

19th March, 2020

NEWS JUICE

Intelligent Compilation from The Hindu, Indian Express, PIB & others along with News Background

NEWS HEADLINES

1. How the coronavirus (COVID-19) test works
2. Former CJI Ranjan Gogoi defends Rajya Sabha nomination
3. A prediction model for COVID-19
4. Madhya Pradesh political crisis



Attempt Current Affairs Quiz after reading the News Juice

Go to [Prepmate.in](https://www.prepmate.in)



Click on [Get Started](#)



Click on [Daily Quiz](#)

OR

<https://www.prepmate.in/daily-quiz/> 

1. How the coronavirus (COVID-19) test works

Relevant for GS Prelims & Mains Paper III; Science & Technology

How does the PCR test look for the virus in swab samples? How long does it take? How many samples is India testing daily, and can it test more? If it can, why has it not scaled up yet?

What is the diagnostic test for the novel coronavirus that causes COVID-19?

The Indian Council of Medical Research (ICMR) has said designated labs will use the conventional real-time polymerase chain reaction (PCR) test, which is conducted on swab collected from the back of the throat, a liquid sample from the lower respiratory tract, or a simple saliva sample. Such tests are commonly used in Influenza A, Influenza B and H1N1 virus detection.

What is the PCR test?

It uses a technique that creates copies of a segment of DNA. 'Polymerase' refers to the enzymes that make the copies of DNA. The 'chain reaction' is how the DNA fragments are copied, exponentially — one is copied into two, the two are copied into four, and so on. Kary Mullis, the American biochemist who invented the PCR technique, was awarded the Nobel Prize for Chemistry in 1993.

However, SARS-COV-2 is a virus made of RNA, which needs to be converted into DNA. For this, the technique includes a process called reverse transcription. A 'reverse transcriptase' enzyme converts the RNA into DNA. Copies of the DNA are then made and amplified. A fluorescent DNA binding dye called the "probe" shows the presence of the virus. The test also distinguishes SARS-COV-2 from other viruses.

How long does the PCR process take?

Real-time PCRs have brought down the time taken to test samples to 4.5 hours from around 6 hours earlier. However, the overall turnaround time —from the time the samples are collected to when the report is delivered — is around 24 hours.

How is the test being done in India?

India currently conducts a two-stage real-time PCR to test for SARS-COV-2. The first stage is designed to detect genetic elements common to human coronaviruses that may exist in the sample. The second stage is designed to test for specific genes present only in the SARS-COV-2 virus.

Until the beginning of March, the initial screening test to check for any type of coronavirus was done by all labs, but the confirmatory PCR was only done by the National Institute of Virology in Pune. Then, NIV Pune transferred the technology (reagents required for the confirmation) to all labs so that there would be no need for a sample to go all the way to Pune. This has cut down on the time taken to test the samples.

Is India testing enough numbers?

India has the capacity to test 10,000 samples daily, and is currently testing around 600-700. By comparison, South Korea, which has a similar turnaround time, is reportedly testing up to 20,000 samples a day, especially using models like its drive-through testing facilities.

What will be the strategy if community transmission happens?

ICMR is conducting a surveillance for any evidence of community transmission, with each of India's 52 testing labs testing 20 random samples of patients with Severe Acute Respiratory Infection (SARI). The 'first cut' of these tests are expected to be out on Wednesday. ICMR has said that, in the event that a case of community transmission is unearthed from these surveillance tests, the government's strategies will be "completely different".

Are there barriers to scaling up testing?

Cost is a potential barrier, feel some experts. ICMR officials had said in a conference that the cost of a primary test for COVID-19 is Rs 1,500. If a second test is to be done to confirm the results of the first test, the total cost is around Rs 5,000. One of the officials had also said that the probes used, which are imported from Germany, are a "limiting" factor. While the number of testing centres has been increased, the imports of probes have also shot up.

Source: The Indian Express

2. Former CJI Ranjan Gogoi defends Rajya Sabha nomination

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Former Supreme Court Chief Justice Ranjan Gogoi justified his nomination to the Rajya Sabha but declined to elaborate the reasons that made him weigh and accept the offer.

President Ram Nath Kovind had named Mr. Gogoi for one of the 12 Rajya Sabha seats to which members are nominated.

Other members from Rajya Sabha

Mr. Gogoi is the second person from Assam after educationist Mrinal Miri to be nominated to the Rajya Sabha. Two others from the northeast — academician B.B. Dutta from Meghalaya and boxer M.C. Mary Kom from Manipur — have also been nominated.

CJI delivered government favouring judgements

The former CJI, who supervised the exercise to update the National Register of Citizens in Assam and delivered the judgment in the Ram Janmabhoomi-Babri Masjid dispute, had earlier in the day told a local media group that the need for the legislature and judiciary to "meet at one point of time" made him accept the RS nomination.

Source: The Hindu

3. A prediction model for COVID-19

Relevant for GS Prelims & Mains Paper III; Science & Technology

While it is impossible to estimate the eventual number of cases for the novel coronavirus, there was an exercise carried out earlier this year, aimed at projecting the numbers for Wuhan in China. In a recent article on Cell Discovery in Nature, a group of Chinese scientists attempted to estimate the eventual number of infections and deaths due to the disease (COVID-19) in Wuhan. An infectious disease dynamics model called SEIR (Susceptible-Exposed-Infectious-Resistant) was used to model and predict the number of COVID-19 cases. The SEIR model proved to be predictive for a variety of acute infectious diseases like Ebola and SARS.

What is SEIR model?

