Art and Culture

Kesariya Buddha Stupa
Syllabus: GS 1, Architecture

In News
Recently, the world-famous Kesariya Buddha stupa in east Champaran district of Bihar has been waterlogged following floods after heavy rainfall in Gandak river’s catchment areas.

About Kesariya Buddha Stupa
- The stupa is located about 110 km from the State capital Patna.
- It has a circumference of almost 400 feet and stands at a height of about 104 feet.
- It is regarded as the largest Buddhist stupa in the world and has been drawing tourists from across several Buddhist countries.
- The locals call the stupa “devalaya” meaning “house of gods”.
- The first construction of the stupa is dated to the 3rd century BCE.
  - The original Kesariya stupa is believed to date back to the time of emperor Ashoka (circa 250 BCE) as the remains of an Ashokan pillar was discovered there.
- Literary References
  - Faxian (or Fah sien), a 5th century CE Chinese Buddhist monk, in his travels, mentioned a stupa which was built over Buddha’s alms bowl by Licchavis of Vaishali. It is now believed the stupa that was referred to was none other than Kesariya stupa.
  - Another important Buddhist monk, Hsuan-tsang, also mentioned the stupa in his travels, but gave no details.
- Exploration
  - Its exploration started in the early 19th century after its discovery led by Colonel Mackenzie in 1814.
  - Later, it was excavated by General Cunningham in 1861-62 and in 1998 an Archaeological Survey of India (ASI) team led by archaeologist K.K. Muhammad had excavated the site properly.
However, a larger part of the stupa is yet to be discovered and developed as it remains under thick vegetation.

**Significance**
- According to historians, Buddha himself is supposed to have stayed at this site, before he moved to Kushinagar.
- It is also believed that it was at this spot that he foretold his disciples that the time of his passing was near, and he would soon achieve nirvana.
- This is also the place where Buddha presented “Kalama Sutta”.
  - It is arguably his most revered discourse and revolves around the acceptance of his teachings only after observation, reflection and careful scrutiny.
- The ASI has declared it a protected monument of national importance.
- It is feared that the monument may suffer damage due to the floods. The tourist inflow too has been hit because of water around the structure.
- Restoration work along with better drainage facilities is needed in order to save the monument.

![Stupa Image](Image Courtesy: BT)

**Stupas in Buddhism**
- Construction of stupas and viharas as part of monastic establishments was an integral part of the Buddhist tradition.
  - Apart from stupas and viharas, stone pillars, rock-cut caves and monumental figure sculptures were also carved at several places.
  - However, there are also examples of a few Brahmanical gods in the sculptural representations.
It is important to note that the **stupas were constructed over the relics of the Buddha** at Rajagriha, Vaishali, Kapilavastu, Allakappa, Ramagrama, Vethadipa, Pava, Kushinagar and Pippalvina.

- The **textual tradition** also mentions construction of various other stupas on the relics of the Buddha at several **places including Avanti and Gandhara** which are **outside the Gangetic valley**.

- The **larger number** of stupa, vihara and chaitya belongs to Buddhism.
  - One of the best examples of the structure of a stupa in the **third century BCE** is at **Bairat in Rajasthan**. It is a very grand stupa having a **circular mound** with a **circumambulatory path**.
  - The **great stupa at Sanchi** was built with **bricks** during the time of **Ashoka** and later it was covered with stone and many new additions were made.

**Contributions and Patronage**
- From the second century BCE onwards, there is much **inscriptional evidence mentioning donors** and, at times, their profession.
  - The **pattern of patronage** has been a very **collective** one and there are very **few examples of royal patronage**.
  - Patrons range from lay devotees to gahapatis and kings. Donations by the guilds are also mentioned at several sites.
- However, there are very **few inscriptions mentioning the names of artisans** such as Kanha at Pitalkhora and his disciple Balaka at Kondane caves.
- The **method of working was collective in nature and at times only a specific portion of the monument is said to have been patronised** by a particular patron.

**Evolution**
- In the subsequent century, stupas were **elaborately built** with certain additions like the enclosing of the circumambulatory path with railings and sculptural decoration.
- There were numerous stupas constructed earlier but **expansions or new additions were made** in the second century BCE.
- The stupa consists of a **cylindrical drum** and a **circular anda** with a **harmika** and **chhatra** on the top which **remain consistent** throughout with minor variations and changes in shape and size.
- Apart from the circumambulatory path, **gateways** were also added.

**Depictions**
- With the elaborations in stupa architecture, there was **ample space for the architects and sculptors to plan elaborations** and to carve out images.
- During the **early phase of Buddhism**, **Buddha is depicted symbolically** through footprints, stupas, lotus throne, chakra, etc.
  - This indicates either simple worship or paying respect or at times depicts historisisation of life events.
Gradually, narrative became a part of the Buddhist tradition.

