

INDIAN HISTORY**Birth Anniversary of Guru Tegh Bahadur**

Sri Akhand Path was inaugurated at Gurdwara Guru Ke Mahal, the birthplace of the ninth Sikh guru, Guru Tegh Bahadur, to mark the 400th Prakash Purab (birth centenary) of the Guru.

Key Points**Guru Teg Bahadur (1621-1675):**

- Guru Tegh Bahadur was the ninth Sikh Guru, often venerated as the 'Protector of Humanity' (Srisht-di-Chadar) by the Sikhs.
- He was also an avid traveler and played a key role in setting up preaching centers throughout the Indian subcontinent.
- Known as a great teacher, Guru Tegh Bahadur was also an excellent warrior, thinker, and poet, who wrote detailed descriptions of the nature of God, mind, body, and physical attachments among other things spiritual.
- His writings are housed in the sacred text, 'Guru Granth Sahib,' in the form of 116 poetic hymns.
- During one such mission, he founded the town of Chak-Nanki in Punjab, which later became a part of Punjab's Anandpur Sahib.
- In the year 1675, Guru Tegh Bahadur was executed in Delhi under the orders of the Mughal Emperor Aurangzeb.

Sikhism:

- The word 'Sikh' in the Punjabi language means 'disciple'. Sikhs are the disciples of God who follow the writings and teachings of the Ten Sikh Gurus.
- Sikhs believe in one God (Ek Onkar). They believe they should remember God in everything they do. This is called simran.
- The Sikhs call their faith Gurmat (Punjabi: "the Way of the Guru"). According to Sikh tradition, Sikhism was established by Guru Nanak (1469–1539) and subsequently led by a succession of nine other Gurus.
- The development of Sikhism was influenced by the Bhakti movement and Vaishnava Hinduism.
- The Khalsa upholds the highest Sikh virtues of commitment, dedication and a social conscience.
- The Khalsa are men and women who have undergone the Sikh baptism ceremony and who strictly follow the Sikh Code of Conduct and Conventions.
- They wear the prescribed physical articles of the faith (5K's: Kesh (uncut hair), Kangha (a wooden comb), Kara (a iron bracelet), Kachera (cotton underpants) and Kirpan (an iron dagger)).
- Sikhism condemns blind rituals such as fasting, visiting places of pilgrimage, superstitions, worship of the dead, idol worship etc.
- It preaches that people of different races, religions, or sex are all equal in the eyes of God.

The Sikh Literature:

- The Adi Granth is believed by Sikhs to be the abode of the eternal Guru, and for that reason it is known to all Sikhs as the Guru Granth Sahib.
- The Dasam Granth is controversial in the Panth because of questions concerning its authorship and composition.

Shiromani Gurdwara Parbandhak Committee:

- Shiromani Gurdwara Parbandhak Committee, Amritsar, Punjab (India), an apex democratically elected body of Sikhs residing all over the world was established under a special Act of Parliament in 1925 to look after the religious affairs, cultural and historical monuments.

INTERNATIONAL RELATION**Border Tension Between Kyrgyzstan-Tajikistan**

The border between Kyrgyzstan and Tajikistan appeared to be holding after a day of intense fighting between the two countries that has killed about 40 people and wounded about 175.

Key Points**Background:**

- Both nations have claimed the area around the water supply facility in Kok-Tash, a dispute dating back decades to when they were both part of the Soviet Union.

- The current configuration of the Kyrgyz-Tajik border is the product of Soviet mapmakers drawing the dividing lines for Soviet republics, after the Union of Soviet Socialist Republics (USSR) collapsed in late 1991.
- The meandering boundary between Tajikistan and Kyrgyzstan is particularly tense as over a third of its 1,000-km length is disputed. Restrictions on access to land and water that communities regard as theirs have often led to deadly clashes in the past.

International Response:

- Russia and European Union (EU) welcomed the ceasefire deal and emphasised the need for a lasting and peaceful solution.

