
1. PM-CARES Fund

Why in the News?

- The government has set up the Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM-CARES Fund) to deal with any kind of emergency or distress situation like posed by the COVID-19 Pandemic.

PM-CARES Fund Highlights:

- The Fund is a public charitable trust with the Prime Minister as its Chairman.
- Other Members of the trust include Defence Minister, Home Minister and Finance Minister.
- The Fund enables micro-donations as a result of which a large number of people will be able to contribute with the smallest of denominations.
- The Fund will strengthen disaster management capacities, encourage research on protecting citizens and aims to provide relief to the affected.
- Contribution to PM - CARES Fund will Qualify as CSR Expenditure.
- Under the Companies Act, 2013, companies with a minimum net worth of Rs 500 crore or turnover of Rs 1,000 crore, or net profit of Rs 5 crore are required to spend at least.
- Donations to this fund will be exempted from income tax under section 80(G)

2. Gond Tribals

Context:

- Recently, Gond tribal people living in Panna, Madhya Pradesh have devised their own way to make masks to fight coronavirus.
- Tribal people are making masks with medicinal leaves and following traditional ways to prevent the spread of the coronavirus.

About Gond Tribe:

- They are one of the largest tribal groups in the world.
- They mostly live in Madhya Pradesh, Chhattisgarh, Maharashtra, Andhra Pradesh, Gujarat, Jharkhand, Karnataka, Telangana, Uttar Pradesh, West Bengal and Odisha.
- They are subdivided into four tribes, Raj Gonds, Madia Gonds, Dhurve Gonds and Khatulwar Gonds.
- Their staple food is two kinds of millet, which is kodo and kutki. Rice is mostly consumed during festival feasts.

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- They majorly speak Gondi which is an unwritten language of the Dravidian family. They have been notified as a Scheduled Tribe.

3. Red Flag- US

Why in News?

- The U.S. Air Force has recently cancelled the Phase-I of Red Flag 20-1 due to the COVID-19 outbreak.

Highlights:

- Red Flag Alaska 20-1 was scheduled to be held in Alaska from 30th April to 15th May, 2020. It is USA's flagship multilateral air exercise
- It is a Pacific Air Forces-sponsored exercise meant to provide realistic training in a simulated combat environment over the Joint Pacific Alaska range complex.
- It has been cancelled owing to the travel restrictions imposed by the U.S. Department of Defence.
- The Indian Air Force (IAF) was also to take part in the exercise. The IAF joined Red Flag for the first time in 2008 in Nevada.
- It has deployed Su-30MKI, Jaguar strike aircraft, the Il-78 tankers and the C-17 strategic airlift aircraft in the exercise.

4. VIX (Volatility Index)

Context:

- VIX (Volatility index) is recently seen in news.

About VIX:

- It is an index used to measure the near term volatility expectations of the markets.
- It signifies the rate and magnitude of change in the stock price or index value.
- Its movement reflects the overall market volatility expectations over the next 30 days.
- It is also known as 'fear gauge' or 'fear index'. It was first created by the Chicago Board Options Exchange (CBOE) and introduced in 1993 based on the prices of S&P 500 index.

About India VIX:

- It was launched by National Stock Exchange (NSE) in 2010 and is based on the computation methodology of CBOE though amended to align with the Indian markets.

- It indicates the Indian market's volatility from the investor's perception.
- Its volatility and the value moves parallel. i.e. a spike in the VIX value means the market is expecting higher volatility in the near future and vice versa.
- It also has a strong negative correlation with Nifty. i.e every time India VIX falls, Nifty rises and when India VIX rises, Nifty falls.
- Its value is among the important parameters that are taken into account for pricing of options contracts, which are one of the most popular derivative instruments.
- National Stock Exchange of India Ltd. (NSE) is the leading stock exchange of India, located in Mumbai. It was established in 1992 as the first dematerialized electronic exchange in the country.

5. Business Immunity Platform

Context:

- Recently, the Invest India has launched The Invest India Business Immunity Platform.

About Business Immunity Platform:

- It is designed as a comprehensive resource to help businesses and investors get real-time updates on India's active response to COVID-19 (Coronavirus).
- It is dynamic and constantly updating platform keeps a regular track on developments with respect to the virus, provides latest information on various central and state government initiatives, gives access to special provisions, and answers and resolves queries through emails and on WhatsApp.
- It is the active platform for business issue redressal, operating 24/7, with a team of dedicated sector experts and responding to queries at the earliest.

About Invest India:

- It is the National Investment Promotion and Facilitation Agency of India.
- It was set up as a non-profit venture under the aegis of Department of Industrial Policy & Promotion, Ministry of Commerce and Industry, Government of India.
- It is operationalized in early 2010, which is set up as a joint venture company between the Department of Industrial Policy & Promotion (DIPP) (now renamed as Department for Promotion of Industry and Internal Trade (DPIIT)), Ministry of Commerce & Industry (35% equity), Federation of Indian Chambers of Commerce and Industry (FICCI) (51% equity), and State Governments of India (0.5% each).

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- It focuses on sector-specific investor targeting and development of new partnerships to enable sustainable investments in India.
 - It facilitates and empowers all investors under the 'Make in India' initiative to establish, operate and expand their businesses in India.
 - It partners with substantial investment promotion agencies and multilateral organizations and also actively works with several Indian states to build capacity as well as bring in global best practices in investment targeting, promotion and facilitation areas.

6. Population Size Shapes Evolution Pattern in E-coli

Why in News?