- Thus events from the life of the Buddha, the Jataka stories, were depicted on the railings and torans of the stupas.
- The main events associated with the Buddha’s life which were frequently depicted were events related to the birth, renunciation, enlightenment, dhammachakrapravartana (setting in motion of the wheel of the dharma) and mahaparinibbana (death).
Archaeological Survey of India

- It is the premier organization for the archaeological research and protection of the cultural heritage of the nation.
- It is an attached office under the Department of Culture, Ministry of Culture.
- Functions
  - Maintenance of ancient monuments and archaeological sites and remains of national importance.
  - Regulate all archaeological activities in the country as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- For the maintenance of ancient monuments and archaeological sites and remains of national importance the entire country is divided into 24 circles.

Source: TH

Indian Polity

Speaker and Deputy Speaker


In News
Maharashtra has been without a Speaker since February, while Lok Sabha and several state Assemblies are without a Deputy Speaker.

Background
- Recently, Maharashtra concluded its two-day Monsoon Session without electing a Speaker.
- The previous Speaker was elected to the post in 2019 following the Assembly elections.
- Since Patole’s resignation from office in February this year, the Deputy Speaker has been at the helm of proceedings in the Legislative Assembly.

Speaker
- Article 93 of Constitution of India:
  - The House of the People shall, as soon as may be, choose two members of the House to be respectively Speaker and Deputy Speaker thereof and, so often as the office of Speaker or Deputy Speaker becomes vacant, the House shall choose another member to be Speaker or Deputy Speaker, as the case may be.
- Election:
  - In the Lok Sabha, the lower House of the Indian Parliament, both Presiding Officers - the Speaker and the Deputy Speaker are elected from among its members by a simple majority of members present and voting in the House.
  - The election of the Speaker of the Lok Sabha is an important event in the life of the House.
- Qualification:
○ As such, **no specific qualifications** are prescribed for being elected the Speaker.
○ The Constitution only requires that the Speaker should be a **member of the House**.
○ But an understanding of the Constitution and the laws of the country and the rules of procedure and conventions of Parliament is considered a major asset for the holder of the Office of the Speaker.

- **Convention:**
  ○ One of the first acts of a newly constituted House is to elect the Speaker. Usually, a member belonging to the ruling party is elected the Speaker.
  ○ A healthy convention, however, has evolved over the years whereby the ruling party nominates its candidate after informal consultations with the Leaders of other Parties and Groups in the House.
  ○ This convention ensures that once elected, the Speaker enjoys the respect of all sections of the House.
  ○ There are also instances when members not belonging to the ruling party or coalition were elected to the Office of the Speaker.

- **Speaker pro-tem:**
  ○ The Speaker pro tem presides over the sitting in which the Speaker is elected, if it is a newly constituted House.
  ○ If the election falls later in the life of a Lok Sabha, the Deputy Speaker presides.

- **Term of Office:**
  ○ Speaker holds Office from the date of his/her election till immediately before the first meeting of the Lok Sabha after the dissolution of the one to which he/she was elected.
  ○ On the dissolution of the Lok Sabha, although the Speaker ceases to be a member of the House, he/she does not vacate his/her Office.

- **Re-election:**
  ○ He/She is eligible for re-election.

- **Resignation and Removal:**
  ○ The Speaker may, at any time, resign from Office by writing under his/her hand to the Deputy Speaker.
  ○ The Speaker can be removed from Office only on a resolution of the House passed by a majority of all the then members of the House.
  ○ Such a resolution has to satisfy some conditions like:
    ■ it should be specific with respect to the charges
    ■ it should not contain arguments, inferences, ironical expressions, imputations or defamatory statements, etc.
  ○ Not only these, discussions should be confined to charges referred to in the resolution. It is also mandatory to give a minimum of 14 days' notice of the intention to move the resolution.

- **Principal Spokesperson:**
  ○ The Speaker is the **principal spokesman of the House**.
  ○ He represents the collective voice of the House/Assembly and is its sole representative to the outside world.

- **Presiding Officer:**
  ○ The Speaker **presides over the House proceedings and joint sittings** of the two Houses of Parliament.

- **Final deciding authority for a bill to be Money Bill:**
○ It is the Speaker’s decision that determines whether a Bill is a Money Bill and therefore outside of the purview of the other House.

**Deputy Speaker**

- **Article 93 of Constitution of India:**
  ○ The House of the People shall, as soon as may be, choose two members of the House to be respectively Speaker and Deputy Speaker thereof and, so often as the office of Speaker or Deputy Speaker becomes vacant, the House shall choose another member to be Speaker or Deputy Speaker, as the case may be.

- **Election:**
  ○ In the Lok Sabha, the lower House of the Indian Parliament, both Presiding Officers - the Speaker and the Deputy Speaker are elected from among its members by a simple majority of members present and voting in the House.

