

WHAT IS THE ANUBHUTI INCLUSIVE PARK?

Union Minister for Road Transport and Highways recently laid the foundation stone for the world's largest and unique Divyang Park - Anubhuti Inclusive Park.



About Anubhuti Inclusive Park:

- It is the world's first inclusive disabled park.
- Location: Nagpur, Maharashtra.
- The park will be developed by Nagpur Improvement Trust in an area of 90 thousand square feet.
- The park will have adapted facilities for all 21 types of disabilities, including a touch and smell garden, hydrotherapy unit, water therapy, and independent room for differently abled children, mothers, etc.

WHAT IS ANGEL TAX?

A senior government official recently said that the 'angel tax' provision in the Finance Bill will not impact startups in India.



Why in News?

- The Finance Bill 2023 has proposed some changes that will remove the exemption for foreign funds and non-resident investors, who will now have to pay Angel Tax on the difference between capital raised and the fair value of securities sold.

About Angel Tax:

- What is it? It is levied on the capital raised via the issue of shares by unlisted companies from an Indian investor if the share price of issued shares is seen in excess of the fair market value of the company.
- The excess funds raised at prices above fair value is treated as income, on which tax is levied.

- It derives its genesis from section 56(2) (viib) of the Income Tax Act, 1961.
- It was introduced in 2012 to prevent black money laundering through share sales.
- The Angel Tax is levied at a rate of 30.9% on net investments in excess of the fair market value.
- In 2019, the Government announced an exemption from the Angel Tax for startups on fulfillment of certain conditions. These are,
- The startup should be recognized by the Department for Promotion of Industry and Internal Trade (DPIIT) as an eligible startup.
- The aggregate amount of paid-up share capital and share premium of the Startup cannot be more than ₹25 crores. This amount does not include the money raised from Non-Resident Indians (NRIs), Venture Capital Firms, and specified companies.
- For angel investors, the amount of investment that exceeds the fair market value can be claimed for a 100% tax exemption. However, the investor must have a net worth of ₹2 crores or an income of more than ₹25 Lakh in the past 3 fiscal years.
- **Eligibility Criteria for Startup Recognition:**
- The Start-up should be incorporated as a private limited company or registered as a partnership firm or a limited liability partnership.
- Turnover should be less than INR 100 Crores in any of the previous fiscal years.
- An entity shall be considered a Start-up up to 10 years from the date of its incorporation.
- The Start-up should be working towards innovation/ improvement of existing products, services, and processes and should have the potential to generate employment/ create wealth.
- An entity formed by splitting up or reconstruction of an existing business shall not be considered a “Startup”.

WHAT IS THE I-ATS (INDIGENOUS-AUTOMATIC TRAIN SUPERVISION) SYSTEM?

The Delhi Metro Rail Corporation (DMRC) recently launched the first ever indigenously developed Train Control and Supervision System.



About the i-ATS system:

- It is India's first indigenously developed Train Control and Supervision System.
- It is a **computer-based** system that will **manage train operations** including basic functioning such as running and halting.
- The i-ATS has been **jointly developed by the DMRC and Bharat Electronics Limited (BEL) under** the Government of India's 'Make in India' and 'AatmaNirbhar Bharat' initiatives for Metro Rail Transit Systems.
- It will **reduce the metro's dependence on foreign vendors** for metro operations.
- The i-ATS technology has been **developed to be flexible enough to work with different signaling vendors' systems** with suitable changes.
- The development of i-ATS is a **huge step forward in CBTC (Communication Based Train Control) based signaling system** for the metro railways since the ATS is an **essential component of the CBTC signaling system**.
- With the launch of i-ATS, **India became the sixth country with its own ATS products** after France, Germany, Japan, Canada, and China.

WHAT IS ASTROSAT?

The Indian Space Research Organisation (ISRO) has recently made an Announcement of Opportunity (AO) to allow scientists and researchers to analyze data from the first dedicated Indian astronomy mission, AstroSat.



About AstroSat:

- It is India's first dedicated multi-wavelength space observatory.
- It is the first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, optical, and UV spectral bands simultaneously.

- AstroSat, with a **lift-off mass of 1515 kg**, was **launched by the Indian launch vehicle PSLV from Satish Dhawan Space Centre, Sriharikota, on September 28, 2015**, into a **650 km orbit** inclined at an angle of 6 degrees to the equator.
- The **spacecraft control center** at Mission Operations Complex (MOX) of **ISRO Telemetry, Tracking and Command Network (ISTRAC), Bengaluru, manages the satellite** during its entire mission life.
- The **minimum useful life** of the AstroSat mission **is around 5 years**.
- **Scientific Objectives:**
 - To **understand high energy processes in binary star systems** containing neutron stars and black holes.
 - **Estimate magnetic fields of neutron stars.**
 - **Study star birth regions and high energy processes** in star systems lying beyond our galaxy.
 - **Detect new briefly bright X-ray sources in the sky.**
 - Perform a limited **deep-field survey of the Universe in the Ultraviolet region.**

WHAT IS MULETHI?

