

May - 03

TNPSC BITS

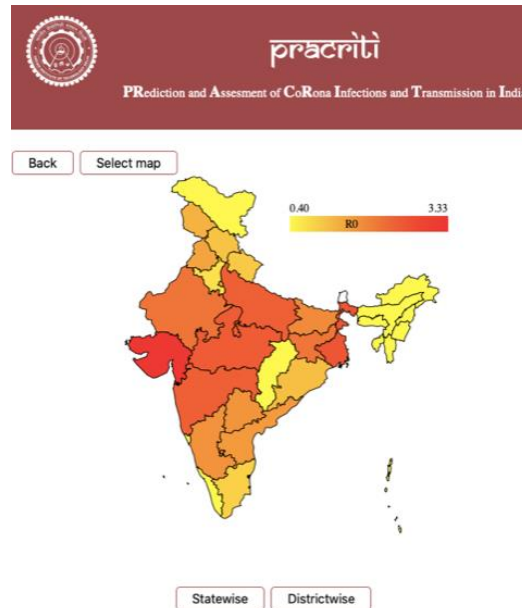
- ❖ The Kerala Government has approved the Ordinance for deferring six days' salary of government teachers and employees for six months.
- ❖ The Supreme Court has ruled that the National Eligibility cum Entrance Test (NEET) for admission to graduate and postgraduate medical and dental courses does not violate the rights of minorities under the Constitution.
 - The ruling came on the petition filed in 2012 by the Christian Medical College, Vellore.
- ❖ Germany classified the organization Hezbollah as a terrorist organization in its soil.
 - The Hezbollah is a Shia Islamist political party that is based in Lebanon.
- ❖ Following the failure of the Boxing Federation of India (BFI) to pay host fee to the International Boxing Association (AIBA), India lost its rights to host the 2021 Men's World Boxing Championship.
 - The tournament will now be hosted by Serbia.
- ❖ Punjab Government announced the extension of curfew till May 17 to handle the spread of COVID-19 pandemic.
- ❖ Suresh N Patel, an eminent banker, has become the new Vigilance Commissioner of the Central Vigilance Commission (CVC).
 - He was administered the oath of the office by Central Vigilance Commissioner, Sanjay Kothari through a video link.
- ❖ Nagaland state government imposed a COVID-19 cess on diesel and petrol, becoming the first state to introduce COVID-19 cess in India.

SCIENCE AND TECHNOLOGY

PRACRITI

- ❖ Researchers from IIT Delhi have developed web-based dashboard to predict the spread of COVID-19 in India.
- ❖ The dashboard has been named PRACRITI-Prediction and Assessment of Corona Infections and Transmissions in India.
- ❖ The dashboard provides basic reproduction number "R naught".
- ❖ R0 is the number of people that the virus spreads to from a single infected person.

- ❖ The dashboard provides R0 value for every district, state based on the data available from the National Disaster Management Authority, Ministry of Health and Family Welfare and World Health Organization.
- ❖ Hence, with the help of R0 value, future predictions of the spread of the disease can be obtained.



Ruhdaar Ventilator

- ❖ A team of engineering students from IIT Bombay, NIT Srinagar have come forward to solve the problem of ventilator requirement.
- ❖ The team has come up with a low-cost ventilator using locally available materials, named Ruhdaar.
- ❖ The ventilator has been designed by taking assistance from the Design Innovation Centre (DIC) at Islamic University of Science & Technology (IUST), J&K.
- ❖ The Centre is an initiative of the Ministry of Human Resource Development, Government of India.



Merger of two Black holes

- ❖ For the first time the scientists of Laser Interferometer Gravitational Wave Laboratory (LIGO) have recently recorded the first merger of black holes that were of unequal mass black holes.
- ❖ The event has been named as GW190412.
- ❖ This observation once again confirms Einstein's theory of general relativity.
- ❖ That theory predicts the existence of higher harmonics, i.e. gravitational waves at two or three times the fundamental frequency.
- ❖ One was some 30 times the mass of the Sun and the other had a mass nearly 8 times the solar mass.
- ❖ Solar Mass is the standard of mass in astronomy that is used to indicate masses of other masses.
- ❖ One solar mass is equal to 2×10^{30} Kg.
- ❖ This is almost five years after the first ever detection of gravitational wave signals by these powerful detectors.
- ❖ The actual merger took place at a distance of 2.5 billion light years away.

About LIGO

- ❖ The Laser Interferometer Gravitational-Wave Observatory (LIGO) is a large-scale physics experiment and observatory.
- ❖ It works to detect cosmic gravitational waves and to develop gravitational-wave observations as an astronomical tool.
- ❖ Two large observatories were built in the United States with the aim of detecting gravitational waves by laser interferometry.
- ❖ A black hole is an object in space that is so dense and has such strong gravity that no matter or light can escape its pull.
- ❖ Because no light can escape, it is black and invisible.





Feluda and Crispr technology

- ❖ It was developed by Scientists at the Council of Scientific & Industrial Research — Institute of Genomics and Integrative Biology (CSIR-IGIB).
- ❖ It is a low-cost, paper-strip test which can detect the new coronavirus within an hour.
- ❖ The test is based on a bacterial immune system protein called Cas9.
- ❖ It uses cutting-edge gene-editing tool Crispr-Cas9 system.
- ❖ CRISPR technology is basically a gene-editing technology.
- ❖ It can be used for the purpose of altering genetic expression or changing the genome of an organism.
- ❖ The technology can be used for targeting specific stretches of an entire genetic code or editing the DNA at particular locations.

Catalyst from Fish

- ❖ The Institute of Nano Science and Technology operating under Department of Science and Technology has launched an environment friendly catalyst for rechargeable metal battery.
- ❖ The Catalyst used is made of fish gills.
- ❖ It is low cost and can be used in energy conversion devices.
- ❖ It will overcome the bottlenecks in storage technologies such as metal-air battery, fuel cell and biofuel.
- ❖ Usually, platinum, a very expensive metal is used as catalyst.

Ozone Layer

- ❖ The C3S (Copernicus Climate Change Service) and CAMS (Copernicus Atmosphere Monitoring Service) confirmed that the hole in the Ozone layer has healed itself.
- ❖ The main reason for the hole to heal by itself is the polar vortex.
- ❖ According to the scientists the closure of the hole is not due to the reduced pollution levels due to COVID-19 lock down.
- ❖ The hole was 1 million square kilometres wide above the Arctic.
- ❖ It was the largest pole that was found in the history of Ozone layer.
- ❖ It was formed due to unusual climatic conditions.



- ❖ The Polar Vortex is a winter phenomenon.
- ❖ The polar vortex has been recorded to be extremely powerful, and temperatures inside it have been very cold.
- ❖ Polar Vortex is cyclonic circular winds that blow in the stratosphere from west to east.
- ❖ Polar Vortex extends from tropopause through the stratosphere and into the mesosphere.
- ❖ When the vortex is strongest, cold air is less-likely to plunge deep into North America or Europe.
- ❖ Ozone layer is found mainly in the upper atmosphere, an area called the stratosphere, between 10 and 50 km from the earth's surface.

