Prelim Bits 01-04-2019

PSLV C45

- ISRO's workhorse PSLV-C45 has successfully placed EMISAT and AMSAT along with 28 other satellite in orbit using PS4 engines.
- Polar Satellite Launch Vehicle (PSLV) is the third generation launch vehicle of India.
- It is the first Indian launch vehicle to be equipped with liquid stages.
- The vehicle has successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013 – that later travelled to Moon and Mars respectively.
- The PSLV C45 rocket has four stages, each one was self-contained, with its own propulsion system, thereby capable of functioning independently.
- The first and third stages used composite solid propellants, while the second stage used earth-storable liquid propellant and fourth one fitted with Solar Panels.
- **EMISAT -** It is a satellite developed by DRDO which is meant to provide intelligence to the armed forces.
- **AMSAT –** For Radio Amateur Satellite Corporation, India has sent a payload called the Automatic Packet Repeating System.
- This is expected to help amateur radio operators to get improved locational accuracy in their tracking and monitoring activity.

PS4 Engines

- PSLV is capable of launching satellites into different types of orbits like Sun Synchronous Polar Orbit (SSPO), Low Earth Orbit (LEO) and Geosynchronous Transfer Orbit (GTO), as per the customer requirements.
- The value engineered PSLV has flexibility in the upper stage (PS4) configuration enabling cost effective launch of different class of satellites.
- In order to achieve multiple orbits, two different options, namely, having separate propulsion module or employing upper stage restart, are available.
- PSLV has selected the second option-restart off PS4 engines twice with a long gliding between two restarts.
- PS4 stage is powered by twin liquid engines, which demands maintenance

of critical parameters within the limit for overall controllability during restart.

Mushroom on Mars

- A new study has found “evidence” to support the hypothesis that life exists on Mars.
- The study has used photographs that are supposed of Mushrooms taken by NASA’s Curiosity and Opportunity rover in Mars.
- The study also looks at various kinds of evidence, including simulation studies on what species can survive in a Mars-like environment, besides the specimens that resemble fungi, puffballs, algae and lichens.
- Thus a significant majority of the scientific forum has agreed that there is high probability fungi and lichens may have colonized the Red Planet.

Caesarean Births in India

- According to recent research, the proportion of births delivered by cesarean delivery has increased especially fast during the last decade in India.
- India’s annual birth rate is 2.64 crore per year, there is a growth in Caesarean (C-sec) rate to 17.2%, which is above the World Health Organization’s recommendation.
- Changes in lifestyles, commercial pressure, and cultural factors as some of the plausible explanations for the rise.
- Since 1985, the international healthcare community has considered the ‘ideal rate’ for caesarean sections to be between 10% and 15%.
- New studies reveal that when caesarean section rates rise towards 10% across a population, the number of maternal and newborn deaths decreases.
- But when the rate goes above 10%, there is no evidence that mortality rates improve.”
- If caesarean rates are below 5% in a population, WHO suggests it indicates a problem in healthcare access.

LUC L-56

- The Indian Navy has received a warship with landing craft utility (LCU), L-56.
- The warship was built and designed by Garden Reach Shipbuilders & Engineers Limited (GRSE), Kolkata.

- The LCU was GRSE's 100th warship, the ship can accommodate 216 personnel and is equipped with two indigenous CRN 91 guns.
- The ship is fitted with the state-of-the-art equipment and advanced systems such as the Integrated Bridge System (IBS) and Integrated Platform Management System.

Community radio

- The Community radio is a radio service offering a third model of radio broadcasting in addition to commercial and public broadcasting.
- They broadcast content that is popular and relevant to a local, specific audience.
- Community radio stations are operated, owned, and influenced by the communities they serve.
- They are generally nonprofit and provide a mechanism for enabling individuals, groups, and communities to tell their own stories, to share experiences and, in a media-rich world, to become creators and contributors of media.
- Recently Election Commission of India has reached out to over 150 Community Radio stations across the country to help educate and inform the voters.

Source: PIB, Indian Express, the Hindu

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