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CIBER-2

- A NASA-funded rocket will carry CIBER-2 instrument to count the number of stars that exist in the Universe.
- The mission's CIBER-2 instrument has been improved upon to see if any stars had been undercounted in the previous counting attempts.
- **Estimation** - In order to estimate the number of stars in the Universe, scientists have estimated that on average each galaxy consists of about 100 million stars, but this figure is not exact (underestimation).
- But this calculation assumes that all stars are inside galaxies - might not be true - and this is what the CIBER-2 instrument will try to find out.
- **Working** - The CIBER-2 will launch aboard a suborbital sounding rocket that will carry scientific instruments on brief trips into space before it falls back to Earth for recovery.
- Once the instrument is above Earth's atmosphere, it will survey a patch of sky that will include dozens of clusters of galaxies.
- Even so, the instrument will not actually count individual stars but it will instead detect the extragalactic background light, which is all of the light that has been emitted throughout the history of the Universe.
- From all of this extragalactic background light, the CIBER-2 will focus on a portion of the cosmic infrared background, which is emitted by some of the most common stars.
- This approach is aiming to look at how bright this light is to give scientists an estimate of how many of these stars are out there.
- Previously, the ESA infrared space observatory Herschel also counted the number of galaxies in infrared and measured their luminosity.

Nano Urea Liquid

- The Indian Farmers Fertiliser Cooperative Limited (IFFCO) launched the World's 1st Nano Urea Liquid for the farmers across the World.
- It has been indigenously developed at Nano Biotechnology Research Centre, Gujrat in line with Atmanirbhar Bharat and Atmanirbhar Krishi.
- IFFCO Nano Urea Liquid is a nutrient to provide nitrogen to plants as an alternative to the conventional urea.
- It is developed to replace conventional urea and it can curtail the

requirement of the same by at least 50%.
- It contains 40,000 ppm of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.
- The conventional urea is effective 30-40% in delivering nitrogen to plants, while the effectiveness of the Nano Urea Liquid is over 80%.
- Currently, India is dependent on imports to meet its urea requirements.
- During 2019-20, the production of urea was only 244.55 lakh metric tonnes as against the consumption volume of 336 LMT leaving a gap of over 91 LMT.

Indian Farmers Fertiliser Cooperative Limited

- It is one of India's biggest cooperative societies tha is wholly owned by Indian Cooperatives.
- Founded in 1967 with just 57 cooperatives, today it is an amalgamation of over 36,000 Indian Cooperatives with diversified business interests.
- Its aim is to enable Indian farmers to prosper through timely supply of reliable, quality agricultural inputs and services in a sustainable manner and to undertake other activities to improve their welfare.

ASPAGNII

- Department of Biotechnology- National Institute of Immunology (DBT-NII) receives ASPAGNII trademark for India’s First Indigenous Tumour Antigen SPAG9. SPAG9 was discovered by Dr Anil Suri in 1998.
- Currently, ASPAGNII is being used in dendritic cell (DC) based immunotherapy in cervical, ovarian cancer and will be used in breast cancer.
- **Immunotherapy** is a new approach that exploits the body’s inner capability to put up a fight against cancer.
- With this approach, either the immune system is given a boost, or the T cells are “trained’’ to identify recalcitrant cancer cells and kill them.
- In this personalised intervention, those patients expressing SPAG9 protein can be treated with the DC-based vaccine approach.
- In DC-based vaccine, patient’s cells called monocytes are collected from their blood and modified into dendritic cells.
- The DCs are primed with ASPAGNII and are injected back to the patient to help the ‘fighter’ cells, or T-cells, in the body to kill the cancer cells.
- DC-based immunotherapy is safe, affordable and can promote antitumor immune responses and prolonged survival of cancer patients.

BIS Scheme on SDO Recognition

- Research Design & Standards Organization (RDSO) of Indian Railways has

become the first Institution to be declared as a Standard Developing Organization (SDO) under the BIS SDO Recognition Scheme.

