Prelim Bits 29-12-2021 | UPSC Daily Current Affairs

Extreme Cold Weather Clothing System

Defence Research and Development Organisation (DRDO) has handed over technology for indigenous Extreme Cold Weather Clothing System (ECWCS) to some Indian companies.

- The Extreme Cold Weather Clothing System is ergonomically-designed modular, three-layered **technical clothing** system that can be used at various climatic conditions in extreme altitude combat operations.
- It is designed to provide **thermal insulation** over a temperature range of +15 to -50° Celsius with different combinations of the layers and intensity of physical work.
- It embodies **physiological concepts** related to reduction in respiratory heat and water loss, unhindered range of motions and rapid absorption of sweat.
- It provides **water proof, wind proof** features with adequate breathability.
- The outer layer of the clothing is reversible for camouflage purposes in both snow bound terrain as well as areas without snow cover.
- ECWCS meets the insulation requirements (IREQ) for the widely fluctuating weather conditions in the Himalayan peaks.
- **Significance** - The Indian Army, till recently has been importing ECWCS and several Special Clothing and Mountaineering Equipment (SCME) items for the troops deployed in high altitude regions.
- ECWCS is a viable import alternative for the Indian Army for its sustained operations in glacier and Himalayan peaks.
- **Related Links** - Technical Textiles

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1785810
2. https://www.drdo.gov.in/sites/default/files/inline-files/ecwcs.pdf
3. https://frontline.thehindu.com/dispatches/drdo-hands-over-technology-to-manufacture-extreme-cold-weather-clothing-system-to-five-industry-partners/article38060394.ece

Gram Ujala Programme

The Government has achieved a remarkable milestone of distributing 50 lakhs LED bulbs under Project Crore of their Gram Ujala programme.

- Under the Gram Ujala scheme, high quality 7-Watt and 12-Watt LED bulbs with 3 years guarantee is provided at Rs. 10 per bulb in exchange of working 60-Watt and 100-Watt incandescent bulbs.
- [LED is a highly energy efficient lighting technology. Residential LED bulbs use at least 75% less energy than the conventional ones and last 25 times longer.]
- Every household can exchange a maximum of 5 bulbs. The government will also install meters at these houses.
- Gram Ujala scheme is being implemented in rural households in Bihar, Uttar Pradesh, Andhra

Pradesh, Karnataka, and Telangana.
- It is implemented by the Convergence Energy Services Limited (CESL).
- The programme is active till March 31, 2022.

Gram Ujala Programme is based upon the Clean Development Mechanism (CDM) protocols of the United Nations.

Convergence Energy Services Limited

- Convergence Energy Services Limited (CESL) is a wholly-owned subsidiary of Energy Efficiency Services Limited (EESL).
- [EESL is a joint venture of public sector companies under the Ministry of Power.]
- CESL is focused on delivering clean, affordable, and reliable energy.
- CESL focuses on energy solutions that lie at the confluence of renewable energy, electric mobility, and climate change.
- CESL is also working towards enabling battery-powered electric mobility and its infrastructure and design business models to increase the uptake of electric vehicles in India.
- By employing unique business models, Convergence is utilizing a blend of concessional and commercial capital, carbon finance and grants as appropriate to enable commercialization of these solutions at scale.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1785737
2. https://www.hindustantimes.com/india-news/what-is-gram-ujala-scheme-all-you-need-to-know-101639445684397.html
3. https://www.thehindu.com/news/national/andhra-pradesh/gram-ujala-to-light-up-rural-households-in-state/article3545574ece

Evolution of Pregnancy

A recent study on the Eurasian common lizard (Zootoca vivipara) that exhibits the rare incidence of both oviparity and viviparity helps in understanding the genetic basis of the evolution of pregnancy.

Viviparity is the live-bearing behaviour to beget young ones.

Oviparity is the egg-laying behaviour to beget young ones.

