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Habitable Exoplanets

- Recent data from Kepler Spacecraft shows a large number of habitable Exoplanets.
- An exoplanet or extrasolar planet is a planet outside the Solar System.
- The first confirmation of detection of exoplanets occurred in 1992.
- Recently NASA estimated that there are at least 100 billion stars in the Milky Way, of which about 4 billion are sun like.
- If only 7% of those stars have habitable planets, a conservative estimate is that there could be as many as 300 million potentially habitable Earths (exoplanets) out there in the whole Milky Way alone.
- The team calculated that at least one third of stars similar in mass and brightness to the sun have rocks like earth in their habitable zone.

Kepler Spacecraft

- The Kepler Mission was launched in 2009 on a three-and-a-half year mission to monitor 1,50,000 stars in a patch of sky in the Milky Way.
- It was NASA's first planet-hunting mission, it discovered more than 2,600 of around 3,800 exoplanets.
- It looked for tiny dips in starlight caused by an exoplanet passing in front of its home star.
- Kepler's formal goal was to measure a number called eta-Earth: the fraction of sun like stars that have an Earth-size object orbiting them in the "goldilocks" or habitable zone, where it is warm enough for the surface to retain liquid water.
- Kepler is succeeded by NASA's Transiting Exoplanet Survey Satellite, or TESS, which was launched in April 2018.
- TESS is the new planet hunter for NASA.

Differential Licencing in Telecom

- The grant of telecom licenses in India is primarily governed by the Indian Telegraph Act 1885, and the Indian Wireless Telegraph Act 1933.
- These Acts provide an exclusive authority to the Central Government for establishing, maintaining, and working telegraphs, and wireless

telegraphy equipment, and to grant licenses for such activities.

- The 1885 Act defines "Telegraph" as any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electromagnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means.
- In 2003, the Unified Access Service License (UASL) regime was introduced which permitted an access service provider to offer both fixed and/or mobile services under the same licence, using any technology. It came into being in 2013.
- In 2012, the National Telecom Policy was issued with the aim to simplify the licensing framework, and to strive for the creation of One Nation-One License across services and service areas.
- Recently, various telecom operators have collectively opposed the move to introduce differential licensing via unbundling of various layers (infrastructure, network, services, and application layer).
- In 2019, National Digital Communications Policy 2018, under its 'Propel India' mission, envisages reforming the licensing and regulatory regime to catalyse investments and innovation and promote Ease of Doing Business.
- Enabling unbundling of different layers through differential licensing is one of the action plans for fulfilling the strategy.
- For that, the Telecom Regulatory Authority of India (TRAI) was requested to furnish recommendations and seek stakeholders' (telecom operators) inputs on possible benefits and measures.

Propel India

- Propel India mission is one of the three missions launched under National Digital Communications Policy in 2018.
  It aims to enable Next Generation Technologies and Services through Investments, Innovation and IPR generation.
- It also aims to attract investments of USD 100 Billion in the Digital Communications Sector, expand IoT ecosystem to 5 Billion connected devices, and accelerate transition to Industry 4.0 by 2022.
- The objective of the mission are as follows

1. Creation of innovation led Start-ups in Digital Communications sector.
2. Creation of Globally recognized IPRs (Intellectual Property Rights) in India.
3. Development of Standard Essential Patents (SEPs) in the field of digital communication technologies.

4. Train/ Re-skill 1 Million manpower for building New Age Skills.

Hazira-Ghogha Ro-Pax Ferry Service

- Hazira-Ghogha Ro-Pax ferry service has inaugurated recently.
- It will work as a Gateway to South Gujarat and Saurashtra region.
- It will reduce the distance between Ghogha and Hazira from 370 Kilometres to 90 Kilometres.
- The reduced cargo travel time will result in huge savings of fuel approximately 9000 litres per day and will lead to reduction in CO2 emission by approximately 24 million tonnes per day.
- With the onset of Ferry services, the port sector, furniture and fertilizer industries in Saurashtra and Kutch region will get a big boost.
- The benefits of enhanced connectivity through this ferry service will also result in increased inflow of tourists in the famous Asiatic lion wildlife sanctuary at Gir.