- **Independent from Speaker:**
  ○ The Deputy Speaker is independent of the Speaker, not subordinate to him, as both are elected from among the members of the House.

- **Gaining importance:**
  ○ In addition to presiding over the House in the absence of the Speaker, the Deputy Speaker chaired committees both inside and outside of Parliament.

- **Ensures continuity of Speaker’s office:**
  ○ The Deputy Speaker ensures the continuity of the Speakers office by acting as the Speaker when the office becomes vacant:
    ■ by death, or
    ■ because of resignation

- **Presiding officer in specific case:**
  ○ When a resolution for removal of the Speaker is up for discussion, the Constitution specifies that the Deputy Speaker presides over the proceedings of the House.

- **From ruling party or opposition:**
  ○ In the case of the Deputy Speaker of Lok Sabha, the position has varied over the years.
  ○ Until the fourth Lok Sabha, the Congress held both the Speaker and Deputy Speakers positions. In the fifth Lok Sabha, whose term was extended due to the Emergency, an independent member, Shri G G Swell, was elected the Deputy Speaker.
  ○ The tradition for the post of the Deputy Speaker going to the Opposition party started during the term of Prime Minister Morarji Desai’s government.

- **Present Scenario:**
  ○ Information available on the websites of large state legislatures shows the position of Deputy Speaker vacant in Uttar Pradesh, Gujarat, Madhya Pradesh, Rajasthan and Jharkhand.
  ○ Haryana and Uttar Pradesh specify a time-frame for holding the election to the Speaker and Deputy Speaker’s offices.
    ■ In Haryana, the election of the Speaker has to take place as soon as possible after the election. And then the Deputy Speaker is to be elected within seven more days. The rules also specify that if a vacancy in these offices happens subsequently, then the election for these should occur within seven days of the legislature’s next session.
Uttar Pradesh has a 15-day limit for an election to the Speaker’s post if it falls vacant during the term of the Assembly. In the case of the Deputy Speaker, the date for the first election is to be decided by the Speaker, and 30 days is given for filling subsequent vacancies.

**Powers and functions of the Speaker**

- **Business of House and presiding over meetings**: The Speaker presides over the meetings in the House. In other words, the business in the House is conducted by the Speaker, ensuring discipline and decorum amongst its members.
  - The Speaker of the Lok Sabha presides over a joint sitting of the two Houses of Parliament.
- **Guards Rights and Privileges of Members**: He/she guards the rights and privileges of the members of the two Houses, deciding who should speak at what time, the questions to be asked, the order of proceedings to be followed, among others.
- **Voting and Casting Vote**: A Speaker uses his/her power to vote, in order to resolve a deadlock. That is, when the House initiates a voting procedure, he does not cast a vote in the first instance. However, when the two sides receive an equal number of votes, the Speaker's vote is used to resolve the deadlock, making his position as impartial as in the English system of democracy.
- **Adjourning the House/Meeting**: In the absence of a quorum in the House, it is the duty of the Speaker to adjourn the House or to suspend any meeting, until the quorum is met. The Speaker decides the agenda that must be discussed in a meeting of the Members of the Parliament.
- **Interpreting Rules and Procedures**: The Speaker is invested with the immense powers of interpreting the Rules of Procedure. That is, since he/she is the member of the House as well as the Presiding Officer at the same time, he ensures the discipline of the House.
  - **Punishment**: The Speaker ensures that MPs are punished for unruly behaviour.
  - **Anti Defection**: A Speaker can also disqualify a Member of Parliament from the House on grounds of defection.
  - It is in the power of a Speaker, to permit the various parliamentary procedures such as the motion of adjournment, the motion of no confidence, the motion of censure, among others.
- **Certificate on the Bill**: Once a Money Bill is transmitted from the Lower House to the Upper House, the Speaker is solely responsible for endorsing his or her certificate on the Bill. In other words, he/she is given the pivotal power to decide whether any Bill is a Money Bill. This decision is considered final, and all procedures henceforth, must be carried along accordingly.
- **Chairman of various Committees**: The Speaker has under his or her jurisdiction, a number of Parliamentary Committees such as the Rules Committee, the Business Advisory Committee and the General Purposes Committee. The Speaker nominates the various Chairmen of these Committees, as well as looks into the procedural hindrances of the workings of these Committees, if any.
- **Ex-officio President of Indian Parliamentary Group**: Besides heading the Lok Sabha, the Speaker is also the 'ex-officio' President of the Indian Parliamentary Group. He/she also acts in the capacity of Chairman of the Conference of Presiding Officers of Legislative Bodies in India.
• **Security surveillance over Parliament:** As part of the Speaker’s administrative role, he or she is the head of the Lok Sabha Secretariat, maintaining absolute security surveillance in the Parliament.

