

May - 16

## TNPSC BITS

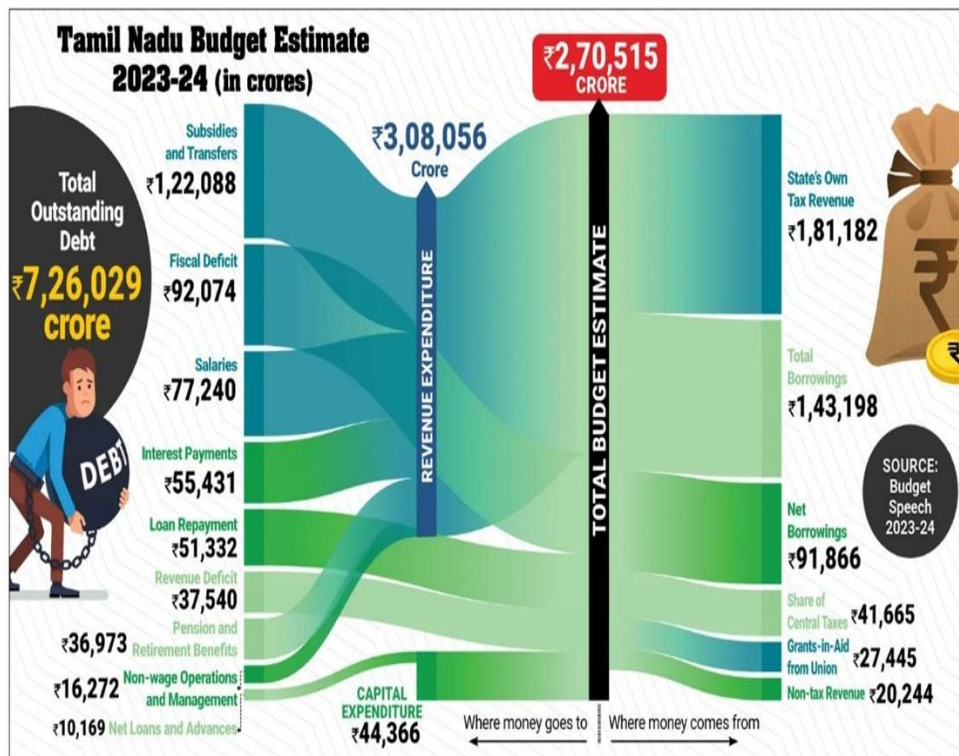
- ❖ Nepali Sherpa climber Kami Rita has scaled Mt Everest for the 29th time, surpassing his own record of 28 ascents.
  - He now holds the record for the most ascents of the world's tallest peak in its 71-year climbing history.
- ❖ The UK announced the completion of half a million whole-genome sequences, almost 0.7% of its population.
  - Such data-sets are transformative, with far-reaching implications for both immediate and long-term advancements in the biological sciences.
- ❖ The International Day of Plant Health (IDPH) is observed on 12 May to raise awareness about the necessity of protecting plant health in order to prevent hunger, reduce poverty, safeguard biodiversity, and promote economic development.
  - The theme of 2024 is 'Plant Health, Safe Trade, Digital Technology.'

## TAMIL NADU

### State's Own Tax Revenue 2023-24

- ❖ Tamil Nadu's Own Tax Revenue stood at ₹1,52,030.77 crore in fiscal 2023-24.
- ❖ The State's Own Tax Revenue (SOTR) increased marginally from ₹1,50,222.75 crore in the final accounts for 2022-23.
- ❖ SOTR contributes 75.6% of Tamil Nadu's total revenue receipts.
- ❖ The SOTR estimates were revised to ₹1,70,147 crore for 2023-24 from the initial budget estimates of ₹1,81,182 crore.
- ❖ Among the SOTR components, State Goods and Services Tax (SGST) increased about 15.11% to ₹61,960.29 crore in 2023-24 from ₹53,822.72 crore in 2022-23.
- ❖ The State also saw its revenue from Stamps and Registration Fees increased about 8.3% to ₹19,013.36 crore in 2023-24 from ₹17,559.89 crore in 2022-23.
- ❖ Land revenue increased to ₹255.87 crore in 2023-24 from ₹247.48 crore in 2022-23.
- ❖ Revenue from Taxes on Sales, Trade etc (which includes VAT on petrol and diesel and liquor) increased to ₹60,026.96 crore in 2023-24 from ₹59,143.52 crore in 2022-23.

- ❖ The State Excise Duties increased to ₹10,774.29 crore in 2023-24 from ₹10,422.61 crore in the comparable period last year.
- ❖ Including these components, the State's total revenue receipts stood at ₹2,62,382.45 crore in 2023-24.
- ❖ The total revenue receipts estimate for 2023-24 was revised to ₹2,72,576.80 crore.