Importance of Central Asia for India:**Political:**

- India has a very wide array of interests in Central Asia covering security, energy, economic opportunities etc.
- Security, stability and prosperity of Central Asia is imperative for peace and economic development of India.
- Central Asia serves as a land bridge between Asia and Europe, making it geopolitically axial for India.
- Both India and Central Asian Republics (CARs) share many commonalities and perceptions on various regional and world issues and can play a crucial role in providing regional stability.

Economic:

- The region is rich in natural resources such as petroleum, natural gas, antimony, aluminum, gold, silver, coal and uranium which can be best utilized by Indian energy requirements.
- Central Asia has huge cultivable areas lying barren and without being put to any productive use, offering enormous opportunity for cultivation of pulses.
- CARs are fast getting linked to the global market for production, supplies of raw materials and services. They are also increasingly getting integrated into the East-West Trans-Eurasian transit economic corridors.

Indian Initiatives:

- India intends expansion of International North South Transport Corridor (INSTC) to Afghanistan and Uzbekistan.
- It will act as a vital gateway to access Eurasian markets and optimally operationalize its use, requiring a Central Asian state joining the project as a direct stakeholder.

India-Central Asia Dialogue:

- India has proposed setting up of 'India-Central Asia Development Group' to take forward development partnership between India & Central Asian countries.
- This group will help India to expand its footprints in the resource-rich region amid China's massive inroads and to fight terror effectively, including in Afghanistan.

India-Kyrgyzstan:

- **Political:** India has enjoyed strong bilateral ties with Kyrgyzstan since 1991. India was one of the first countries to establish diplomatic ties with Kyrgyzstan in 1992.
- **Culture & Economic:** Since 1992, the two countries have many agreements, including on Culture, Trade and Economic Cooperation, Civil Aviation, Investment Promotion and Protection, Avoidance of Double Taxation, Consular Convention etc.
- **Military:** In 2011, the joint 'Khanjar' series of exercises was started.
- **Indian Diaspora:** In Kyrgyzstan, about 9,000 Indian students are studying medicine in various medical institutions in the country. Also, there are many businessmen living in Kyrgyzstan who are involved in trade and several other services there.
- **Strategic:** The Kyrgyz leaderships have been largely supportive of India's stand on Kashmir.
- They also support India's bid for a permanent seat at the United Nations Security Council (UNSC).

India-Tajikistan

- **Political:** India and Tajikistan elevated bilateral relations to the level of a Strategic Partnership in 2012. Tajikistan supported India's membership to the Shanghai Cooperation Organization (SCO) and also permanent membership of an expanded UNSC. India supported Tajikistan's accession to the World Trade Organization in 2013.

- **Culture & Economic:** Trade between two sides is not to expectations despite efforts from both countries, due to more transit time and lack of readily accessible trade routes. Despite limitations, trade in food processing, mining, pharmaceuticals, textiles, skill development, science & technology, Information Technology, culture and tourism are continued between two countries.
- **Indian Diaspora:** The total number of Indians is estimated at about 1550, out of which more than 1250 are students.

Way Forward

- Geography has placed central asia at the nexus of crucial political and economic transformations for centuries. With the actualization of the Belt and Road Initiative, India's Connect Central Asia policy, and the EU's new Central Asia strategy, the 21st century could possibly be the most decisive period for the region. As India looks beyond its borders, Central Asia provides India with the right platform to leverage its political, economic and cultural connections to play a leading role in Eurasia.

SCIENCE AND TECHNOLOGY

Antimatter Counterpart Of The Electrons

The Raman Research Institute (RRI), Bengaluru, have resolved the mystery of the antimatter counterpart of the electrons called Positron and Positron Excess Phenomenon.

Key Point

Anti-Matter: Antimatter is the opposite of normal matter. More specifically, the sub-atomic particles of antimatter have properties opposite those of normal matter. Atoms are the basic units of matter and the defining structure of elements. Atoms are made up of three particles: Protons, Neutrons and Electrons.

Positron: Positron is a subatomic particle whose mass is the same as that of an electron and numerically equal but positively charged particle. The positron was discovered in 1932.