Academic Freedom Index

- Academic freedom, in general, refers to a scholar's freedom to express ideas without risk of official interference or professional disadvantage.
- It has been published by Global Public Policy Institute as a part of a global time-series dataset (1900-2019).
- It compares levels of academic freedom worldwide and enhances the understanding of its curtailments.
- The AFI used eight components to evaluate the scores namely

1. Freedom to research and teach,
2. Freedom of academic exchange and dissemination,
3. Institutional autonomy,
4. Campus integrity,
5. Freedom of academic and cultural expression,
6. Constitutional protection of academic freedom,
7. International legal commitment to academic freedom under the International Covenant on Economic,
8. Social and Cultural Rights, and existence of universities.

- The scores are scaled 0-1.
- In the recent AFI, India has scored considerably low with a score of 0.352.
- India with a score of 0.352, is closely followed by Saudi Arabia (0.278) and Libya (0.238).
- The index did not report data for 35 countries - including the United

States and Australia.
- Top Performers of the Index are Uruguay and Portugal top the AFI, with scores of 0.971 each, followed closely by Latvia (0.964) and Germany (0.960).

Height and Body Mass Index (BMI) Trends

- Height and BMI are anthropometric measures of the quality of nutrition and healthiness of the living environment during childhood and adolescence and are highly predictive of health and developmental outcomes throughout life.
- Anthropometry is the science of measuring the size and proportions of the human body.
- A recent study published in Lancet, provides new estimates for height and Body Mass Index (BMI) trends in 2019 across 200 countries.
- **Key report findings are**

1. Both height and BMI have increased from 1985 to 2019 although there is still a great deal of potential for height while curbing any future rise in obesity.
2. The height and BMI trajectories over age and time of school-aged children are highly variable across countries, which indicates heterogeneous nutritional quality and lifelong health advantages and risks.
3. India ranks third and fifth from the bottom respectively among countries where 19-year-old girls and boys have a low BMI.
4. The mean BMI of 19-year-old boys is 20.1 in India, compared to a high of 29.6 in the Cook Islands and a low of 19.2 in Ethiopia.
5. The mean BMI for 19-year-old Indian girls is again 20.1, compared to a high of 29.0 in Tonga and a low of 19.6 in Timor-Leste.
6. Height:
7. The 20 cm or higher difference between countries with the tallest and shortest mean height represents approximately 8 years of growth gap for girls and approximately 6 years for boys.
8. For example, 19-year-old girls in India have the same mean height as 12-year-old Dutch girls.
9. The prevalence of overweight and obesity among adolescents of both Indian girls and boys is lower when compared to children of developed nations.

- There can be several reasons for this like variations in the epigenetic, dietary intakes, familial, psychosocial, parental education, occupations, income, etc.

- Epigenetics literally means ‘above’ or ‘on top of’ genetics. It refers to external modifications to the Deoxyribonucleic acid (DNA) that turn genes ‘on’ or ‘off’.
- These modifications do not change the DNA sequence, but instead, they affect how cells ‘read’ genes.

Body Mass Index

- It is measured as the weight in kilograms divided by the square of the height in metres.
- World Health Organisation (WHO) guidelines define a normal BMI range as 18.5 to 24.9, overweight as 25 or higher, and obesity as 30 or higher.

Tinnitus

- Tinnitus is the perception of noise or ringing in the ears.
- Tinnitus isn't a condition itself — it's a symptom of an underlying condition, such as age-related hearing loss, ear injury or a circulatory system disorder.
- Tinnitus can significantly affect quality of life.
- One may experience fatigue, stress, sleep problems, trouble concentrating, memory problems, depression, anxiety and irritability, etc.
- Although it can worsen with age, for many people, tinnitus can improve with treatment.
- Treating an identified underlying cause sometimes helps.
- Other treatments reduce or mask the noise, making tinnitus less noticeable.
- Treatments may include hearing aids, sound-masking devices, medicines, and ways to learn how to cope with the noise.
- New research has found that Tinnitus is being exacerbated by Covid-19 and also by the measures being taken to fight the infection.
- It found that 40% of those displaying symptoms of Covid-19 simultaneously experience a worsening of their tinnitus.

Source: PIB, Indian Express, the Hindu

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