## NATIONAL

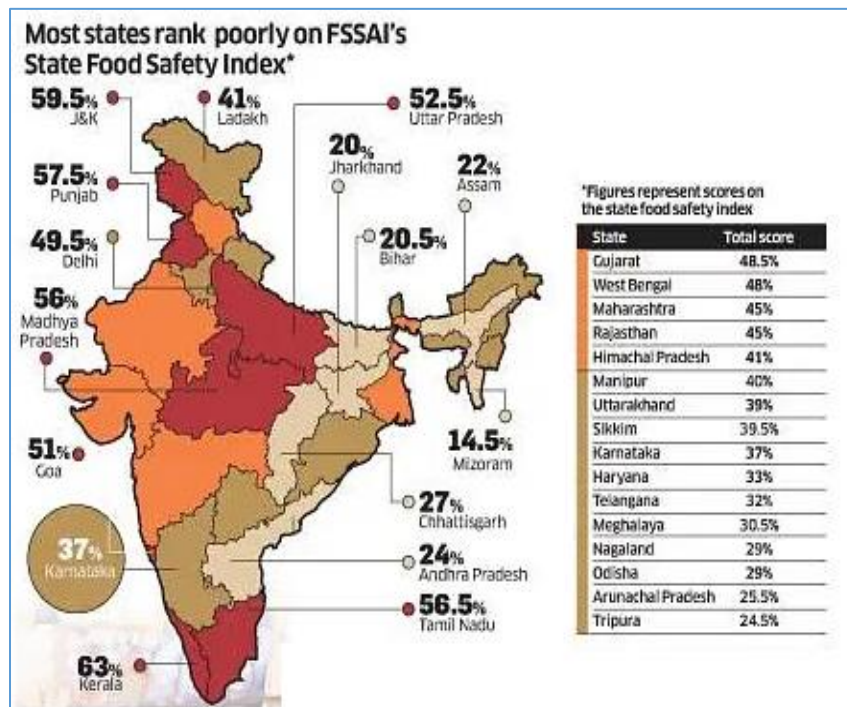
### Misleading Packaged Food Labels

- ❖ ICMR warned that, the information presented on packaged food can be misleading.
- ❖ Sugar-free foods maybe loaded with fats, while packed fruit juices may contain only 10 per cent fruit pulp.
- ❖ The food product can be called 'natural' if it doesn't have added colours and flavours or artificial substances and goes through minimal processing.
- ❖ There is a general misconception that 'nutrition facts' and 'nutrition/nutrient claims' are the same.

- ❖ Nutrition claims refers to any statement which suggests or implies that a food has particular nutritional properties.
- ❖ All of the nutrition information shown is based on the referred serving size.



**Guidelines for prevent ETO contamination**



- ❖ Recently, Hong Kong and Singapore banning the sale of popular brands after detecting the carcinogenic chemical ethylene oxide in their products.

- ❖ The Spices Board has come out with comprehensive guidelines for exporters to prevent ethylene oxide (EtO) contamination in the products shipped from India.
- ❖ It asked to take effective measures to prevent cross-contamination of spices and herbs by direct or indirect contact with potentially contaminated material at all stages of the processing.
- ❖ They are encouraged to use the alternate methods of sterilisation like steam sterilization; irradiation.
- ❖ In 2023-24, India's spice exports totalled USD 4.25 billion, accounting for a 12 per cent share of the global spice exports.
- ❖ The world spice trade is worth USD 35 billion in 2023.
- ❖ China is the top exporter with exports of USD 8 billion in 2023.

## INTERNATIONAL

### WHO certification on HIV



- ❖ Three tiny Caribbean countries - Belize, Jamaica, St. Vincent and Grenadines receive WHO certification for eliminating mother-to-child transmission of HIV and syphilis.
- ❖ WHO awards this certification to countries which have brought the mother-to-child HIV transmission rate to under five per cent.
- ❖ India had 2.5 million people living with HIV in 2022, including 70,000 children.
- ❖ 66,000 people were infected in 2022, a slight increase since 2021.
- ❖ There were 32,000 AIDS-related deaths in 2022 (four deaths every hour).

- ❖ But the overall number had reduced by 25 per cent in a year.
- ❖ In the normal course, the transmission rate of the virus from mother to child during breast-feeding is 24.3 per cent.

### **Afghanistan Flash Floods 2024**

- ❖ The provinces of Badakhshan, Ghor, Baghlan, and Herat have all experienced heavy flooding.
- ❖ The flash floods add to a string of recent natural disasters that the region has had to endure.
- ❖ Afghanistan is among the globe's most at risk nations from the effects of climate change.