**Challenges**

• **No specific timeline for Speaker’s appointment:** Article 93 for Lok Sabha and Article 178 for state Assemblies state that these Houses “shall, as soon as may be”, choose two of its members to be Speaker and Deputy Speaker. The Constitution and the Assembly rules do not specify a time-frame for filling a vacancy in the post of Speaker.

• **Vague guidelines:** The Constitution provides that the office of the Speaker should never be empty. So, he continues in office until the beginning of the next House, except in the event of death or resignation.

• **Dependence on Political party for re-election:** With no security in the continuity of office, the Speaker is dependent on his or her political party for reelection. This makes the Speaker susceptible to pulls and pressures from her/his political party in the conduct of the proceedings of the Lok Sabha.

• **Tenure dependence:** As a minority view, Justice J.S. Verma in *Kihoto Hollohan vs Zachillhu And Others* observed: “The Speaker being an authority within the House and his tenure being dependent on the will of the majority therein, likelihood of suspicion of bias could not be ruled out.” Currently, the extent of the Speaker’s political commitment often depends on the personality and character of the person holding the office.

• **Maintaining Neutrality:** However desirable the proposition of neutrality may be, in the present circumstances, it would be unrealistic to expect a Speaker to completely abjure all party considerations while functioning as there are structural issues regarding the manner of appointment of the Speaker and her tenure in office.

**Conclusion**

• The Office of the Speaker in India is a living and dynamic institution which deals with the actual needs and problems of Parliament in the performance of its functions.

• The Speaker represents the House. He/She represents the dignity of the House, the freedom of the House and because the House represents the nation, in a particular way, the Speaker becomes a symbol of nation's freedom and liberty.

• The founding fathers of our Constitution had recognised the importance of this Office in our democratic set-up and it was this recognition that guided them in establishing this Office as one of the prominent and dignified ones in the scheme of governance of the country.

• Therefore that should be an honoured position, a free position and should be occupied always by persons of outstanding ability and impartiality.

**Sources:** IE
International Relations

India-Italy Joint Commission for Economic Cooperation

Syllabus: GS 2, India & Foreign Relations, Agreements Involving India &/or Affecting India’s Interests, Effect of Policies & Politics of Developed & Developing Countries on India’s Interests

In News
Recently, the 21st session of India-Italy Joint Commission for Economic Cooperation (JCEC) has been held.

Major Highlights
- Both sides held extensive discussions on bilateral trade, investment and economic cooperation.
  - Major areas discussed were food processing, textiles, leather, railways, start-ups and promotion of small and medium-sized enterprises (SMEs) which play a crucial role in economic growth and employment generation.
- The bilateral market access issues and non-tariff barriers were also discussed to facilitate trade and investment.
- The progress on the outcomes of the India-EU Leaders Summit in Porto, Portugal was also reviewed.
- Indian side also raised the issues of Mutual recognition of COWIN Vaccine Certificate and opening up of travel restrictions, longer duration of business visas and portability of social security benefits of Indians working in Italy.
- Other Initiatives
  - A Session focusing on Energy partnership was held virtually.
  - During the meeting, Indian and Italian companies made presentations focusing on the areas of green economy, clean technology and promotion of use of renewable energy for grid-based multi-energy systems.
  - Both nations reiterated the vision laid down under the Plan of Action adopted on 6th November 2020, to promote energy transition, leveraging technology and climate partnerships.
  - They underscored the pioneering role played by India and Italy at the multilateral fora as early adopters of ambitious clean energy targets.
  - Also, they invited the private and public sectors of both countries to explore synergies to further enhance mutual energy capacities.

India-Italy Relations
- Historical Context
  - India and Italy are ancient civilizations but young states (Italy having been reunified only in 1861).
The classical languages, Sanskrit and Latin both belong to the Indo-European language family.
- People of these two civilizations have known, interacted and traded with each other for over 2000 years.
  - Italian port cities were important trading posts on the spice route.
  - The Venetian merchant Marco Polo, during his travels to the east, also traveled to India in the 13th century and wrote about his experiences.
- Indian troops, serving with the British Indian Army, were active in Italy during World War II.
  - These included the Rajputana Rifles and Gurkha Rifles.
  - The 10th Indian Division took part in the East African Allied campaign against the Italians in Somaliland and Abyssinia.

**Political Relations**
- Diplomatic relations between India and Italy were established in 1947.
- Both countries enjoy a cordial relationship and there has been a regular exchange of visits at political and official levels between both countries.
  - In June 2011, India participated in the 150th anniversary celebrations of the Unification of the Republic of Italy in Rome.
- Both countries regularly hold an institutionalized Senior Officials Dialogue (Foreign Office Consultations).
- An India-Italy Parliamentary Friendship Association was established in the Inter-Parliamentary Union (IPU) Italy Chapter in 2004.