Positron Excess:

- The excess number of high energy particles of the antimatter counterpart of the electrons, called positrons have intrigued scientists for long.
- Over the years astronomers have observed positrons having an energy of more than 10 giga-electron volts, or 10 GeV.
- For an estimate, this is the energy of a positively charged electron accelerated across a 10,000,000,000 volt battery. Positrons with energy more than 300 GeV, however, are lower in comparison to what astronomers expect. This behaviour of positrons between 10 and 300 GeV is what astronomers call the 'positron excess'.

RRIs Study:

- The Milky Way consists of giant clouds of molecular hydrogen. They are the seats of the formation of new stars and can be as massive as 10 million times the Sun's mass. They can extend up to 600 light-years.
- Cosmic rays, produced in supernovae explosions propagate through these clouds before they reach the Earth. Cosmic rays interact with molecular hydrogen and can give rise to other cosmic rays.
- As they propagate through these clouds, they decay from their original forms and intermix, lose their energy by energising the clouds, and may also get re-energised.
- RRI studied all these astrophysical processes via a code it set up on the computer, using a publicly available code.

RRIs Proposal:

- Cosmic rays while propagating through the Milky Way galaxy interact with matter producing other cosmic rays, primarily electrons and positrons.
- All mechanisms via which cosmic rays interact with the molecular clouds to show that nearby molecular clouds can be a viable contributor to the positron excess phenomenon.

Cosmic Rays: Cosmic rays are atom fragments that rain down on the Earth from outside of the solar system. They blaze at the speed of light and have been blamed for electronics problems in satellites and other machinery. They were Discovered in 1912.

Light-Year: The light-year is a unit of length used to express astronomical distances and is equivalent to about 9.46 trillion kilometres. As defined by the International Astronomical Union, a light-year is the distance that light travels in vacuum in one Julian year.

SOCIAL ISSUE

International Labour Day

Every year 1st May is observed as May Day and is also known as International Labour Day worldwide.

Key Points**United States:**

- Labour Day has its origins in the labour union movement in the United States in the 19th Century.
- However, the USA and Canada celebrate Labour day on the first Monday of September, every year.
- Labour day was designated as a day in support of workers by trade unions and socialist groups in the memory of the Haymarket affair of 1886 in Chicago, USA.
- Haymarket Affair was a peaceful rally in support of workers which led to a violent clash with the police, leading to severe casualties. Those who died were hailed as “Haymarket Martyrs”.
- Workers’ rights violations, straining work hours, poor working conditions, low wages and child labour were the issues highlighted in the protest.

Europe: May Day was first celebrated on 1st May, 1890, after it was declared by the first International Congress of Socialist Parties in Europe in July 1889.

USSR: The Soviet Union and the Eastern bloc nations started celebrating the Labour day after the Russian Revolution, 1917. New ideologies such as Marxism and Socialism inspired many socialist and communist groups and they attracted peasants and workers and made them an integral part of national movement.

India: The first Labour’s Day was celebrated in 1923 in Chennai. This day was observed by the Labour Kisan Party of Hindustan. On this day, communist leader Malayapuram Singaravelu Chettiar asked the government that 1st May should be considered as a national holiday to symbolise the efforts and work of the workers. This day is also known as Kamgar Divas, Kamgar Din and Antarrashtriya Shramik Divas in India.

Constitutional Provisions Related to Labour

- Indian constitution provides numerous safeguards for the protection of labour rights. These safeguards are in the form of fundamental rights and the Directive principle of State policy.
- Article 14 commands the State to treat any person equally before the law.
- Article (19) (1) (c) grants citizens the right to form associations or unions.
- Article 21 promises protection of life and personal liberty.
- Article 23 prohibits forced labour.
- Article 24 prohibits employment of children below the age of fourteen years.
- Article 39(a) provides that the State shall secure to its citizens equal right to an adequate means of livelihood.
- Article 41 provides that within the limits of its economic capacity the State shall secure for the Right to work and education.
- Article 42 instructs the State to make provisions for securing just and humane conditions of work and for maternity relief.
- Article 43 orders the State to secure a living wage, decent conditions of work and social and cultural opportunities to all workers through legislation or economic organisation.
- Article 43A provides for the participation of workers in Management of Industries through legislation.

