapati Shivaji Maharaj Terminus (CST), Mumbai under the Swachh Bharat Mission initiative.

QUOTE OF THE DAY

If you ever stumble, make it a part of the dance.

DAILY ANSWER WRITING PRACTICE

Qns Examine how Indus Valley Civilization was distinct from the other civilizations that flourished during that period.

Answer :

The Indus Valley civilization flourished between 2600 and 1900 BCE, around the same time as civilizations in Egypt, China, and Mesopotamia. Presence of large rivers like the Indus, Nile, Huang He, Yangtze, Tigris, and the Euphrates created idle conditions for survival, agriculture, and domestication. These civilizations traded with each other and had cultural exchanges.

Though there are a number of similarities, but Indus Valley Civilisation was distinct from the other civilizations in the following ways:

- Geographical Extent: The Harappa civilization was 20 times greater than Egypt and 12 times larger than combining area of Egypt and Mesopotamia.
- Burnt bricks usage: Burnt bricks were used remarkably in construction of buildings in Harappa, while Egypt used dried bricks for the same purpose. Burnt bricks were also used by Mesopotamia but Harappan cities used them largely.
- Political organization: There is no clear idea about the political organization of the Indus Valley people. Unlike the Mesopotamians and the Egyptians, there is no evidence of any inscription describing their system of administration. The steatite statue of the priest king indicates that the Indus valley people were more concerned with commerce and they were ruled by a class of merchants.
- Temples: In contrast to Egyptian and Mesopotamian civilizations, the Indus Valley Civilization seems to have lacked any temples or large palaces that would give clear evidence of religious rites or specific deities.
- Societal norms: In Egypt, daughter inherits the throne or property but there is no evidence that suggests that Harappa's like Egyptians were matriarchal or not.
- Domestication of animals: Harappans in Gujarat domesticated elephant which wasn't in Mesopotamian cities.

Conclusion

Due to distinct geographies and limited interconnectedness, these civilizations differ in socio-cultural practices and even the level of advancement as well. Indus Valley Civilization was not only the earliest urban centre but an advanced society as well. The Indus script remains indecipherable without any comparable symbols, and is thought to have evolved independently of the writing in Mesopotamia and Ancient Egypt. Once deciphered, it can reveal the hidden secrets about the distinctness of Indus Valley Civilization.

Qns. What are wetlands and their functions? Discuss the threats being faced by them.

Ans Wetlands are defined as: "lands transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water". Water is the primary factor controlling the environment and the associated plant and animal life in wetlands.

Functions of Wetlands

- **Habitat:** Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects.
- **Cleansing agents:** Wetlands' microbes, plants and wildlife are part of global cycles for water, nitrogen and sulphur. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide. Reduces levels of contaminants in surface waters which recharge underlying or adjacent groundwater.
- **Flood control:** Wetlands function as natural barriers that trap and slowly release surface water, rain, snowmelt, and groundwater and flood waters. Wetland vegetation also slows the speed of flood waters lowering flood heights and reduces soil erosion.
- **Economic function:** Wetlands are highly productive ecosystems that provide the world with nearly two-thirds of its fish harvest.
- Wetlands are a vital source for food, raw materials, genetic resources for medicines, and hydropower. They play an important role in transport, tourism and the cultural and spiritual well-being of people.
- Wetlands also provide important benefits for industry. For example, they form nurseries for fish and other freshwater and marine life and are critical to commercial and recreational fishing industries.

Threats being faced by Wetlands

- **Urbanization:** Wetlands near urban centres are under increasing developmental pressure for residential, industrial and commercial facilities. Urban wetlands are essential for preserving public water supplies.
- **Agriculture:** Vast stretches of wetlands have been converted to paddy fields. Construction of a large number of reservoirs, canals and dams to provide for irrigation significantly altered the hydrology of the associated wetlands.
- **Pollution:** Wetlands act as natural water filters. However, they can only clean up the fertilizers and pesticides from agricultural runoff but not mercury from industrial sources and other types of pollution. There is growing concern about the effect of industrial pollution on drinking water supplies and the biological diversity of wetlands.
- **Climate Change:** Increased air temperature; shifts in precipitation; increased frequency of storms, droughts, and floods; increased atmospheric carbon dioxide concentration; and sea level rise could also affect wetlands.
- **Dredging and draining:** The removal of material from a wetland or river bed. Dredging of streams lowers the surrounding water table and dries up adjacent wetlands. Water is drained from wetlands by cutting ditches into the ground which collect and transport water out of the wetland. This lowers the water table and dries out the wetland.
- **Alien Species:** Wetlands are threatened by exotic introduced plant species. They clog waterways and compete with native vegetation.

Conclusion

Thus, wetlands are important ecosystem considering their importance there are international efforts in their conservation e.g. Ramsar convention aims at conservation and wise use of all wetlands through local and national actions and international cooperation.

DAILY CURRENT AFFAIR MCQS

1. With reference to recently conducted UN conference on combating desertification (COP14). Consider the following statements:

1. COP14 marked 25 years of the signing of UN conference on combating desertification and was hosted by India.
2. At COP14, The government of India also proposed to launch 'Wetland Health Card' & 'Wetland Mitras' as a conservation method for wetlands.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) **Both 1 and 2**
- (d) Neither 1 nor 2

2. Consider the following statements:

1. Chandryaan-2 consists of 3 components i.e. Orbiter the Vikram, Lander the Pragyan and Rover the Mitra.
2. The south pole of Moon was chosen as the site of soft landing as it contains clues to the fossil records of the early solar system.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) **2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

3. Consider the following statements:

1. Hepatitis B is a viral infection that attacks the liver and is the primary cause of liver cancer.

2. Unlike AIDS, It doesn't transmit from mother to child during birth and delivery, the virus may spread only through contact with blood or other body fluids.

Which of the statements given above is/are correct?

- (a) **1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

4. Recently India signed Military logistics agreement with which of the following country?

- (a) **South Korea**
- (b) Bangladesh
- (c) Vietnam
- (d) Singapore

5. Which of the following diseases are caused by viruses?

1. Measles
2. Rubella
3. Chikungunya
4. Tetanus

Select the correct answer using the code given below:

- (a) 1 and 3
- (b) 1 and 4
- (c) 2, 3 and 4
- (d) **1, 2 and 3**

6. India recently signed an MoU to open a full- fledged maritime route between Chennai and which of the following cities?

- (a) **Vladivostok, Russia's eastern port city**
- (b) Murmansk, northwest Russia
- (c) Vysotsk, northern Russia
- (d) Port of Haydarpasa, Turkey