**Economic Relations**
- Trade between the two countries was valued at USD 5.7 billion between April-December 2020.
  - This is considerably lower than the 2019 figure, which stood at USD 11.3 billion and can be explained by the overall plunge in economic activity and barriers to trade caused by the Covid-19 pandemic.
- Italy is among India's top 5 trading partners in the European Union (EU) and the balance of trade has been in India’s favour since the early eighties.
  - The bilateral trade witnessed a strong growth till 2007, before the worldwide recession of 2008 led to a marked slowdown in Italian economy, which had an adverse impact on the bilateral trade.
- Main items of Indian exports to Italy are ready-made garments, leather, iron ore, motor vehicles, textiles, chemicals, gems & jewellery.
- Main items of import from Italy are general and special purpose machinery, machine tools, metallurgical products, and engineering items.
- Top sectors attracting Foreign Direct Inflows (FDI) inflows from Italy are automobile industry/transportation, food processing, metallurgical industry, textiles, electrical equipment, etc.
The Joint Commission for Economic Cooperation (JCEC) is an institutional mechanism chaired by the respective Commerce Ministers of both countries.

- Under the JEC, there are Joint Working Groups in the following areas: Infrastructure, Tourism, Railways, Food Processing, Renewable Energy, Information Technology and Agriculture.

- The potential of India and Italy as trade partners can be further explored if India and EU sign the Bilateral Trade and Investment Agreement (BTIA) which has been in negotiation.

**Defence**

- Blue Flag is a military aviation exercise held by the Israeli Air Force. In 2017, both India and Italy participated along with other nations.
- Both nations keep having frequent Maritime Partnership Exercises and also PASSEX. Indian Naval Ship (INS) Tabar recently participated in such an exercise.
- European Union Naval Force Somalia (EUNAVFOR) is the EU's counter-piracy mission off the coast of Somalia in which India and Italy participated along with France and Spain.

**Multilateral Engagement**

- Both countries have been engaged in the mariners case with the involvement of the International Tribunal for the Law of the Sea (ITLOS) and Permanent Court of Arbitration.
- Italy has been more actively involving itself in issues related to Indo-pacific and has been more vocal on the risks emanating from China’s strategic competitive initiatives.
  - Italy is seeking to join India and Japan in a trilateral partnership.

**Cultural Exchange**

- The Agreement for Cultural Cooperation was signed in 1976, which includes the Cultural Exchange Programme (CEP), entailing exchange of students in language programmes as well as other academic courses.
  - Universities and higher education institutions in Italy conduct courses in Indian art, history and languages and also teach Hindi and Sanskrit to Italian students.
  - An Indological Conference was organized by the Mission in collaboration with the academic institutions in the prestigious Museum of Oriental Art (MNAO) in March 2014.

**Scientific Cooperation**

- An Agreement on Science and Technology Cooperation has existed since 1978.
  - It envisages three yearly action plans under which a maximum of thirty joint research projects can be undertaken.
  - Some of the prime areas of joint research are electronics, biotechnology, design engineering automotive technologies, energy, etc.
○ An Agreement for Audiovisual Cooperation was signed between the two countries in 2005.

● Indian Community
  ○ The Indian community in Italy is the second largest community of Indians in Europe after the UK.
  ○ As first generation migrants, the majority of them are engaged in economic sectors such as agriculture, dairy farming, leather industry, construction works and in service industry.
  ○ A significant proportion of the Indian diaspora is concentrated in the northern Italy regions like Lombardia, Piemonte, Veneto and Emilia Romagna regions, Central Italy like Florence, Rome and Southern Italy like Campania, Puglia and Calabria.
World’s First Conjugate Vaccine for COVID-19

In News
Recently, Cuba has developed the world’s first conjugate vaccine for COVID-19.

About
- Cuba’s State-run corporation, BioFarma, mentioned that its indigenously produced Soberana 2 vaccine, when delivered with a booster shot of Soberana Plus, was 91.2% efficacious in phase-3 trials.
- The greater than 90% efficacy puts them in a select league; however, unlike the Pfizer-BioNTech and Moderna vaccines that had reported an efficacy of over 90%, both the Soberana and Abdala are three shot vaccines.

About Conjugate Vaccine
- Definition: A conjugate vaccine is a type of vaccine which combines a weak antigen with a strong antigen as a carrier so that the immune system has a stronger response to the weak antigen.
- Economical approaches used: Developed by most economical approaches. And Cuba has great knowhow about the technology for the vaccine’s development.
- Procedure and Working: From protein S - the antigen or part of the SARS-CoV2 virus that all COVID vaccines target because it induces the strongest immune response in humans -
  - Cuban vaccine candidates are based only on the part that is involved in contact with the cell’s receptor: the RBD (receptor binding domain) which is also the one that induces the greatest number of neutralising antibodies-
  - Common example of its use: The most common conjugate vaccines are those used for Haemophilus influenzae type b and the pneumococcal bacteria.
    - Cuba had already developed another vaccine with this principle. It is CheimiHib, ‘the first of its kind to be approved in Latin America and the second in the world’,
against haemophilus influenzae type b, coccobacilli responsible for diseases such as meningitis, pneumonia and epiglottitis.

