

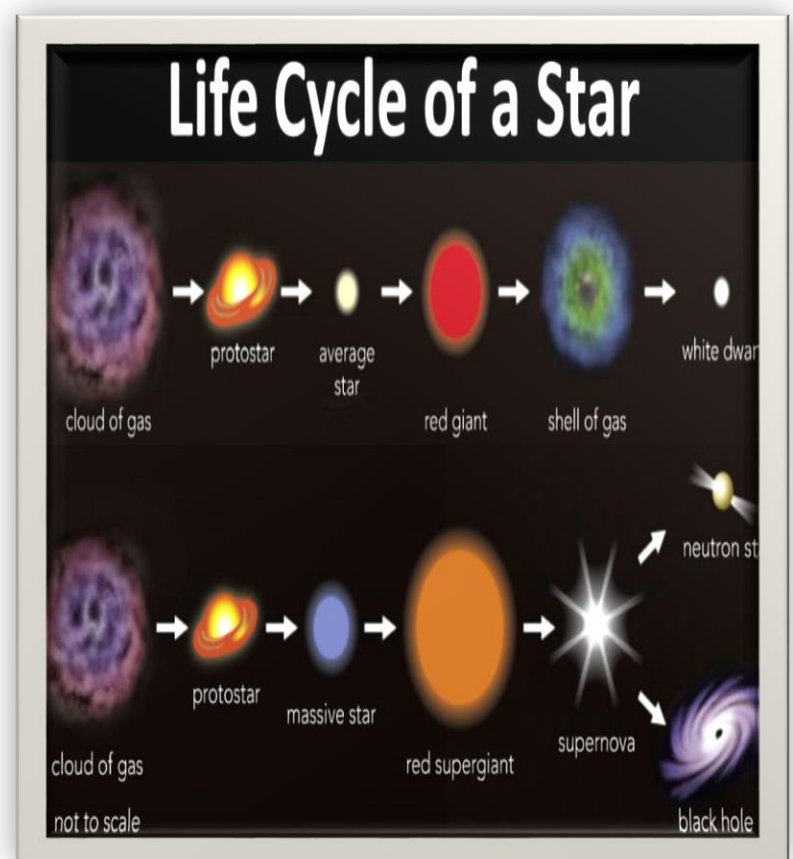
Magnetars

❖ Context

- The **first detailed study on extragalactic magnetar** published in Nature by scientists of Andalusian Institute of Astrophysics, Spain and Aryabhata Research Institute of Observational Sciences (ARIES), Uttarakhand
- They studied different oscillations, or pulses in a **giant flare (GRB2001415)** erupted in April 2020, from a magnetar. The flare **lasted for tenth of a second**.
- The eruption was detected by **Atmosphere-Space Interactions Monitor** instrument, onboard International Space Station
- The magnetar is located in Sculptor group of galaxies, some 13 million light years away

❖ About Magnetar

- When massive stars with a total mass of 10-25 times of solar mass collapse they form neutron stars
- Among **neutron stars** there is a very small group of stars, magnetars, **with most intense magnetic fields** known
- **Only 30 such objects** have been **known till date in Milky way galaxy** and such flares have been detected in two of these 30 objects in the past
- These objects suffer violent eruptions that are still unknown due to their unexpected nature and short duration
- Even in **inactive state**, magnetars can be many **thousand times more luminous than Sun**
- But the **energy**, released during the flare studied, was **equivalent to the energy radiated by Sun in 1,00,000 years**
- It is believed that eruptions in magnetars may be due to **instabilities in their magnetosphere** or to a kind of "earthquakes" ("**starquakes**") produced in their crust, a rigid and elastic layer about a kilometer thick.
- Regardless of the trigger, a type of wave, well known as **Alfvén waves** are produced. These waves, while bouncing back and forth between the points at the base of its lines of magnetic field, interact with each other dissipating energy
- **Alfvén waves** (named after Swedish electric engineer Hannes Alfvén) are also **believed to be responsible for** higher temperature (1 Mn kelvin) of solar corona than the photosphere (**the coronal heating problem**)



National Consumers Day

❖ Context

- Department of Consumer Affairs celebrated National Consumers Day on **24th December** with the **theme - "Consumer - know your rights"**

❖ Key provisions of Consumer Protection Act 2019

- Six rights of consumers
 - **Right to Safety**
 - **Right to be informed**
 - **Right to choose**
 - **Right to be heard**
 - **Right to seek redressal**
 - **Right to consumer education**
- All **e-commerce transactions covered**.
- The provision of **product liability** not only introduced but also extended to sellers, service providers and e-commerce platforms other than manufacturers
- Definition of **Unfair Trade practices** widened to cover online misleading advertisements, practice of not issuing bill/memo, failing to take back defective.