Himachal Pradesh has recently begun the commercial cultivation of licorice (Mulethi) to become the first state in India to have organized cultivation of Mulethi.



About Mulethi:

- Mulethi, commonly known as licorice, is a **sweet-tasting perennial shrub**.
- **Scientific name: Glycyrrhiza glabra**
- The **roots have a sweet taste** due to the presence of **glycyrrhizin**, which is **50 times sweeter than sucrose**.
- It has been **traditionally known and used as medicine in Ayurveda** (known in Ayurveda as ‘**Yashtimadhu**’) for rejuvenation.

Uses:

- Herbal medicines use Mulethi for its **natural sweetness**.

- It is also **used in traditional medicines against chest and lung diseases.**
- It is **used to flavor candies, tobacco, and alcohol, artificial and natural sweeteners.**

Health Benefits:

- It has **anti-viral, anti-inflammatory, antioxidant, and anti-bacterial**
- It is known to **boost immunity** due to the **increase in the production of macrophage and lymphocytes.**
- Mulethi herb can **treat asthma, cough, cold, sore throat, and other respiratory ailments.**
- It **helps in weight loss** as it **contains flavonoids** that help to **reduce excessive fats** accumulated in the body.
- It helps **improve the digestive system, lessens the acidic level** in the intestines, and also **helps to detox our body.**

Distribution:

- The plant **thrives in a dry and sunny climate** and is cultivated in **subtropical and warm temperate regions.**
- Countries producing licorice include **Iran, Afghanistan, China, Pakistan, Iraq, Azerbaijan, Uzbekistan, Turkmenistan, and Turkey.**
- It is also cultivated in **Punjab and Sub Himalayan tracts in India.**

WHAT IS ULTRASAT?

NASA will launch Israel's first space telescope mission, the Ultraviolet Transient Astronomy Satellite (ULTRASAT) in early 2026.



About ULTRASAT:

- ULTRASAT is an ultraviolet observatory with a large field of view, that will investigate the secrets of short-duration events in the universe, such as **supernova explosions and mergers of neutron stars.**
- It is planned to launch into a **geostationary orbit** around Earth

- NASA will provide the launch opportunity, Flight Payload Adapter, and other launch-related responsibilities for ULTRASAT.

What is a geostationary orbit?

- Satellites in geostationary orbit (GEO) circle Earth above the equator from west to east following Earth's rotation – taking 23 hours 56 minutes and 4 seconds – by travelling at the same rate as Earth.
- This makes satellites in GEO appear to be **'stationary' over a fixed position.**
- To perfectly match Earth's rotation, the speed of GEO satellites should be about 3 km per second at an altitude of 35 786 km. This is much farther from Earth's surface compared to many satellites.
- This particular orbit is used for **meteorological and communications satellites.**
- The geostationary orbit is a **special case of the geosynchronous orbit**, which is any orbit with a period equal to Earth's rotation period.

SUPREME COURT BEGINS LIVE TRANSCRIPTION OF ITS HEARINGS USING ARTIFICIAL INTELLIGENCE

Why in News?

- For the first time, the Supreme Court has started using Artificial Intelligence (AI) and technology powered by Natural Language Processing to transcribe its proceedings.

About Artificial Intelligence:

- Artificial intelligence (AI) is the **ability of a computer or a robot controlled by a computer to do tasks that are usually done by humans because they require human intelligence and discernment.**
- The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

- AI algorithms are trained using large datasets so that they can identify patterns, make predictions and recommend actions, much like a human would, just faster and better.

Difference between AI and Regular Programming:

- Regular programs define all possible scenarios and only operate within those defined scenarios.
- **AI ‘trains’ a program for a specific task and allows it to explore and improve on its own.**
- A good AI programme ‘figures out’ what to do when met with unfamiliar situations.
- For example, Microsoft Word cannot improve on its own, but facial recognition software can get better at recognizing faces the longer it runs.