- Through the Convergent evolution, viviparity (as opposed to oviparity) has evolved independently in vertebrates at least 150 times.
- [Convergent evolution is a phenomenon where different species evolve similar characteristics though they come from very different lineages.]
- In squamates alone, viviparity has evolved independently 115 times.
- [Squamates are a group including lizards, snakes and worm lizards or amphisbaenians.]
- Different **geographically separated** populations of the same species Eurasian common lizard show both Viviparity and Oviparity.
- Two populations have diverged as recently as nearly 4 million years ago.
- So, this may be seen as a transition stage in moving from one parity to another parity.
- By studying the genomic comparison between these two populations, the researchers have

also seen **hybrid members**, in areas where the two populations overlap.
- The development of viviparity is accompanied by changes in the mother and the development of the embryo.
- For instance, active physiological exchange of water, gas and calcium from mother to embryo and an adjusted immune response for maternal-foetal communication.
- In advanced stages of viviparity, more complex placentation is seen with enhanced nutrition transfer from mother to baby.
- In the Eurasian common lizard, viviparity is at a relatively early stage.
- **Significance** - The study helps in understanding the genetic basis of the evolution of pregnancy, and the fact of seeing both parities in the same species makes this study unique and insightful.

Reference

https://www.thehindu.com/sci-tech/science/the-progress-of-evolution/article38053451.ece

RBI's Retail Direct Scheme

- RBI's Retail Direct platform allows individuals to open and maintain a no-charge Retail Direct Gilt (RDG) account directly with the RBI.
- NRIs eligible to invest in g-secs under FEMA can open this account too.
- This platform helps in buying government debt securities (G-Secs), either during their initial issue or after they begin to trade in the secondary market.
- RBI's Retail Direct platform gives you access to primary auctions first.
- To get access to secondary market trades which happen on the Negotiated Dealing System - Order Matching (NDS-OM), you need to apply separately on Retail Direct to get a user login and password.
- RBI conducts periodic auctions of g-secs according to a schedule called the borrowing calendar that it puts out every half year for g-secs and quarter for treasury bills.
- Through this new platform, retail investors can invest a minimum of ₹10,000 going up to ₹2 crore in these auctions.
- **Auctions -** In the Retail Direct Scheme, the four types of securities that can be auctioned are,
    1. Dated government stock (Central government borrowings for 1 year to 40 years),
    2. Treasury bills or T-bills (Central government borrowings for 91, 182 and 364 days),
    3. State Development Loans (State government borrowings for 1 year to 30 years) and
    4. Sovereign Gold Bonds.
- RBI sets a maximum coupon rate or minimum price for each security in every auction and institutions bid based on this.
- The lowest coupon or highest price at which an auction gets fully subscribed becomes the 'cut-off' yield or price.
- The retail investor needs to know how to bid and can simply choose at the final cut-off price or yield that will be discovered by institutions.
- Money is collected upfront from your bank account based on the reserve price set by the RBI.
- To know more about the RBI's Retail Direct Scheme, click here.

Reference

https://www.thehindu.com/business/Economy/log-on-to-g-secs-with-rbis-retail-direct/article38038321.ece

SOIL Report 2021

- The State of India's Livelihoods (SOIL) Report is an annual Report released by the ACCESS Developmental Services.
- It is an authoritative commentary on
    1. Policy and programmes of the government, potential opportunities for the poor, and
    2. Role of the private sector and the civil society in livelihoods promotion.
- It tracks the trends and analyses the environment in the sector.
- **Findings** - The 2021 Report has analysed only Farmer Producer Companies (FPCs).
- In the last 7 years, just 1-5 % of FPOs have received funding under central government schemes introduced to promote them.
- Only 5% of total registered FPOs have been able to secure the grants under Equity Grant Scheme and Credit Guarantee Scheme.
- FPOs registered under Companies Act make up a large majority of the organisations while the FPOs registered as cooperatives /societies are less in number.

Reference

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