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products within a stipulated period and disclosing personal information of consumer.

- Establishment of **Central Consumer Protection Authority** - a regulatory body that can also conduct inquiry or investigation into consumer rights violations. It can order reimbursement, cancel license, recall products, on complaints or suomoto.
- Enhancement of pecuniary jurisdictions
 - **District forum** - entertain complaints where value of goods/services is less than Rs. 1 crore
 - **State Commission** - entertain complaints where value of goods/services is between Rs. 1 crore - Rs. 10 crore
 - **National Commission** - entertain complaints where value of goods/services is more than Rs. 10 crores
- Filing of complaints can be done with nearby jurisdictional forum (residence of place of work) unlike before (near place of purchase) or even electronically
- Government launched **e-daakhil** portal in 2020 for electronic filing of complaints.

India-Myanmar

❖ Context

- Recently, India gave **1 million doses of COVID-19 vaccines** to Myanmar.
- The doses were handed over by Foreign Secretary Harsh Vardhan Shringla who is on a visit to the country, the **first by any Indian high official** after Myanmar's military deposed the democratically-elected government of Aung San Suu Kyi in a coup on 1st February 2021.
- Also, India has **granted 10,000 tonnes of rice and wheat** to Myanmar as part of its continued **humanitarian support** for the neighbouring country.



❖ Key highlights

- Foreign Secretary emphasised India's interest in seeing **Myanmar's return to democracy** at the earliest and **"release" of political prisoners; resolution of issues through dialogue; and complete cessation of all violence** during his last visit to Myanmar.
- The **1,600 km (990 mi) India-Myanmar border** separates the Indian states of **Mizoram, Manipur, Nagaland and Arunachal Pradesh in Northeast India** from Kachin State, Sagaing Region and Chin State in Myanmar/Burma.
- India - Myanmar/Burmese **relations date to antiquity and cultural exchanges** included Buddhism and the Burmese script, which was based on the Indian Grantha script.
- India and Myanmar also **share a maritime border along India's Andaman Islands**.
- India established **diplomatic relations** after Myanmar's independence from Britain in 1948.
- For many years, Indo-Burmese relations were strong due to Myanmar previously having been a province of India, due to cultural links, flourishing commerce, common interests in regional affairs and the presence of a significant Indian community in Myanmar

❖ Economic Relation

- India is Burma's **4th largest trading partner** after **Thailand, China and Singapore**, and second largest export market after Thailand, absorbing 25 percent of its total exports. India is also the **seventh most important source of Burma's imports**.
- Both governments are proceeding to **enhance cooperation in agriculture, telecommunications, information technology, steel, oil, natural gas, hydrocarbons and food processing**.
- The **bilateral border trade agreement of 1994** provides for border trade to be carried out from three designated border points, one each in Manipur, Mizoram and Nagaland. **Infrastructure initiatives**
- **Tamu- Kalewa- Kalembo highway**- Known as Indo- Myanmar friendship road, Built in 2001 by BRO aimed to provide a major strategic and commercial transport route connecting North- East India, and South Asia as a whole, to Southeast Asia. **India- Myanmar- Thailand Friendship Highway**- 3200KM triangular highway
- **Kaladan Multi-modal Transit Route**- connect the eastern Indian seaport of Kolkata with Sittwe seaport in Myanmar by sea; it will then link Sittwe seaport to Lashio in Myanmar via Kaladan river boat route and then from Lashio on to Mizoram in India by road transport.

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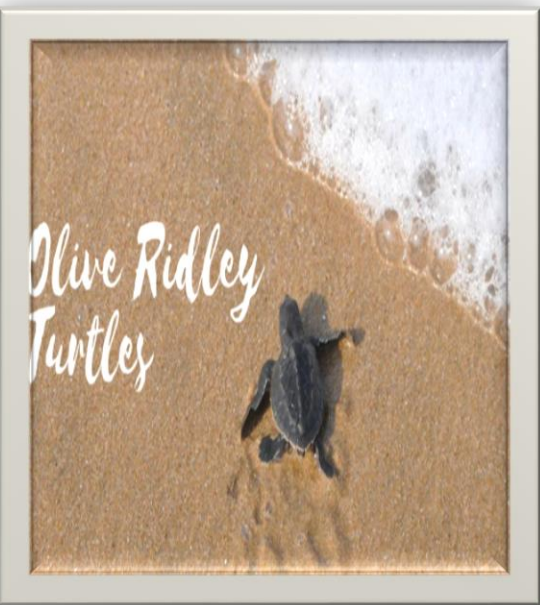
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❖ Strategic Cooperations