BIODIVERSITY & ENVIRONMENT**Delhi Air Pollution**

According to the SAFAR (System of Air Quality and Weather Forecasting and Research) system, Delhi’s air quality deteriorated from ‘moderate’ to ‘poor’ and ‘very poor’.

Key Points**Causes of Deteriorating Air Quality:**

- Delhi’s air typically worsens in October-November and improves by March-April. Current weather conditions are not unfavourable, unlike in winter. During winter, cool and calm weather traps and spikes daily pollution, particularly in north Indian cities located in the Indo Gangetic Plain.
- Hence, apart from local emissions, the deterioration in air quality is being attributed to an increase in fire counts, mostly due to burning of wheat crop stubble in northern India.
- The most crucial reasons for the alarming levels of air pollution in Delhi include:
 1. City’s landlocked geographical location.

2. Crop burning in neighbouring states (Punjab, Haryana and Rajasthan).
3. Vehicular emissions.
4. Industrial pollution.
5. Large-scale construction activities.

Concerns:

- Deteriorating air quality is worrying amid an increasing number of novel coronavirus disease (Covid-19) cases and deaths.
- In the World Air Quality report 2020, Delhi has been listed as the 10th most polluted city and the top polluted capital city in the world. However, it shows a boost in Delhi's air quality by approximately 15% from 2019 to 2020.
- In July 2020, Greenpeace (non-governmental organisation) found out that of the 28 global cities studied, Delhi bore the highest economic cost of air pollution with an estimated loss of 24,000 lives in the first half of 2020 despite a strict Covid-19 lockdown.
- Long-term exposure to outdoor and household (indoor) air pollution contributed to over 1.67 million annual deaths from stroke, heart attack, diabetes, lung cancer, chronic lung diseases, and neonatal diseases, in India in 2019 (State of Global Air 2020).

Major Measures Taken:

- Subsidy to farmers for buying Turbo Happy Seeder (THS) which is a machine mounted on a tractor that cuts and uproots the stubble, in order to reduce stubble burning.
- The introduction of BS-VI vehicles, push for electric vehicles (EVs), Odd-Even as an emergency measure and construction of the Eastern and Western Peripheral Expressways to reduce vehicular pollution.
- Implementation of the Graded Response Action Plan (GRAP). It is a set of curbs triggered in phases as the air quality deteriorates, which is typical of the October-November period.
- Development of the National Air Quality Index (AQI) for public information under the aegis of the Central Pollution Control Board (CPCB).

GOVERNANCE**Vande Bharat Mission**

The Vande Bharat Mission (VBM), which started repatriating Indians stranded abroad due to Covid-19 and the resultant lockdowns since May 2020, has become one of the largest evacuations of civilians by a country.

Key Points**Vande Bharat Mission (VBM):**

- It is the biggest civilian evacuation exercise to bring back Indian citizens stranded abroad amidst the coronavirus-induced travel restrictions.
- It has surpassed the large-scale airlift of 1,77,000 people in 1990 at the onset of the Gulf War.
- The mission is undergoing its 10th phase and has carried 32 lakh passengers approximately both inbound and outbound.
- National carrier Air India, alongwith its budget carrier Air India Express (AIE) carried out the bulk of air transfers under the mission. AIE used its fleet to lift agricultural products, mainly fruits and vegetables (the most sought-after items among the NRI Indians), to West Asian countries, Singapore and Kuala Lumpur.
- Besides, helping distressed rural farmers and the NRIs, the aim of the mission is to keep the supply chain intact.
- While overseas Indians from as many as 93 countries have availed repatriation through the VBM, the government has entered into special travel arrangements called 'air travel bubbles' with 18 different countries so far.
- Transport bubbles or air travel arrangements are temporary arrangements between two countries aimed at restarting commercial passenger services when regular international flights are suspended as a result of the pandemic.
- It allows carriers of both the countries to fly passengers either way without any restrictions.
- Reciprocal in nature, the bilateral pact aims to benefit airlines from both countries with faster repatriations.
- Due to a recent spurt in Covid-19 cases in the country and many countries of late, patronage has come down in the VBM flights.

