



Daily current affairs

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Atal Innovation Mission and SIRUS

Why in News?

To promote innovative cooperation between students of India and Russia, a Memorandum of Understanding was exchanged between India's Atal Innovation Mission (AIM) and the Russian Federation's SIRIUS Educational Foundation

What is the objective of AIM (Atal Innovation Mission)?

- Atal Innovation Mission (AIM) is NITI Aayog's flagship initiative to promote a culture of innovation and entrepreneurship in India.
- AIM has been established to create and promote an ecosystem of innovation and entrepreneurship in a holistic manner through various initiatives at school, university and industry levels.
- AIM also serves as a platform for promotion of world-class Innovation Hubs, Grand Challenges, Start-up businesses and other self-employment activities in India, leveraging state of the art, advanced and affordable emerging technologies.

The Atal Innovation Mission has thus **two core functions**:

1. Innovation promotion: to provide a platform where innovative ideas are generated.
2. Entrepreneurship promotion: Wherein innovators would be supported and mentored to become successful entrepreneurs at Incubation Centres.

What is objective SIRIUS Educational Foundation?

- It is an unitary, non-profit, non-standard educational organization.
- The activities of the Foundation are aimed to identify and support children and young people who have shown outstanding abilities.
- Providing assistance in obtaining general and additional education for such personalities, including education in the fields of arts, natural sciences, physical culture and sports.

What are the objectives of this MOU?

- To promote a spirit of collaborative innovation, young innovators of Atal Tinkering Labs and SIRIUS Educational Foundation came together at a four-day Indo-Russian ATL innovation boot-camp from October 1st to October 4th.

- The boot-camp was organized by Atal Tinkering Labs, Atal Innovation Mission, with support from Department of Design, IIT Delhi.
- The innovations developed across space technology, healthcare, smart mobility, clean energy and agricultural technology were showcased to Prime Minister of India and President of Russia on October 5th.

Need to Know: About the scheme and its significance.

MAVEN mission

Why in news?

MAVEN spacecraft, launched by NASA, has beamed back a selfie to mark its four years orbiting Mars and studying the upper atmosphere of the red planet.

What has been accomplished by the mission so far?

1. During its time at Mars, the spacecraft has acquired compelling evidence that the loss of atmosphere to space has been a major driver of climate change on Mars.
2. It also discovered two new types of Martian auroras -- diffuse aurora and proton aurora. Neither type has a direct connection to the local or global magnetic field or to magnetic cusps, as auroras do on Earth.
3. It also found that the majority of the carbon dioxide (CO₂) on the planet has been lost to space and that there is not enough left to terraform the planet by warming it, even if the CO₂ could be released and put back into the atmosphere.

MAVEN mission:

- The MAVEN mission was launched on November 18, 2013 aboard an Atlas V launch vehicle, and went into orbit around Mars on September 21, 2014.
- The mission was developed by NASA to study the Martian atmosphere while orbiting Mars. Mission goals include determining how the planet's atmosphere and water, presumed to have once been substantial, were lost over time.
- MAVEN completed its primary mission in November 2015 and has been operating in an extended mission since that time, continuing its investigation of Mars' upper atmosphere and exploring additional opportunities for science that the new relay orbit will bring.

Four primary scientific objectives:

- Determine the role that loss of volatiles to space from the Martian atmosphere has played through time.

- Determine the current state of the upper atmosphere, ionosphere, and interactions with the solar wind.
- Determine the current rates of escape of neutral gases and ions to space and the processes controlling them.
- Determine the ratios of stable isotopes in the Martian atmosphere.

Need to Know: MAVEN Mission- objectives, significance and why study MARS?

Scientists grow human oesophagus in lab

Why in news?

For the first time, scientists have successfully grown oesophageal organoids -- miniature, functional versions of the human food pipe -- entirely from pluripotent stem cells (PSCs). This paves the way for new ways to study and test drugs against gut disorders.

How this research could be helpful for the mankind?

The research may lead to personalised diagnostic methods and focused in part on developing regenerative tissue therapies to treat or cure GI disorders. In addition to being a new model to study birth defects like esophageal atresia, the organoids can be used to study diseases like eosinophilic esophagitis and Barrett's metaplasia, or to bioengineer genetically matched esophageal tissue for individual patients.

What is Oesophagus?

The oesophagus is a muscular tube that actively passes food from the mouth to the stomach. It is also called as ***gastro-intestinal tract (GI tract or gullet or food pipe)***.

Four layers in Oesophagus include:

1. The mucosa - the inner layer, which is moist to help food pass smoothly into the stomach.
2. The submucosa - this contains glands that produce mucus (phlegm), which keeps the oesophagus moist.
3. The muscularis - the muscle layer, which pushes food down to the stomach.
4. The adventitia - the outer layer, which attaches the oesophagus to nearby parts of the body.

Diseases associated with Oesophagus:

- The organ can be affected by congenital diseases, such as oesophageal atresia -- a narrowing or malformation of the oesophagus caused by genetic mutations.
- There are several diseases that can afflict people later in life. Some include oesophageal cancer, gastroesophageal reflux disease (GERD), or a rare ailment called achalasia -- a disease affecting the muscles of the lower oesophagus that prevents contraction of the organ and the passage of food.