- India's move to forge close relations with Myanmar are motivated by a desire to counter **China's growing influence as a regional leader**. Both nations **sought to cooperate to counteract drug trafficking and insurgent groups** operating in the border areas. India and Myanmar are **leading members of BIMSTEC and the Mekong-Ganga Cooperation**, along with Vietnam, Laos, Cambodia and Thailand, helping India develop its influence and ties amongst Southeast Asian nations.
- India has gifted the Myanmar navy its first ever submarine, **a kilo class (INS Sindhuvir) attack submarine** which has been refurbished and modernised by Hindustan Shipyard Limited. **Security ties**: Indian and Myanmar troops carried out jointly **Operation Sunrise and Operation Sunrise 2 in 2019** in their respective territories to destroy several insurgent camps.

News in Between the Lines

Olive Ridleys Sea Turtles



❖ Status

- **Wildlife Protection Act, 1972: Scheduled 1**
- **IUCN Red List: Vulnerable**
- **CITES: Appendix I**

❖ Context

- Scientists have resumed tagging of **Olive Ridley sea turtles** at **Rushikulya rookery along Odisha coast**.
- **1,556 Olive Ridleys tagged** in exercise that began in **Odisha** in January 2021 after nearly 25 years.

❖ Key Highlights

- It would help them **identify the migration path and places visited by the marine reptiles** after congregation and nesting.
- Researchers of the **Zoological Survey of India (ZSI)** are carrying out tagging of Olive Ridley turtles at three mass nesting sites – **Gahirmatha, Devi River mouth and Rushikulya**.
- The metal tags affixed to turtles are **non-corrosive and they do not harm their body**. It can be removed later.
- The target is to tag 30,000 turtles over a period of 10 years.

❖ About Olive Ridleys Sea Turtles

- They are the **smallest and most abundant** of all sea turtles found in the world.
- They are **carnivores** and get their name from their **olive colored carapace**.
- They are best **known for their unique mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs.
- They can be **found in warm waters of the Pacific, Atlantic and Indian oceans** and the **Odisha's Gahirmatha Marine Sanctuary** is known as the world's largest rookery (colony of breeding animals) of sea turtles.

ASIGMA



❖ Context

- The Indian Army has launched its latest messaging application dubbed as **ASIGMA (Army Secure IndiGeneous Messaging Application)**.

❖ Key Highlights

- The new generation web-based messaging application is **entirely in-house** and has been **exclusively developed by the team of officers of the Corps of Signals of the Army**.
- It is being **deployed on the Army's internal network**, as a **replacement of the AWAN (Army Wide Area Network)** messaging application which has been in service for the past 15 years.
- It comes with a **variety of contemporary features including multi-level security, dynamic global address book, message prioritization, and tracking**, and options to meet the requirements of the army at present.

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Meendum Manjappai Scheme



❖ Context

- Recently, **Tamil Nadu** chief minister **M.K. Stalin** launched the ‘**Meendum Manjappai**’ scheme to promote the use of cloth bags by the public and discourage the use of plastic bags.

- The Tamil Nadu government has **already banned 14 types of plastic materials**.

❖ Key Highlights

- **Plastic bags have become rampant** in the State over the years.
- The CM Stated that If the plastic is thrown away, it would **take several years for it to decompose** and **adversely affect the soil**. If the **soil is affected**, agriculture would be affected. Moreover, cattle eat plastics and die. If plastic carry bags are thrown into water bodies, the **organisms there are affected and the water is polluted too**. The **sea is affected when single-use plastic products are thrown into it**. Aquatic species feed on them and die.

❖ About Plastics

- As **plastic is cheap, lightweight and easy to produce**, it has led to a **production boom** over the last century, and the trend is expected to continue in the coming decades, according to the United Nations.
- But **countries are now struggling with managing the amount of plastic waste** they have generated.
- About **60% of plastic waste in India is collected** — that means the remaining 40% or 10,376 tons remain uncollected.

ABHYAS



❖ Context

- DRDO successfully conducted the flight test of **Indigenously developed High-speed Expendable Aerial Target (HEAT)** Abhyas today from Integrated Test Range (ITR), Chandipur off the coast, Odisha

❖ Key Highlights

- Aeronautical Development Establishment (ADE), bengaluru based DRDO laboratory along with other DRDO laboratories has developed this indigenous unmanned aerial target system **to meet the requirement of aerial targets of Indian Armed Forces**.
- The aircraft is controlled from a ground based controller and an indigenously developed **MEMS based Inertial Navigation System** along with the Flight Control Computer which helps it to follow the pre-designated path in a fully autonomous mode.