Other Civilian Rescue Missions:

- **Evacuation from the Gulf (1990-91):** Until VBM, India's evacuation of civilians from Kuwait during the 1990-91 Gulf war had been the world's largest evacuation exercise of civilians by air. Around 1,77,000 Indians were caught in the war which left millions homeless and many dead. Air India, at that time, operated around 500 flights over two months.
- **Operation Raahat:** It was launched by the Indian Armed Forces, to evacuate 4,640 Indian citizens and 960 foreign nationals of 41 countries from Yemen during the 2015 Yemen Crisis. The evacuation took place both by sea and the air.
- **Operation Maitri:** The rescue and relief operation was carried out by the government of India and Indian armed forces in the aftermath of the April 2015 Nepal earthquake. The Indian Armed Forces evacuated around 5,188 persons, while nearly 785 foreign tourists were provided transit visas.
- **Operation Safe Homecoming:** It was launched by the Indian government on 26th February, 2011 to evacuate its citizens, fleeing from the Libyan Civil War. The air-sea operation was conducted by the Indian Navy and Air India. Around 15,000 civilians were rescued in the operation.
- **Operation Sukoon:** It was an operation carried out by the Indian Navy to evacuate Indian, Sri Lankan and Nepalese nationals, from the conflict zone during the 2006 Lebanon War. It was one of the largest evacuations conducted by the Indian Navy in which a total of 2,280 people were evacuated.

IMPORTANT FACTS FOR PRELIM

1. Drone Delivery Of Covid-19 Vaccines

Ministry of Civil Aviation (MoCA) and Directorate General of Civil Aviation (DGCA) have granted conditional exemption for drone deployment to the Government of Telangana for Experimental delivery of Covid-19 Vaccines.

Key Point

- The permission has been granted within Visual Line of Sight (VLOS) Range using drones.
- It is valid for a period of one year or until further orders.
- Earlier this month, similar permission was granted to the Indian Council of Medical Research (ICMR) for conducting feasibility study of Covid-19 vaccine delivery using drones in collaboration with IIT Kanpur.
- The grant of these permissions is intended to achieve the dual objectives of faster vaccine delivery & improved healthcare access by:
 - Ensuring primary healthcare delivery at the citizen's doorstep
 - Limiting human exposure to COVID congested or COVID prone areas through aerial delivery
 - Ensuring access to health care to the last mile, especially in remote areas
 - Possible integration into the middle mile of medical logistics for long range drones
 - Improving medical supply chain, especially with a third vaccine expected to be commissioned and millions of doses to be transported across India

2. Packaging Rules 2011

According to the Ministry of Consumer Affairs, Importers of medical devices, used particularly for providing oxygen support to Covid-19 patients, are now allowed to import these devices without prior mandatory declaration for the next three months, the said in a notification.

Key Point

- The importers can make all necessary declarations after the custom clearance, but before they are sold to consumers.
- The Legal Metrology (Packaged Commodities) Rules, 2011, make it mandatory to get the approvals prior to the import.
- Department of Consumer Affairs administers the Legal Metrology Act 2009.

3. Operation Samudra Setu-II

Indian Navy has launched Operation Samudra Setu-II to augment the ongoing national mission for meeting the Oxygen requirements.

Key POINT

- Mission deployed Indian Naval warships will undertake shipment of liquid Oxygen filled cryogenic containers and associated medical equipment in support of India's fight against COVID-19.

- Two ships INS Kolkata and INS Talwar have entered port of Manama, Bahrain for embarking and transporting 40MT of liquid oxygen to Mumbai.
- INS Jalashwa is enroute to Bangkok and INS Airavat to Singapore for similar missions.
- Last year Indian Navy had launched Operation Samudra Setu as part of the Vande Bharat Mission and repatriated approx 4,000 stranded and distressed Indian citizens from Maldives, Sri Lanka and Iran.