- Studying cultures of E. coli bacteria, a group of evolutionary biologists from Indian Institute of Science Education and Research (IISER), Pune, has found that the population size determines the kind of fitness trade-offs the microbes adopt.

Highlights:

- Escherichia coli, also known as E. coli, is a Gram-negative, facultative anaerobic, rod-shaped, coliform bacterium of the genus Escherichia that is commonly found in the lower intestine of warm-blooded organisms.
- Fitness trade-off may be understood in the following manner: Organisms do not have the capacity to maximise all their functions at the same time.
- Often when they enhance one function, another function suffers, or when they adapt to survive well in one environment, they cannot survive or reproduce well in another environments. This is called a fitness trade-off.
- This concept has been used by evolutionary biologists to explain why species prefer one environment to another. There are several ways in which the concept of fitness trade-off originates. Evolution causes some organisms to be generalists, by which it is meant that they can survive in different environments, and basically they will have an tolerable level of fitness in all environments. The other option is they evolve into specialists, where the organism will have a high degree of fitness in a particular environment while having low fitness in other environments.
- An example of this is in the context of antibiotic resistance – generalists tolerate a wide range of distinct antibiotics (for example, multidrug resistant bacteria). On the other hand, specialist bacteria have to show a fitness trade-off.

- They resist one antibiotic (for instance, rifampicin) but become susceptible to another (for instance, tetracycline).
- The study experimentally affirms the link between population size and evolution of fitness trade-offs. Owing to their higher extent of specialisation, larger populations can become more vulnerable to sudden changes in the environment.
- If the environment abruptly shifts between two states that show fitness trade-offs with each other, then populations with a history of evolution at larger numbers would be at a greater disadvantage than historically smaller populations.
- For example, costs of antimicrobial resistance are expected to check the spread of resistant microbes if antimicrobials are removed abruptly from the environments. Moreover, pathogens are also expected to experience fitness trade-offs when they migrate across different hosts.

7. Can COVID-19 Relapse in Patients?

Why in News?

- In the last few days, there have been reports of recovered COVID-19 patients testing positive a second time. Since the exact behaviour of the novel coronavirus is still being studied, immunity against it is not fully understood.

Highlights:

- Previous coronavirus outbreaks have been inconsistent: a study on the coronavirus that caused MERS revealed that patients are unlikely to get re-infected within a short duration of the original infection; but, after the SARS outbreak, cases of relapse that were reported.
- Various factors can cause relapse in patients recovered from COVID-19. SARS-CoV-2, the virus that causes COVID-19, is like viruses that cause any other flu. There is always a probability of mutation as in the case of influenza viruses.
- The mutation, theoretically, can make an individual vulnerable to reacquire the COVID-19 infection. Patients who test positive for COVID-19 develop protective antibodies. Theoretically, there can be a relapse even in patients who have antibodies.
- At this stage, it is not fully understood as to how long the antibodies provide protection against the viral infection.
- Also, in the absence of any vaccination, it is not known whether the immunity acquired by the persons is permanent. Another scenario that can lead to relapse is when immunity is

compromised, if the patients have underlying conditions and if they are dependent on immunosuppression drugs.

- Experts also have pointed out that a “false negative” RTPCR test, the RNA test being conducted to diagnose COVID-19 infection, can lead to a patient testing positive a second time after testing negative in between. There have reports from Spain about imported RNA test kits giving inaccurate results.

8. NASA’s Mission to study giant Solar Particle Storms

Why in News?

- NASA has selected a new mission to study how the Sun generates and releases giant space weather storms, known as solar particle storms, into planetary space. Previous coronavirus outbreaks have been inconsistent: a study on the coronavirus that caused MERS revealed that patients are unlikely to get re-infected within a short duration of the original infection; but, after the SARS outbreak, cases of relapse that were reported.
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9. 'Rapid Test' to Identify COVID-19 Exposure

Why in News?

- To tackle suspicions of whether the novel coronavirus has spread into the community and if not prevent such a scenario, the Kerala government has announced 'rapid tests' that will ensure speedy results within half an hour.

Highlights:

- Over the last five days, Kerala's health department reported 93 positive cases of novel coronavirus, taking the total number of infected to 202 since February and heightening fears of community transmission of the virus in the state.
- The government has received approval of the Indian Council of Medical Research (ICMR) in this regard. The health department, in a statement released late Sunday, said the testing will be done using kits approved by ICMR and National Institute of Virology, Pune.
- A rapid test is conducted to determine whether there has been any kind of recent viral infection in a person's body. When a pathogen enters a human body, specific antibodies are released as a response to the virus.
- A rapid test can detect the presence of such antibodies in blood, serum or plasma samples quickly, indicating a viral infection. Rapid testing is conducted usually to check for community transmission of a virus during an epidemic.
- Even though a rapid test can be extremely helpful to check for community transmission during a global pandemic such as this, it is not a confirmatory test for SARS-CoV-2 that causes the coronavirus infection. Positive test indicates exposure to SARS-CoV-2. Negative test does not rule out Covid-19 infection.
- The person still has to be subjected to the polymerase chain reaction (PCR) test for confirmation of the SARS-CoV-2 virus. A rapid test comes positive after 7-10 days of viral infection and remains positive for several weeks after that.
- Those with a history of recent foreign travel, people who may have had contact with foreign returnees, health workers who maintain close contact with Covid-19 patients, residents of a region reporting higher-than-usual cases of respiratory illness and those
- who have recovered from such respiratory illnesses can undergo rapid tests.