- **Unique fact of Soberana:** A unique aspect of the Soberana vaccine is that it is by far the only one among coronavirus vaccine candidates that relies on the conjugate vaccine technology.

- **Subunit vaccine:** Both, Abdala and Soberana, are subunit vaccines, meaning that a part of the virus forms the antigen and is hitched on to another construct.
  - In Abdala the spike protein of the coronavirus is combined with a chemically manufactured adjuvant,
  - In Soberana 2, the spike protein is chemically linked to the tetanus toxoid, making it a conjugate vaccine.
  - The design and manufacturing allows the vaccine to be stored in regular refrigeration settings of 2–8 degree Celsius.

- **Generally used against Bacteria:** While there are no inherent disadvantages to taking a conjugate vaccine approach for coronavirus vaccines, they have generally been used against bacteria and not viruses.

- **For effective response:** For an effective vaccine response, not only antibodies but even killer T Cells, or those produced by the immune system and capable of destroying infected cells, must be produced.

- **Could prove to be most effective:** In a protein sub-unit vaccine, the spike protein may be able to elicit a strong antibody response but when combined with the tetanus toxoid, a very widely used childhood vaccine and therefore one which the immune system recognises, such a T-cell response could also be generated and conferring more effective protection.

**Conclusion**

- The conjugate vaccines have several advantages and their use could be promoted as they result into:
  - Improved immune and memory response,
  - Longer lasting protection,
  - The protection of infants and toddlers,
  - Their effect on bacterial carriage,
  - The creation of herd immunity.

- The conjugate vaccines have a superb safety record and have been associated with very few, serious adverse events following immunization (AEFIs) after more than 20 years of use.
- India should also show adequate interest in Cuban Vaccines to strengthen its vaccination drive.

**Sources:** TH
Health/Science & Technology

Acute Encephalitis Syndrome (JE-AES)


In News
Recently, the Prime Minister has emphasised providing clean tap water on priority to every household in Acute Encephalitis Syndrome (JE-AES) affected areas under Jal Jeevan Mission.

About
- The districts of Assam, Bihar, Tamil Nadu, Uttar Pradesh and West Bengal are on the high priority.
- Jal Jeevan Mission has significantly strengthened the preventive measures to reduce the spread of JE-AES by providing a clean tap water supply to economically poor households in these states.
  - Jal Jeevan Mission was launched in 2019, with an aim to provide drinking water connections to all rural households by 2024.
  - About 17 percent of the households in India had a functional tap water connection but the number was as low as 8 per cent in these aspirational districts.
- Specific funds for JE-AES affected priority districts are allocated on the basis of drinking water sources and the extent of water contamination.

Acute Encephalitis Syndrome (AES)
- Acute Encephalitis Syndrome (AES) including Japanese Encephalitis (JE) is a group of clinically similar neurologic manifestations caused by several different viruses, bacteria, fungus, parasites, spirochetes, chemicals/ toxins etc.
- Symptoms:
  - It is characterized as acute-onset of fever and a change in mental status (mental confusion, disorientation, delirium, or coma) and/or new onset of seizures in a person of any age at any time of the year.
- Affects:
  - The disease most commonly affects children and young adults and can lead to considerable morbidity and mortality.
- Treatment:
  - The first treatment plan for this viral infection is hydration and increasing the glucose levels in the body.
Status of Acute Encephalitis Syndrome (AES) in India

- JEV has its endemic zones running along the Gangetic plain including states of UP (east), Bihar, West Bengal and Assam, and parts of Tamil Nadu.
- India records fatality rate at 6% in AES, but the fatality rises to 25% amongst children.

Steps Taken

- Govt. of India, as part of the National Programme for Prevention & Control of JE/AES, follows a multi-pronged strategy encompassing
  - Preventive (sanitation, safe drinking water, improvement in nutrition etc.)
  - Case management (capacity building of medical and para-medical staff referral etc.).
  - Rehabilitation (physical and social rehabilitation of disabled children).
- 2 doses of JE vaccine have been approved to be included in UIP to be given one along with measles at the age of 9 months and the second with DPT booster at the age of 16-24 months w.e.f. April, 2013.

Way Forward

- Improve nutritional status of children at risk of JE/AES.
- Increase access to safe drinking water and proper sanitation facilities

Source: PIB
Recently, news reports have indicated higher rates of respiratory infections like influenza and the Respiratory Syncytial Virus (RSV) and it has been called the immunity debt.

