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Beresheet 2

- SpaceIL, the nonprofit Israeli initiative has secured \$70 million fund to make a second attempt at a lunar landing through Beresheet Project.
- **Beresheet 1** or “Genesis spacecraft” built by SpaceIL suffered technical malfunctions and crashed on the moon in 2019.
- **Beresheet 2** was announced in 2020, aiming at landing an unmanned craft on the moon in 2024.
- It plans to set new global space records through a double landing on the moon and the instalment of the lightest ever moon landers, each weighing 60 kg without fuel.
- The objective of this mission is to conduct experiments and collect data on behalf of school students.
- It will be composed of three spacecraft - an orbiter named Mothership’ and two landers - that would circle the moon for years.
- **Significance** - The mission hopes to follow China in becoming only the second to successfully land on the far side of the moon.
- Israel would become the fourth nation to land a spacecraft on the moon, only after the former Soviet Union, the US and China.

Green Hydrogen Mobility Project

- Renewable Energy Ltd (REL), a 100% subsidiary of [NTPC](#), signed a MoU with Union Territory of Ladakh and LAHDC to setup the country’s first [Green Hydrogen](#) Mobility project in the region.
- This Project will enable NTPC to help Ladakh develop a carbon free economy based on renewable sources and green hydrogen.
- With this Project, Leh is soon to become India’s first city to implement a green hydrogen based mobility project with zero emission.
- NTPC has been promoting usage of green hydrogen based solutions in sectors like mobility, energy, chemical, fertilizer, steel etc. It has recently doubled its target to achieving 60GW renewables capacity by 2032.

Cairo International Conference on Population and Development

- The Uttar Pradesh CM has announced measures to control population growth. These measures aim to reduce UP's Total Fertility Rate (TFR) recorded as 2.7 by the National Family Health Survey-4 in 2016.
- The aims in this direction are,
 - Increasing the rate of modern contraceptive prevalence, male contraception,
 - Decreasing maternal mortality and infant mortality rates significantly by 2026.
- These aims are in line with what was stressed at the **Cairo International Conference on Population and Development** (Cairo ICPD) in 1994.
- The Cairo ICPD was convened under the auspices of the United Nations.
- It was organized by a secretariat composed of the Population Division of the then UN Department for Economic and Social Information and Policy Analysis (now Dept of Economic and Social Affairs) and UNFPA.
- The ICPD was the largest intergovernmental conference on population and development ever held, with 179 governments participating and other participants from governments, UN agencies, NGOs, etc
- The Conference adopted the Programme of Action by Consensus in 1994. This Cairo Consensus had
 - Called for promotion of reproductive rights of women, empowering women, universal education, maternal and infant health to untangle the knotty issue of poverty and high fertility.
 - Introduced the concepts of sexual and reproductive health and reproductive rights.
- It emphasizes the integral linkages between population and development and focuses on meeting the needs of individual women and men, rather than on achieving demographic targets.

S&P on India's Economic Growth

- S&P Global Ratings has affirmed its lowest investment grade sovereign rating at 'BBB-' and stable outlook for India.
- It says that the country's recovery will gain pace through the second half of fiscal 2022 and the following year.
- It has projected the economy to grow at 9.5% in FY22 over a very weak base of record 7.3% contraction in FY21.
- However, S&P may lower the ratings if,
 - The country's economy recovers significantly slower than it expects from FY22 onwards or
 - The country's Net general government deficits and the associated

accumulation of indebtedness materially exceed its forecasts.

- It warned that fiscal settings are weak, and deficits will remain elevated.

RBI Retail Direct Scheme

- RBI announced that the 'RBI Retail Direct Scheme', a one-stop solution to facilitate investment in [Government Securities](#) (G-secs) by retail investors (individuals).
- Under the scheme, the investors will have the facility to open and maintain the 'Retail Direct Gilt Account' (RDG Account) with the RBI.
- [A "Gilt Account" means an account opened and maintained for holding Government securities. Instead of money, the account is debited or credited with treasury bills or government securities.]
- RDG account can be opened through an online portal provided for the purpose of the scheme. The online portal will give registered users access to primary issuance of G-secs and access to Negotiated Dealing System-Order Matching system (NDS-OM).
- [NDS-OM is an electronic, screen-based, anonymous, order-driven trading system for dealing in government securities. It was introduced by the RBI in 2005.]

Retail Investor

- They are non-professional investors who buy and sell securities or funds that contain a basket of securities such as mutual funds and exchange traded funds (ETFs).
- They execute their trades through traditional or online brokerage firms.
- They purchase securities for their own personal accounts and often trade in dramatically smaller amounts as compared to institutional investors.

Institutional Investor

- It is an umbrella term for larger-scale investments by professional portfolio and fund managers.
- They are the big players in the market who move big money.
- Examples - Pension funds, Mutual funds, Money managers, Insurance companies, Investment banks, Commercial trusts, Endowment funds for a university or college, Hedge funds, Private equity firms or investors, etc

Cryptogamic Garden

- India's first cryptogamic garden housing nearly 50 species of lichens, ferns and fungi was inaugurated at Deoban of Uttarakhand's Dehradun district.
- This garden at Deoban is at a height of 9,000 ft. Deoban was chosen to locate

the garden because of its low pollution levels and moist conditions which are conducive for the growth of cryptogamic species.

- Deoban has pristine majestic forests of Deodar and Oak which create a natural habitat for these cryptogamic species.

Cryptogamae

- Cryptogamae means “hidden reproduction” referring to the fact that they produce no flowers, fruits and seeds. It includes all non-seed bearing plants.
- They are classified as lower plants because they don't have many of the structures we associate with plants.
- These can both be aquatic or terrestrial. These reproduce vegetatively, asexually and sexually.
 - Vegetative reproduction takes place cell division or fragmentation.
 - Asexual reproduction takes place by the means of spores.
 - Sexual reproduction takes place by fusion of male and female gametes.
- Algae, bryophytes (moss, liverworts), lichens, ferns and fungi are the groups of cryptogams that require moist conditions to survive.
- **Lichens** are a complex life form that is a symbiotic partnership of two separate organisms, a fungus and an algae.
- **Fungi** are a kingdom of eukaryotic organisms that are heterotrophs.
- **Ferns** are the largest living group of vascular plants.
- The Plant Kingdom has two groups - Cryptogams (Non-seed bearing plants) and Phanerogams (Seed bearing plants).

Classification of Cryptogams

- Cryptogams are further divided into 3 groups such as Thallophyta, Bryophyta and Pteridophytes.
- **Thallophyta** include algae, fungi, bacteria, and lichens. These are the simplest plants where the body is not differentiated into roots, leaves, and stems. The simplest thallophytes are bacteria.
- These are aquatic plants that can grow in fresh as well as marine water. These lack vascular system.
- **Bryophyta** includes liverworts, horned liverworts, and mosses. are the simplest and primitive non-vascular land plants that occupy an intermediate position between algae and pteridophytes.
- These are also an undifferentiated plant with no vascular tissues. They prefer moist habitats but they can survive in dry environments too.
- These have rhizoids (root like structure) for anchorage. These are generally found in damp and moist places.
- These can grow both on land and in water. These are simplest of all land

plants and also known as amphibians of the plant kingdom.

- **Pteridophytes or vascular cryptogams** include all kinds of ferns.
- These have well-differentiated plant body and vascular system is also present in them. These are most advanced of all cryptogams.
- They are vascular plants that disperse spores. It is the first plant to have xylem and phloem.

Source: PIB, The Hindu, The Indian Express, Investopedia



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