Star Rating protocol of garbage free cities



❖ Context

- Ministry of Housing & Urban Affairs launched **Azadi@75 Star Rating Protocol of Garbage Free Cities- Toolkit 2022**



❖ Key Highlights

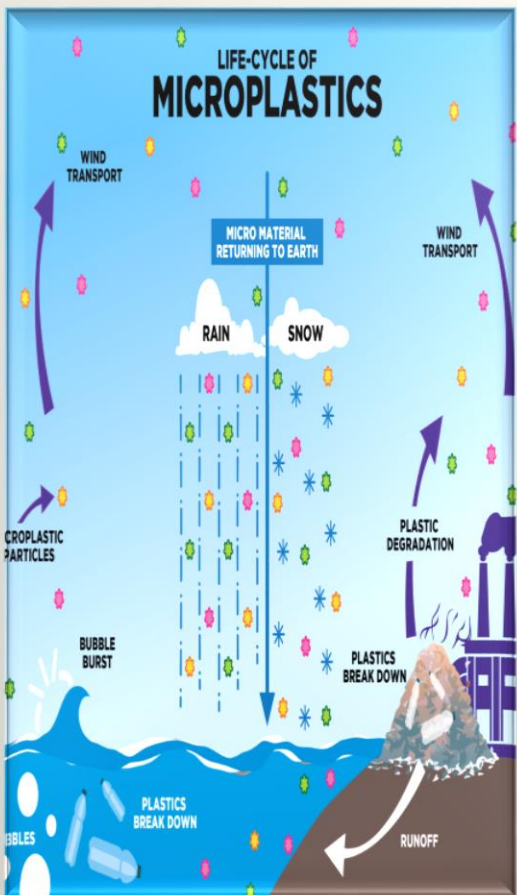
- It is one of the most important governance tool for waste management
- On **1st October 2021**, the Government launched **Swachh Bharat Mission-Urban 2.0**, with the overall vision of creating “**Garbage Free Cities**” (GFC)
- SBM-U 2.0 is focused on achieving 100% waste processing along with remediation of legacy dumpsites, construction and demolition waste and plastic waste management.
- **Release of Government of India funds has been made conditional, subject to a ULB achieving at least 1-star certification**

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Microplastics



In the recently conclude2,238 cities) participated in the certification exercise, of which a total of 299 cities have been certified d certification exercise for GFC, nearly 50% of ULBs (i.e., - 9 cities rated as 5-star, 143 cities rated as 3-star and 147 cities as 1-star.

❖ Context

- Micro-plastics are **fragm** Recently, **microplastic traced to 'clean' air Of European Mountains.**
- The scientists arrived at the conclusion after they reportedly sampled 10,000 cubic meters of air between June and October of 2017 at an altitude of 2,877 meters above sea level.
- This study reveals that **they can even be found high in the Earth's troposphere**, where wind speeds allow them to travel great distances and also there is **no eventual sink** for the plastic.
- Mathematical models of air mass trajectories used by the scientists indicate that the particles **originated in Africa, North America, or the Atlantic Ocean**, which indicates intercontinental atmospheric transport of microplastic.

❖ About Microplastics

- Microplastics are **fragments of any type of plastic less than 5 mm in length.**
- There are two types of microplastics- primary and secondary.
 - **Primary microplastics**- They are already less than 5 mm (0.20 in) in length
 - **Secondary microplastics**- They are reduced in size due to the degradation of larger plastic pieces
- These microplastics **escape into the environment through common sources like plastic nets, plastic bottles, microbeads, nurdles, microwave containers, tea bags and tire wear.**
- It is estimated that **35 percent of all ocean plastic pollution comes from the erosion of polyester, acrylic, or nylon-based clothing**, which often happens as a result of washing.

❖ Impacts

- The microplastics **can also be eaten by wildlife** without killing them immediately due to their small size.
- This allows the deadly plastics to **bio-accumulate in animal species**, which is dangerous for other species that are higher up the food chain, including humans.
- Microplastics also **act as buoys for other hazardous toxins and chemicals** that are polluting the environment.
- These chemicals can then result in **various diseases** and can cause cancer, liver failure and kidney failure.
- They **can also carry deadly bacteria like E. coli** and cholera if they come near contaminated water.

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