- It has been brought on by Non-Pharmaceutical Interventions (NPIs), like social distancing, use of masks and hand hygiene, put in place to reduce the spread of the Covid-19.
- NPIs have been effective in breaking the chain of transmission of the virus.
- However, they have had unintended consequences for other directly transmitted, endemic diseases.
  - Influenza virus circulation was almost non-existent during the 2020 winter, a 99.9 per cent reduction compared with previous years.
  - Disruptions to the seasonal transmission patterns of these diseases may have consequences for the timing and severity of future outbreaks.
    - For example, a constant exposure to infectious agents boosts the immune response in the human body.
    - In the absence of that constant exposure, there is a possibility of unseasonal outbreaks being more severe than usual.
- RSV is commonly a winter infection but can be severe in very young infants.
  - Babies gain some protection from mothers, but the mother must have had some exposure to the virus.
  - If mothers are not exposed, it leaves the baby unprotected and if it is not very severe, children can be supported through the infection.
    - A monoclonal antibody is used to treat RSV.
- This is such an unusual phenomenon that has occurred. However, it might not have long-term epidemiological effects as things will go back to the regular seasonal impact in a while.
- There is a need for a reassessment of the role of NPIs and an analysis to identify the most effective components to prevent respiratory virus transmission and infection.
- This might yield new and sustainable interventions that can minimise and prevent seasonal and epidemic respiratory viral illnesses in the future.
Recently, the Prime Minister of India has greeted the people on the occasion of **Jagannath Rath Yatra**.

- The **nine-day festival** commemorates Lord Jagannath's **annual visit to the Gundicha Temple** via Mausi Maa Temple along with his siblings, Lord Balbhadra and Goddess Subhadra.
- It is one of the biggest festivals in India and is among the most famous **Vaishnavite rituals** in India and abroad.
- It is held at the **Jagannath Temple in Puri**, Odisha (one of the **Char Dhams**, other 3 being Badrinath, Dwarka and Rameshwaram).
- For the festival, special chariots are built every year from a **particular type of Neem tree wood** that is later dismantled and goes to the temple kitchen to be used as firewood to cook prasad.
- **Lord Jagannath’s Rath Nandighosha** has dominant colours like red and yellow. **Balbhadra’s chariot** is called **Taladhwaja** and **Subhadra’s chariot Devadalan Rath** is coloured in red and black.
- The main door of the Puri Jagannath Temple is kept **shut for one week prior to the festival**.
  - As the lord is believed to have caught a high fever after taking his annual bath. Once the period of rest is over, the Lord travels to his maternal aunt’s house in the Rath Yatra.
- The king dresses like a sweeper and sweeps the road with a golden broom and water and fortifies it with sandalwood paste to mark the start of the yatra. The process is called the ‘**Chera Pahara**’ ritual.
- It is believed that the Rath only moves after ‘**Dahuka boli**’ (poetic recitations) is sung.
Recently, the proposed Lemru Elephant Reserve in Chhattisgarh has become the subject of a controversy around its area.

- The proposal for the reserve, in Korba district, was passed *unanimously by the Assembly in 2005* and got *central approval in 2007*.
- Lemru was planned to prevent *human-animal conflict* in the region, with elephants moving into Chhattisgarh from Odisha and Jharkhand.
  - After Chhattisgarh was formed, the lack of a formal policy allowed elephants to use as a corridor a route in the north and central parts of the state.
  - As elephants started straying into inhabited areas, looking for food, human-animal conflict started.
- It is part of an *elephant corridor* that connects Lemru (Korba), Badalkhol (Jashpur), Tamorpingla (Surguja).
  - North Chhattisgarh alone is home to over 240 elephants, which are *relatively new to the state* as they started moving into undivided Madhya Pradesh in 1990.

**Controversy on Area**
- Its initially proposed area was 450 sq km which was increased to 1,143 sq km in 2011 and later to 1,995 sq km in 2019.
- However, it has been decided to reduce the area to the original size as the area is part of the *Hasdeo Aranya forests*, a diverse biozone, rich in coal deposits.
- The biggest challenge in increasing the reserve area was that *several coal mines would become unusable*.

**Other Protected Areas**
- *Badalkhol Tamorpingla*, the other proposed elephant reserve measuring 1048.30 sq km, was notified in September 2011, however no work has begun yet.
- *Total protected areas* cover 11,310.977 sq km, which is 8.36 per cent of the state's geographical area and 18.92 per cent of its total forest area.
India creates the world’s 1st Database of Genomic Variants of Oral Cancer 'dbGENVOC'.