- [RDSO, Lucknow, which is the sole R&D Wing of Ministry of Railways, is one of India's leading Standard formulating Body undertaking standardization work for railway sector.]
- To attain "One Nation One Standard" vision of Govt., Bureau of Indian Standards (BIS), which is a National Standards body under Department of Consumer Affairs, has launched a BIS SDO Recognition Scheme.
- Through this scheme, BIS integrates the existing capabilities and dedicated domain specific expertise available with various organizations in the country engaged in standards development in their sectors.
- It aims to enable convergence of all standard development activities in the country resulting in "One National Standard for One Subject".
- In order to become an SDO, RDSO reviewed its Standard Formulation procedures to realign them with the Best Practices of Standardization,
    1. Encoded in the WTO-TBT "Code of Good Practice" and
    2. Mandated by the BIS as essential criteria for recognition as SDO.
- The scope of RDSO's recognition as SDO, as approved by BIS is "SDO for products, processes and services for railway transportation sector in India".
- The recognition is valid for 3 years and will require renewal after completion of the validity period.
- **Significance** - The initiative set to usher in more faster transition from development of technology & innovation stage to actual use on ground.
- In the long run, the initiative will create a Brand India identity for quality of product manufactured inters the country.

World Employment and Social Outlook 2021

- The UN's International Labour Organization (ILO) published its flagship report 'World Employment and Social Outlook (WESO) 2021.'
- The theme of the report was, 'The role of digital labour platforms in transforming the world of work.'
- This ILO report explores how the contemporary platform economy is transforming the way work is organized, analyzing the impact of digital labour platforms on enterprises, workers and society as a whole.
- The report by the ILO focuses to,
    a. Bring out a clear picture of global employment and social trends
    b. Measure the underperformance of the labour market using the unemployment rate
    c. Assess the full potential of the working-age population
    d. Evaluate the participation of the labour market in the economic growth

of the countries

Findings

- **Pandemic's impact** - The ILO report said that the pandemic has pushed over 100 million more workers into poverty, after working hours plummeted and access to good quality jobs evaporated.
- The pandemic has exacerbated existing inequalities in the labour market, with lower-skilled workers, women, young people or migrants among the most affected.
- **Loss of Working Hours** - Many people have held onto their jobs but have seen their working hours cut dramatically.
- In 2020, 8.8% of global working hours were lost compared to the fourth quarter of 2019 -- the equivalent of 255 million full-time jobs.
- While the situation has improved, global working hours have far from bounced back, and the world will still be short the equivalent of 100 million full-time jobs by the end of this year.
- **Unemployment rate** of 6.3% this year (2020-21), falling to 5.7% next year (2021-22) but still up on the pre-pandemic rate of 5.4% in 2019.
- Women have suffered disproportionate job losses while seeing their unpaid working time increase.
- The burden of intensified childcare and homeschooling activities has disproportionately fallen on them. So, women's employment dropped by 5% compared with 3.9% for men.
- **Effect on Workers** - There will be pandemic's longer-term "scarring" effects on workers and enterprises. The projected employment growth will be insufficient to close the gaps opened up by the crisis.

NITI Aayog's SDG India Index

- Sustainable Development Goals (SDGs) India Index 2020-21 was released by the government think tank NITI Aayog.
- **The Index** - SDG India Index is developed in collaboration with the United Nations in India.
- First launched in December 2018, the index has become the primary tool for monitoring progress on the SDGs in India.
- It tracks the progress of all states and UTs on 115 indicators aligned with the National Indicator Framework (NIF) of the Ministry of Statistics and Programme Implementation.
- From covering 13 Goals with 62 indicators in its first edition in 2018, the third edition of the index covers 16 Goals on 115 quantitative indicators.
- **Score** - The SDG India Index scores range between 0–100, higher the score of a State/UT, the greater the distance to target achieved.

- States and UTs are classified in four categories based on their SDG India Index score,
    a. Aspirant: 0–49;
    b. Performer: 50–64;
    c. Front-runner: 65–99,
    d. Achiever: 100.
- **Findings** - In the SDG India Index 2020-21, there are no states in the aspirant and achiever category; 15 states/UTs are in the performer category and 22 states/UTs in the front runner category.
- The country's overall SDG score is 66, which is improved by 6 points from 2019 score. This is due to improvement in performance in providing facilities including clean water and sanitation, etc.
- Kerala has retained the top rank and Chandigarh maintained its top spot among the UTs, while Bihar, Jharkhand and Assam were the worst performing states in this year's index.
- Mizoram, Haryana, and Uttarakhand are the top gainers in terms of improvement in their rankings from 2019.

Source: PIB, The Hindu, The Indian Express, Economic Times