DAILY ANSWER WRITING PRACTICE

Q. Genetic engineering is a double-edged sword. The only solution is to accelerate the good side of these technologies. Discuss (250 words)

Ans:

- Genetic engineering is the process of using recombinant DNA (rDNA) technology to alter the genetic makeup of an organism. Traditionally, humans have manipulated genomes indirectly by controlling breeding and selecting offspring with desired traits.
- Genetic engineering involves the direct manipulation of one or more genes. Most often, a gene from another species is added to an organism's genome to give it a desired phenotype.
- Through genetic engineering, scientists are able to move desirable genes from one plant or animal to another or from a plant to an animal or vice versa. In essence, genetic engineering is a technology wherein a specific gene can be selected and implanted into the recipient organism.

Body

Advantages of Genetic Engineering

- Genetically Modified (GM) Crops: Genetic engineering made it possible to create crop varieties regarded as “more beneficial” terms of coming up with crops with the desired traits.
- Examples of genetically-engineered plants (Bt Cotton) with more desirable traits are drought-resistant plants, disease-resistant crops, plants that grow faster, and plants fortified with more nutrients.
- Treatment of Genetic Disorders and Other Diseases: Through genetic engineering, genetic disorders may also be fixed by replacing the faulty gene with a functional gene.
- Disease-carrying insects, such as mosquitoes, may be engineered into becoming sterile insects. This will help in curbing the spread of certain diseases, e.g. malaria and dengue fever.
- Therapeutic Cloning: It is a process whereby embryonic cells are cloned to obtain biological organs for transplantation.

Challenges of Genetic Engineering

- While genetic engineering is beneficial in many ways, it is also implicated in certain eventualities deemed as “unpleasant” or disadvantageous.
- **Irreversible Changes:** Nature is an extremely complex interrelated chain. Some scientists believe that introducing genetically-modified genes may have an irreversible effect with consequences yet unknown. GMO that can cause harmful genetic effects, and genes moving from one species to another that is not genetically engineered.
- **Health Issues Related with GMO Crops:** There are concerns over the inadvertent effects, such as the creation of food that can cause an allergic reaction.
- **Bioethics:** Genetic engineering borderlines on many moral and ethical issues. One of the major questions raised is if humans have the right to manipulate the laws and course of nature.

Way Forward

- As there have been no checks or balances, and it is too late to stop the global spread of these technologies. The only solution, now, is to accelerate the good side of these technologies and build defences.
- Representatives of academic and scientific bodies must look at participation and informed consent as the two most important tools. By shaping communication about genetic science around the core pillars of consent, transparency, accountability, sustainability and awareness, we can create a circle of trust.
- With Artificial Intelligence (AI) and genomic data, scientists will decipher the complex relationships between DNA and biological processes and find treatments for diseases.
- The scientific community can address people’s concerns, explain the benefits of genetic science and adopt suggestions from the public to make this area of science more accessible and acceptable.

DAILY QUIZ

- Q.1 The article 223 of the Indian Constitution, sometimes seen in news is related to:
- measures taken by the supreme court to do complete justice
 - appellate jurisdiction of supreme court in appeals from high courts
 - conferment on the supreme court of powers to issue certain writs
 - appointment of acting Chief Justice**
- Q.2 Consider the following statements regarding the Supply Chain Resilience Initiative (SCRI):
- It is a multi-stakeholder initiative formed by the United States, Japan, India and Australia.
 - It mainly focuses to build and finance quality infrastructure projects in the Indo-pacific region.
- Which of the given above statements is/are correct?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2**
- Q.3 Which one of the following has released report on “Trends in Global Military Expenditure “?
- World Economic Forum
 - Transparency International
 - Organisation for Economic Co-operation and Development
 - Stockholm International Peace Research Institute**
- Q.4 Consider the following statements about ‘Human Rights Watch’:
- It is an international non-governmental organization with its headquarters in the United Kingdom focused on human rights.
 - It was awarded the Nobel Peace Prize for its “defence of human dignity against torture”.
- Which of the given above statements is/are correct?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2**
- Q. 5 The countries bordering Israel are
- Lebanon
 - Egypt
 - Syria
 - Iraq
- Select the correct answer using the code below:
- 2, 3 and 4
 - 1, 2 and 3**
 - 1 and 4 only
 - 1, 2, 3 and 4