

1. Theyyam

Why in News?

- Kerala Tourism department have recently started live streaming of an annual temple festival called Theyyam performances, to promote cultural tourism.

Highlights:

- Theyyam is a popular ritual form of dance worship in Kerala and Karnataka, India.
- It consisted of thousand-year-old traditions, rituals and customs.
- The people consider Theyyam itself as a channel to a god and they thus seek blessings from Theyyam.
- Each Theyyam is a man or a woman who attained divine status by performing heroic deeds or by leading a virtuous life
- Most Theyyams are believed to be the incarnations of Shiva or Shakti (the consort of Shiva). Or they have strong associations with these principal deities of Hinduism.
- There are over 400 theyyams. Some of these are very important.

2. Side-Channel Attacks (SCAs)

Why in News?

- Recently, two Indian researchers have built a low-energy security chip that is designed to prevent Side-Channel Attacks (SCAs) on IoT (Internet of Things) devices.

Highlights:

- IoT is a computing concept that describes the idea of everyday physical objects being connected to the internet and being able to identify themselves to other devices.
- It Is being used to create smart infrastructure in various verticals such as Power, Automotive, Safety & Surveillance, Remote Health Management, Agriculture, Smart Homes and Smart Cities etc, using connected devices.
- Security Chip means the application specific integrated circuit that instantiates the Security Feature after being embedded in the device.
- A SCA Is a security exploit that aims to gather information from or influence the program execution of a system by measuring or exploiting indirect effects of the system or its hardware – rather than targeting the program or its code directly.

- Typically, SCAs aim to extract sensitive information like cryptographic keys, proprietary machine learning models and parameters by measuring things like timing information, power consumption and electromagnetic leaks of a system.
- An SCA may also be referred to as a sidebar attack or an implementation attack.
- It can be applied to any data that you want to keep secret.
- For example, it can be used on your smartwatch to extract your ECG and heart rate signal,”
- Types of SCAs: Timing attack, Electromagnetic (EM) attack, Acoustic, Power, Optical, memory Cache, hardware weaknesses.
- Even though SCAs are difficult to execute on most modern systems, the increasing sophistication of machine learning algorithms, greater computing power of devices and measuring devices with increasing sensitivities are making SCAs more of a reality.

3. Great Barrier Reef

Why in News?

- Recently, a report published by the Intergovernmental Panel on Climate Change (IPCC) states that the Great Barrier Reef is in crisis and suffering grave impacts from climate change.

Highlights:

- The report points to three previous mass bleaching events from 2016 to 2020 that caused significant coral loss, and warns that there has been “mass mortality” of some coral species.
- Great Barrier Reef, world’s largest coral reef complex, located in the Pacific Ocean off north-eastern Australia.
- Warming ocean temperature is causing frequent and severe coral bleaching.
- The worst bleaching event, in 2016, affected over 90% of the reef, and a punishing succession of bleaching incidents has left the northern and middle portion of the reef system in a highly degraded state.
- Even if the Global Community achieves its goal of limiting future warming to 1.5 degrees Celsius since pre-industrial times, that still wouldn’t be sufficient to prevent more frequent mass bleaching events, though it may reduce their occurrence.
- The ocean warming and marine heatwaves will cause the loss and degradation of tropical shallow coral reefs, leading to “widespread destruction” of coral reef ecosystems.

- If bleaching persists, the IPCC estimates 10,000 jobs and AUD1 billion in revenue would be lost every year from declines in tourism alone.
- Around a billion people worldwide rely on coral reefs for their everyday living, which is why a failure to urgently reduce greenhouse gas emissions could have devastating effects for humanity.
- Beyond the reef, climate change will lead to a surge in heat-related deaths in Australia, the extinction of certain animal species, and more wildfires.
- Koalas are at risk of local extinctions due to increasing drought and rising temperatures.
- And rising sea levels and storm surges led to the recent extinction of a rodent species called Bramble Cay melomys, which lived on a remote cay in the northern Great Barrier Reef.
- Black Summer fires of late 2019 and early 2020 that killed at least 33 people and destroyed more than 3,000 homes.
- Even Australia's famed eucalyptus trees, which are naturally resilient to the country's seasonal fires, may not be able to withstand the ferocity and frequency of the predicted blazes, which could lead to the decimation of forests.
- The report also provides extensive lists of climate adaptation strategies, such as improving building standards so that homes stay cooler during potentially deadly heat waves.

4. Humanitarian Corridors

Why in News?

- Russia has recently declared a temporary ceasefire in the Russia-Ukraine War to provide “humanitarian corridors” for civilians.

Highlights:

- As the war enters a likely deadlier phase, numerous civilians attempt to leave the country for safety and refuge, there must be humanitarian measures taken to reduce civilian casualties.
- They are demilitarised zones, in a specific area and for a specific time — and both sides of an armed conflict agree to them.
- The United Nations (UN) considers humanitarian corridors to be one of several possible forms of a temporary pause of armed conflict.
- For example through large-scale bombing of civilian targets — humanitarian corridors can provide Crucial Relief.

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- The corridors are necessary when cities are under siege and the population is cut off from basic food Supplies, Electricity and water.
 - Through these corridors, either food and medical aid can be brought to areas of conflict, or civilians can be evacuated.
 - Access to humanitarian corridors is determined by the parties to the conflict. It's usually limited to neutral actors, the UN or aid organisations such as the Red Cross.
 - They can also be used by UN observers, Non-governmental Organisations (NGOs) and journalists to gain access to contested areas where war Crimes are being Committed.