The model classifies the population into four mutually exclusive groups: susceptible (at risk of contracting the disease), exposed (infected but not yet infectious), infectious (capable of transmitting the disease), and removed (those who recover or die from the disease). A susceptible individual can become exposed only through contact with some infectious person. Susceptible individuals first enter the exposed stage, during which they may have a low level of infectivity; they become infectious thereafter.

The infection rate represents the probability of transmission from an infectious person to a susceptible one. The incubation rate (the reciprocal of the average duration of incubation) is the rate at which latent individuals become infectious; and the removal rate is the reciprocal of the average duration of infection. The basic reproduction number (BRN) is the expected number of cases directly generated by one case. A BRN greater than one indicates that the outbreak is self-sustaining, while a BRN less than one indicates that the number of new cases decreases over time and eventually the outbreak will stop. Ideally, the BRN should be reduced in order to slow down an epidemic.

The numbers for Wuhan

Using Wuhan's data, more than a dozen published studies provide the estimates of parameters. The mean incubation period is around 5.2 days in most of the studies. Also, the average hospitalisation period is calculated to be 12.39 ± 4.77 days.

The prediction for Wuhan was done in four phases: a) December 1-January 23; b) January 24-February 2; c) February 3-15; d) thereafter. On January 23, airplanes, trains, and other public transportation within the city were restricted and other prevention and control measures such as quarantine and isolation were gradually established in Wuhan. Phase II continued up to the extended spring festival holiday. More medical resources were provided from February 3. It is assumed that the prevention and control measures were sufficient and effective from February 16.

The decreasing BRN rates

In Wuhan, home to 11 million people, the initial number of cases was 40, estimated by a group of researchers led by Natsuko Imai of Imperial College. The number of exposed was assumed to be 20 times this number. The BRN in the first three phases was estimated to be 3.1, 2.6, and 1.9, respectively. In the Cell Discovery article, the BRN is assumed to have decreased to 0.9 or 0.5 in phase IV, based on previous experience in SARS. According to an article in Science in 2003, the BRN of SARS decreased from 2.7 to 0.25 after the patients were isolated and the infection started being controlled.

Following the model, the number of cases in Wuhan reached 17,656-25,875 in phase I, to 32,061-46,905 in phase II, and to 53,070-77,390 in phase III. The epidemic peaked on February 23rd or February 19th with 58,077-84,520 or 55,869-81,393 infections, according to the BRN value of 0.9 and 0.5, respectively. In reality, the number of daily cases in Wuhan has been reducing remarkably since February 16.

The BRN value for India is unknown due to inadequate data so far. However, it can be kept small by isolating patients and controlling infection by extensive checking at airports and other important places. With 110 'active' cases as on March 16, a BRN value of 0.5 might not be alarming. Let's hope that it will remain so.

Source: The Hindu

4. Madhya Pradesh political crisis

Relevant for GS Prelims & Mains Paper II; Polity & Governance

Propriety and law require the Kamal Nath-led Congress government in Madhya Pradesh to prove its majority on the floor of the legislature at the earliest. Delaying tactics by Mr. Nath with more than a little help from the Speaker, who has adjourned the Assembly until March 26, go against democratic principles.

Equally, Governor Lalji Tandon's position that the government will be presumed to have lost the majority unless it takes a floor test immediately is untenable.

The situation in the State raises other questions of morality and legality also, as the Bharatiya Janata Party (BJP) innovates questionable routes to power that it did not win in the election.

What has happened in MP?

The Congress had won a narrow victory in the State in 2018, after a 15-year gap. The resignation of 22 party MLAs has pushed its government into a crisis. These MLAs had won against BJP candidates. Their resignations, and the defection of Jyotiraditya Scindia from the Congress to the BJP, can be explained only as a high form of perfidy and shameless personal greed.

That said, it is curious that the Speaker accepted the resignations of six MLAs while keeping the other 16 pending. The Speaker is expected to be non partisan. That he has found a rather ingenious excuse, the pandemic, makes the scene a bit complicated, but not defensible.

Supreme Court judgement in similar cases

The BJP, the Congress and the rebel MLAs have all approached the Supreme Court which has taken up the matter with urgency. The BJP is replaying the script that it has perfected in other States, most notably in Karnataka last year to unseat the Congress-JD(S) government. The Court ruling during the Karnataka crisis was that a time-frame for deciding on resignations by MLAs could not be forced on the Speaker. The Court also ruled that MLAs could not be forced to attend the Assembly session by being issued a whip by the party they belonged to, weakening the lynchpin of the Anti-Defection law.

The Congress has alleged that the 16 MLAs are under duress and in detention by the BJP. While the judiciary will force some solution to end the current impasse, the larger question facing democracy is that of trust and transparency. Assemblies are elected for a five-year term, and the Anti-Defection law was brought to raise the threshold and stop the dismantling of a popular mandate through opportunistic manoeuvres, as it is unfolding in Madhya Pradesh. Engineered resignations of lawmakers have become a new tool for sabotaging mandates and camouflaging defections. When the top court adjudicates on the Madhya Pradesh petitions, this larger point must be taken into consideration. The situation demands new guidelines by the Court to deal with the now-familiar malaise, beyond setting a reasonably quick deadline for a floor test.

Source: The Hindu

Take the Current Affairs Quiz based on the above News Articles by clicking on the link <https://www.prepmate.in/daily-quiz/>

PrepMate - Cengage UPSC Book Series



KEY FEATURES OF THE BOOK SERIES

Complete subject in a single book 

Use of Flow Charts, Maps & Diagrams to explain the concepts 

Chapter-wise Practice Questions 

Chapter-wise Past Prelims Questions 

A thorough & Practical Approach to write Mains answers 

Solutions for UPSC Mains from authors 

Repository of Videos along with Books 