What are Stem cells?

Stem cell is undifferentiated cell of multicellular organism which is capable of giving rise to indefinitely more cells (through mitosis) of same type and from which certain other kinds of cell may be formed by the cellular differentiation. There are two types of stem cells widely used

- **Embryonic stem cells:** They come from human embryos that are three to five days old. They are harvested during process called in-vitro fertilization. They are known as pluripotent stem cells. These cells can give rise to virtually any other type of cell in the body.
- **Induced pluripotent stem cells (iPSCs):** They can differentiate into all types of specialized cells in body. They can potentially produce new cells for any organ or tissue.

Need to Know- Oesophagus- its function and structure, Stem Cells and potential applications of stem cell therapy.

ATAL BIMIT VYAKTI KALYAN YOJNA

Why in News?

The ESI Corporation has approved 'ATAL BIMIT VYAKTI KALYAN YOJNA' for Insured Persons (IP) covered under the Employees' State Insurance Act, 1948.

About Atal BimitVyakti Kalyan Yojna:

- This scheme is a relief payable in cash directly to the Bank Account in case of unemployment and while they search for new engagement.
- The cash benefit given to the unemployed persons searching for new employment will be 25 percent of his average earning of 90 days.

Need to Know: About the scheme and its significance.

Jan DhanDarshak

Why in News?

Department of Financial Services (DFS), Ministry of Finance and National Informatics Centre (NIC) has jointly developed a mobile app called Jan DhanDarshak as a part of financial inclusion (FI) initiative.

About Jan DhanDarshak app:

the App will act as a guide for the common people in locating a financial service touch point at a given location in the country.

Significance of the app:

While locator apps are a common feature for many individual banks and financial service providers, in this era of inter-operable banking services, Jan DhanDarshak app will be in a unique position to provide a citizen centric platform for locating financial service touch points across all providers such as banks, post office, CSC, etc. These services could be availed as per the needs and convenience of the common people.

Other salient features of this App are as follows:

- Find nearby Financial touch points, based on current location (Branches/ATM/Post offices).
- Search by place name.
- Search by place name also available with Voice Interface.
- Phone number of bank branches available in app, with the facility of call button for integrated dialing.
- Users' feedback will go directly to the concerned bank for carrying out the necessary updation in data on financial touch points.

Need to Know- Highlights, significance and key features of the app.

Indian Ocean Naval Symposium

Why in News?

The annual meeting of IONS shall be held in India in the month of September.

About IONS:

- The Indian Ocean Naval Symposium, commonly known as IONS, are a series of biennial meetings among the littoral states of the Indian Ocean region.
- It provides a forum to increase maritime security cooperation, providing a forum for discussion of regional maritime issues and promote friendly relationships among the member nations.

Need to Know - IONS- objectives, composition and its relevance to day.

Astra

Why in News?

Astra, the indigenously developed Beyond Visual Range Air-to-Air Missile (BVRAAM), was successfully test fired by the Indian Air Force from Su-30 aircraft, today from Air Force Station, Kalaikunda.

Astra- Features:

- Astra is an all weather beyond-visual-range air-to-air missile developed by the Defence Research and Development Organisation, India. It is the first air-to-air missile developed by India.
- It features mid-course inertial guidance with terminal active radar homing. Astra is designed to be capable of engaging targets at varying range and altitudes allowing for engagement of both short-range targets at a distance of 20 km (12 mi) and long-range targets up to a distance of 80 km.

Need to Know - Astra- features and operability.

Goods and Services Tax Network (GSTN)

Why in News?

The Union Cabinet has given its approval to make GSTN, a fully owned government entity.

About GSTN:

- Goods and Services Tax Network (GSTN) is a Section 8 (under new companies Act, not for profit companies are governed under section 8), non-Government, private limited company. It was incorporated in 2013.
- So far, the Government of India held 24.5% equity in GSTN and all States of the Indian Union, including NCT of Delhi and Puducherry, and the Empowered Committee of State Finance Ministers (EC), together hold another 24.5%. Balance 51% equity is with non-Government financial institutions.
- The Company has been set up primarily to provide IT infrastructure and services to the Central and State Governments, tax payers and other stakeholders for implementation of the Goods and Services Tax (GST).

Mission:

- Provide common and shared IT infrastructure and services to the Central and State Governments, Tax Payers and other stakeholders for implementation of the Goods & Services Tax (GST).
- Provide common Registration, Return and Payment services to the Tax payers.
- Partner with other agencies for creating an efficient and user-friendly GST Eco-system.
- Encourage and collaborate with GST Suvidha Providers (GSPs) to roll out GST Applications for providing simplified services to the stakeholders.

- Carry out research, study best practises and provide Training and Consultancy to the Tax authorities and other stakeholders.
- Provide efficient Backend Services to the Tax Departments of the Central and State Governments on request.
- Develop Tax Payer Profiling Utility (TPU) for Central and State Tax Administration.
- Assist Tax authorities in improving Tax compliance and transparency of Tax Administration system.
- Deliver any other services of relevance to the Central and State Governments and other stakeholders on request.

Need to Know - GSTN- key features, ownership and significance.