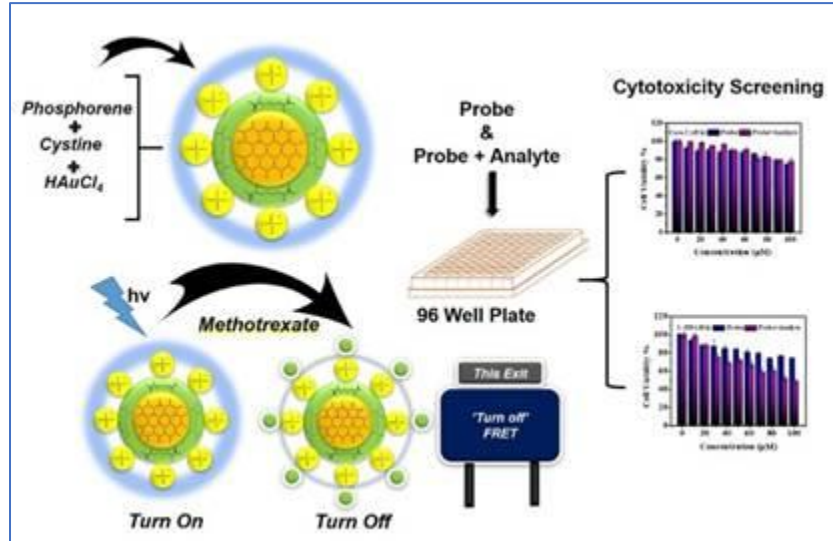


## **SCIENCE AND TECHNOLOGY**

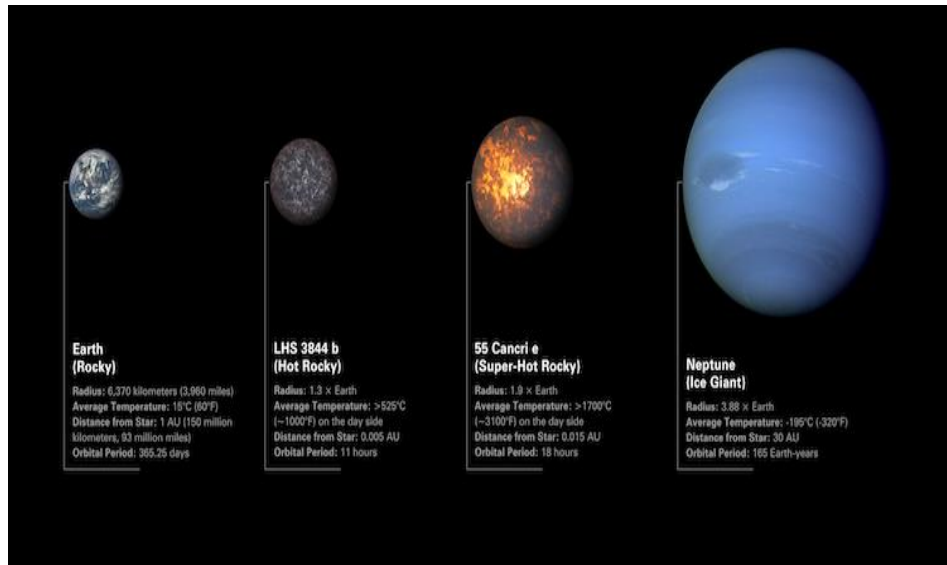
### **Detection of anticancer drug - Ph-Cys-Au**

- ❖ A new highly fluorescent material with exceptional optical properties has been developed using phosphorene, cystine, and gold (Ph-Cys-Au)
- ❖ It can be used as a visual sensing platform for detecting anti-cancer drug MTX overdose of which has toxic effect on lungs, stomach, and heart.
- ❖ Monitoring therapeutic drugs and their elimination is crucial because they may cause severe side effects on the human body.
- ❖ Methotrexate (MTX) is a widely used anti-cancer drug.
- ❖ The MTX value of more than 10  $\mu\text{M}$  in blood plasma is hazardous if it remains in the system for more than 10 hours.

- ❖ It will be resulting in poisoning effects on the lungs, ulcers of the stomach, and heart stroke.



## Rocky planet - 55 Cancri e



- ❖ Scientists have discovered a rocky planet beyond our solar system with an atmosphere.
- ❖ The planet, called 55 Cancri e or Janssen, is about 8.8 times more massive than Earth, with a diameter about twice that of our planet.
- ❖ It orbits its star at one-25th the distance between our solar system's innermost planet Mercury and the sun.

- ❖ As a result, its surface temperature is about 3,140 degrees Fahrenheit (1,725 degrees Celsius/2,000 degrees Kelvin).
- ❖ The planet is probably tidally locked.
- ❖ That is it perpetually has the same side facing its star, much like the moon does toward Earth.
- ❖ The planet cannot be habitable, it is too hot to have liquid water, considered a prerequisite for life.

### **IBM's Condor**



- ❖ IBM quantum scientists are building a quantum computer with a 1,121-qubit processor, called Condor, inside a large dilution "super-fridge."
- ❖ Condor lays the groundwork for scaling to fully error-corrected, interconnected, 1-million-plus-qubit quantum computers.
- ❖ It serves as an innovation milestone, solving scale and informing future hardware design.
- ❖ In 2021, IBM will debut the 127-qubit "Eagle" chip.

## **ENVIRONMENT**

### **New species of needlefish**

- ❖ Scientists at the Central Marine Fisheries Research Institute (CMFRI) have identified two new species of needlefish from Indian waters.

- ❖ The research found that the previously identified flat needlefish (*Ablennes hians*) is a complex of at least three distinct species.
- ❖ The new fishes have been scientifically named as *Ablennes joseberchmansis* and *Ablennes gracalii*.
- ❖ The study focused on specimens collected from Thoothukudi in Tamil Nadu.

