

1. TOI 270

Context: TOI 270: new planetary system about 73 light years away from Earth

About TOI 270:



- ▶▶ It is the **name of the dwarf star** and the planetary system recently discovered by **NASA's Transiting Exoplanet Survey Satellite (TESS)**.
- ▶▶ TOI 270 is about 73 light years away from Earth, and is located in the **constellation Pictor**.
- ▶▶ Its members include the dwarf star, which is 40 per cent smaller than the Sun in size and mass, and the three planets or exoplanets (planets outside the solar system) that have been named **TOI 270 b, TOI 270 c, and TOI 270 d**.
- ▶▶ These three planets orbit the star every 3.4 days, 5.7 days, and 11.4 days respectively.
- ▶▶ **TOI 270 b** is the **innermost planet**. Researchers expect it to be a rocky world about **25 per cent bigger than Earth**.
- ▶▶ It is **not habitable** since it is located too close to the star — about 13 times closer than our Solar System's Mercury is from the Sun.
- ▶▶ **TOI 270 c and TOI 270 d** are **Neptune-like planets** because their compositions are dominated by **gases rather than rock**.
- ▶▶ Planet d, which is suspected to have a rocky core covered by a thick atmosphere, offers a surface unfavourably warm for the existence of liquid water, thereby rendering the planet potentially uninhabitable.

2. AUTOMATED MULTIMODAL BIOMETRIC IDENTIFICATION SYSTEM (AMBIS)

Context: In a first, Maharashtra gets biometric database to list criminals

- ▶▶ **Aim:** To create an ‘instant’ criminal database by addition of **fingerprint, retina and face scans**
- ▶▶ It is a part of the state government’s plans to **modernise the police and improve crime detection.**
- ▶▶ It is the technology will be the best of its kind and **Maharashtra is the first state** to implement it.
- ▶▶ Besides detecting crime through usual fingerprints at the crime scene, the system with the help of retinal scan, writer’s pad, palm and even bare sole scans can help trace criminals with 100% accuracy and that too within a matter of 0.46 milliseconds

3. CHUNDAN VALLAM

Context: Preparations are in full swing for the **67th edition of the Nehru Trophy Boat Race** and the race will be held on **Punnamada Lake**

Chundan Vallam:

- ▶▶ It is known outside Kerala as **Kerala snake boats**, are one of the icons of Kerala culture used in the **Vallamkali boat race**

Punnamada Lake:

- ▶▶ It is popularly known as **Punnamada Kayal** is an extension of the **Vembanad Lake.**
- ▶▶ The lake is renowned for the famous boat race called **Nehru Trophy boat race.**
- ▶▶ This breath-taking lake spread over the Kuttanad region in the Alappuzha district attracts a large number of tourists during the festive month of Onam celebration.
- ▶▶ During this period a large number of tourists flock around this mesmerizing lake.

4. OMEGA 76

Context: Researchers at the **Indian Institute of Science (IISc), Bangalore** have designed an antimicrobial protein that promises to kill multidrug-resistant bacterium called **Acinetobacter baumannii.**

- ▶▶ The bacterium is among those responsible for most of the infections in hospitals and other healthcare settings, and is fast becoming resistant to available antibiotics.
- ▶▶ Researchers used bioinformatics approach to design a protein called **Omega 76.**
- ▶▶ Experiments showed that it killed the bacterium by breaking down its cell membrane.

- ▶▶ It was also found that the molecule could be given in combination with **colistin, which is considered the last hope for multidrug-resistant infections.**
- ▶▶ Conventional drugs act by blocking specific pathways or processes in bacterial cells but bacteria evolve to gain resistance against such drugs.
- ▶▶ **Antimicrobial peptides actually punch holes in the bacterial cell membrane.**
- ▶▶ The chances of drug resistance are much lower because they act by multiple ways and cause actual physical damage to the bacterium.

5. ATAL COMMUNITY INNOVATION CENTRE

Context: Ministry of Petroleum and Natural Gas launched **Atal Community Innovation Centre** in New Delhi to encourage the spirit of innovation at the community level.

- ▶▶ **Aim:** To encourage the **spirit of innovation** through solution-driven design thinking to serve society
- ▶▶ **Purpose:** This new initiative is to make innovation ecosystem **socially inclusive** as well as to ensure equitable distribution of infrastructure for innovation across the country.
- ▶▶ **Focus:** The Atal Community Innovation Centre has been launched to focus on the **484 backward districts** where the innovation infrastructure is very weak
- ▶▶ The new program has been specifically designed for underserved, unserved regions of Tier 1 or Metro cities, Tier 2 and Tier 3 cities, Smart Cities, Aspirational districts, North-East, Jammu and Kashmir as well as the rural and tribal regions of India.

6. AWARD OF SENIOR/JUNIOR FELLOWSHIPS TO OUTSTANDING ARTISTES IN THE FIELDS OF CULTURE

Context: Ministry of Culture and Tourism has announced inclusion of Nepali and Santhali languages in the Scheme for grant of Senior/Junior Fellowships of Culture Ministry

Scheme:

- ▶▶ **Ministry of Culture and Tourism** has announced to include the remaining 02 languages from the **8th Schedule** of the Indian Constitution i.e. **Nepali and Santhali** in the Sub-Field of Field “**Literature**” in the scheme component ‘**Award of Senior/Junior Fellowships to Outstanding Artistes in the Fields of Culture**’
- ▶▶ “Literary Arts” is one of the Fields under this Scheme where candidates can apply for research in **22 languages** as their Sub-Field.

- ▶▶ These 22 languages include the following 20 languages from the 8th Schedule of **Articles 344(1) and 251 of the Indian Constitution along with English and Khasi:**
- ▶▶ The following 20 languages are as follows:
- ▶▶ Assamese, (2) Bengali, (3) Bodo, (4) Dogri, (5) Gujarati, (6) Hindi, (7) Kannada, (8) Kashmiri, (9) Konkani, (10) Maithili, (11) Malayalam, (12) Manipuri, (13) Marathi, (14) Oriya, (15) Punjabi, (16) Sanskrit, (17) Sindhi (18) Tamil, (19) Telugu and (20) Urdu.