Steps taken by the Central Government to Promote AI:

- In 2020, the Central Government increased the outlay for Digital India to USD 477 million to boost AI, IoT, Big Data, Cybersecurity, Machine Learning and Robotics.
- In the 2019 Union Budget, Finance Minister Nirmala Sitharaman said the government would offer industry-relevant skill training for 10 million youth in India in technologies like AI, Big Data and robotics.
- Additionally, policy-level initiatives by the Ministry of Electronics and Information Technology (MeitY) and programmes around AI by NASSCOM and Defence Research & Development Organization (DRDO) have laid the groundwork for future disruption and created a roadmap for AI in India.
 - One such initiative was establishing the **Centre for Artificial Intelligence and Robotics (CAIR)**, a laboratory of the DRDO, in 2014.
 - This was established for research and development in AI, robotics, command and control, networking, information and communication security.
- **AI Portal –**
 - Jointly developed by MeitY and NASSCOM in June 2020, the Indian government launched a dedicated artificial intelligence (AI) portal, India AI is slated as a central hub for everything.
 - The portal will act as a one-stop-shop for all AI-related developments and initiatives in India.
- **Promoting AI in Schools –**

- The National Council of Educational Research and Training (NCERT) is preparing a new National Curriculum Framework for School Education in pursuance of the **National Education Policy 2020**.
 - This will also aim at introducing a basic course on AI at the secondary level.
-

CLIMATE-SMART FARMING: ICAR DEVELOPS WHEAT THAT CAN BEAT THE HEAT

Why in News?

- Recently, the Union Agriculture Ministry announced that it had set up a committee to monitor the situation arising from the **increase in temperatures and its impact** on the current wheat crop.
- This comes even as cereal inflation soared to a record 16.12% year-on-year in January - **driven primarily by wheat and atta** (flour), and wheat stocks in government godowns hitting the lowest (at 154.44 lakh tonnes) in six years recently.

News Summary

What is the Bigger Source of Uncertainty Regarding Wheat Crops in India?

- **Wheat crop due for harvesting:** Last year, a spike in March temperatures when the grains were accumulating starch and proteins, resulted in a **significant drop in output as well as government procurement**.
- **There are fears of a repeat this time**, with both maximum and minimum temperatures already 3-5 degrees Celsius above normal in many wheat-growing areas.
- **Climate change:** Leading to an early **onset of summer with hardly any spring break** has definitely made India's wheat crop vulnerable to terminal heat stress during the final grain formation and filling stages.

What is the Way Out to "Beat-the-Heat"?

- The Indian Council of Agricultural Research (ICAR) **suggested advancing the time of sowing**.

- Wheat is typically a 140-145 days crop planted mostly in **November** in Punjab, Haryana, Rajasthan and MP (post the harvesting of paddy, cotton and soyabean) and in UP and Bihar (after sugarcane and paddy).
- If sowing can be preponed and taken up from around October 20, the crop isn't exposed to terminal heat.

What are the Challenges of Advancing the Time of Sowing and Solution?

- The wheat sown before early-November is **prone to premature flowering**, affecting yields, as the crop does not get enough time for vegetative growth (of roots, stems and leaves).
- The ICAR's Indian Agricultural Research Institute (IARI) has developed three varieties (HDCSW-18, HD-3410, HD-3385) by incorporating genes that are responsible for the **mild vernalisation requirement** preventing premature flowering.
 - The mild vernalisation requirement is the need for a certain minimum period of low winter temperatures for initiation of flowering.
- IARI has registered HD-3385 with the **Protection of Plant Varieties and Farmers' Rights Authority** (PPVFRA) and has also licensed the variety to the DCM Shriram Ltd-owned Bioseed for undertaking multi-location trials and seed multiplication.

What are the Benefits of Developing New Varieties of Wheat by IARI?

- **Involving the private sector** in commercialisation of publicly-bred crop varieties will benefit farmers through faster adoption and diffusion of technology.
- It is also beneficial for ICAR because our institutes will **earn royalty on every kg of seed sold by the licensee**, which they can plough back into research.
- The country gains through **higher production from climate-smart varieties**.

About the IARI and ICAR:

- Commonly known as the Pusa Institute, IARI is India's national institute for **agricultural research, education and extension**.
 - The name Pusa Institute is derived from the fact that the institute **was founded in 1905 as the Agricultural Research Institute and College in Pusa, Bihar**, with the financial help of Henry Phipps, Jr., an American philanthropist.

- In 1911, it was renamed the Imperial Institute of Agricultural Research, and in 1919, it was renamed the Imperial Agricultural Research Institute.
 - **The proximity to indigo fields** in need of revival after the German synthesis of aniline in 1899 was one of the reasons for constructing it in Pusa, northern Bihar.
 - Following a major earthquake in Pusa, it was relocated to Delhi in 1936.
 - Post-independence, the institute was renamed the **Indian Agricultural Research Institute**.
 - The current institute in Delhi is financed and administered by the **Indian Council of Agricultural Research (ICAR)**.
 - The ICAR is an **autonomous** body responsible for coordinating agricultural education and research in India.
 - It reports to the **Department of Agricultural Research and Education**, Ministry of Agriculture and the Union Minister of Agriculture serves as its president.
 - It is the **largest network** of agricultural research and education institutes in the world.
 - The IARI was responsible for the research leading to the "Green Revolution in India" of the 1970s.
-