About

- dbGENVOC is a browsable online database of GENomic Variants of Oral Cancer and is a free resource. The first release of dbGENVOC contains:
  - 24 million somatic and germline variants derived from whole-exome sequences of 100 Indian oral cancer patients and whole-genome sequences of 5 oral cancer patients from India.
  - A germline variant occurs in gametes and is passed directly from a parent to a child at the time of conception. Cancers caused by germline pathogenic variants are called inherited or hereditary.

- The repository will be updated annually with variation data from new oral cancer patients from different regions of India and Southeast Asia.

Cancer Burden in India

- According to the National Cancer Registry Programme Report 2020:
  - In 2020, tobacco-related cancers are estimated to contribute 3.7 lakhs (27.1%) of the total cancer burden.
  - Cancer cases in India are likely to increase to 15.6 lakhs by 2025 — a 12% increase from currently estimated cases.
  - 1 in 10 Indians will develop cancer during their lifetime and 1 in 15 will die of the disease.
  - Oral cancer is the most prevalent form of cancer among men in India, largely fuelled by tobacco-chewing.

India’s Action So Far

- India is committed to achieving a one-third reduction in cancer-related deaths by 2030 as part of the Sustainable Development Goals.
- Programmes such as Ayushman Bharat, Swasthya Bharat, Swachh Bharat Abhiyan, Poshan Abhiyaan and Pradhan Mantri Bhartiya Janaushadhi Pariyojana and initiatives such as FSSAI’s new labelling and display regulations and drug price control are in the right directions.
- Other initiatives: National Health Policy, the National Tobacco Control Programme, and the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke are also paving the way for progress.
India Industrial Land Bank (IILB)  
The IILB has planned about 4,000 industrial parks on 550,000 hectares of land and is expected to achieve **pan-Indian integration by December 2021.**  

### About  
- It is a **GIS-based portal**, a **one-stop repository** of all industrial infrastructure-related information like connectivity, infrastructure, natural resources & terrain, plot-level information on vacant plots, line of activity, and contact details.  
- It is currently integrated with **industry-based GIS systems from 17 states**, allowing details on the portal to be updated in real-time.  
- **Administered by:** Department of Industry and Internal Trade (DPIIT).  

### GIS (Geographic Information System)  
- A geographic information system (GIS) is a system that creates, manages, analyzes, and maps all types of data.  
- GIS connects data to a map, integrating location data (where things are) with all types of descriptive information (what things are like there).  
- **Uses:** It can be used for scientific investigations, resource management, asset management, environmental impact assessment, urban planning, cartography, criminology, history, sales, marketing, and logistics.  
- **Benefits:** Improved communication and efficiency as well as better management and decision making.
Light Combat Helicopters (LCH)

- HAL is set to deliver the first batch of 3 Light Combat Helicopters to the Indian Air Force (IAF).

**About**
- These are part of the 15 Limited Series Production (LSP) helicopters approved for the Army and the IAF.
- LCH has maximum possible commonality with Advanced Light Helicopters (ALH).
- **Designed and developed by:** Hindustan Aeronautics Limited (HAL)
- **Major features:**
  - The lightest attack helicopter in the world weighing 5.5 tonnes.
  - It can operate at heights of 12,000 feet.
  - Glass Cockpit and Armour protection
  - Night attack capability
  - Crash worthy landing gear for better survivability.
  - 20mm Gun, 70mm Rocket & Missiles
  - Air to Air Missiles (ATAM)
  - Air to Ground Missiles (ATGM)
- **Technical Parameters:**
  - Maximum takeoff weight: 5800 Kg
  - Maximum speed: 268 Kmph
  - Range: 550 Km

**Attack Helicopters in India**
- 90 Advanced Light Helicopters (ALH) - indigenously developed by the HAL.
- 75 Rudra, weaponized ALH - indigenously developed by the HAL.
- 160 older indigenous Cheetah and Chetak utility helicopters- urgent need for replacement.
- Older Mi-25 and Mi-35 Russian attack helicopters - in the process of being phased out.
- 22 newly inducted AH-64E Apache attack helicopters from the U.S.
The majority of the 30 mobile theatre groups in Assam are finding it difficult to stage a comeback after COVID-19 lockdowns.

**About**
- Bhramyoman refers to **travelling theatre** groups of Assam.
- The first Mobile Theatre play was staged on 2 October 1963, in Pathsala.
- It includes a collective of actors, singers, dancers, directors, action artists, makeup artists, workers, and the producer.
- It moves from place to place within the state – from villages to towns to cities.
- The mobile theatres have popularity across Assam’s rural landscape. Each theatre group involves 120-150 people.
- They get paid daily on the condition of no-work-no-pay.
- They have a unique model of revenue-sharing.
- **Importance:** It has a huge contribution to the social development of Assamese society.
- **Concerns:**
  - The people associated with the industry are virtually unemployed.
  - The situation does not look like it will improve soon.