Prelim Bits 19-07-2021 | UPSC Daily Current Affairs

NBDriver

- IIT Madras has developed an AI tool called NBDriver (neighbourhood driver) for use in analysing cancer-causing mutations in cells.
- NBDriver can look at harmful "driver" mutations and **distinguish** them from neutral "passenger" mutations that do not have any effect on the progression of the disease.
- This distinguishing between driver and passenger mutations is done based on the concept that the nature of the mutation depends on the neighbourhood (or context) of a mutation in the genome.
- **Model** - Robust statistical modelling is used to show that there is a significant difference in the pattern of sequences (or context) surrounding the driver and passenger mutations.
- A dataset containing 5,265 mutations was studied to derive the model.
- **Accuracy** - NBDriver had an overall accuracy of 89% and ranked second out of 11 prediction algorithms. In comparison, the top performing tool (FATHMM) had 91% accuracy on the same dataset.
- **Significance** - NBDriver database will enable cancer researchers with limited computational or programming skills to get predictions and extract genomic information on their preferred set of mutations.

COVID-19 Vaccination for Pregnant Women

- The Government of India made a recommendation for the vaccination of pregnant women. A key area of concern for pregnant women is safety.
- Most SARS-CoV-2 infections in the pregnant women are asymptomatic or mild, but, particularly during the third trimester, there may be severe complications.
- These complications are due to the fact that during pregnancy, there are changes in the immune system function so as to stop the mother's body from rejecting the baby, but increase her vulnerability to viral infections.
- While likely to be rare, it is possible that infection with SARS-CoV2 and also the antibodies can be passed from mother to baby.
- **Vaccine type** - For vaccines that have or could be used in pregnant women, the recommendations are clearly in favour of use of inactivated vaccines or non-live vaccines or their equivalent.

- **Studies** - Based on a series of studies,
  - The US Centers for Disease Control and Prevention (CDC) listed pregnancy as one of the risk factors for severe disease,
  - The World Health Organization revised its recommendation for vaccination to include pregnant women in Category II to be prioritised for vaccination, along with other co-morbidities.
- **Timing of vaccination** - Most malformations and most pregnancy losses occur in the first trimester.
- So, to avoid any future attribution of congenital anomalies or abortions to the vaccine, vaccination might be considered later in pregnancy.

Dogecoin

- The co-founder of Dogecoin, has called the cryptocurrency industry a right-wing, hyper-capitalistic technology built to amplify the wealth of the rich by extracting money from the financially desperate and naive.
- **Origin** - The meme-inspired Dogecoin is a Cryptocurrency was created in 2013 by software engineers as a faster but "fun" alternative to Bitcoin.
- It takes its name and logo from a Shiba Inu meme that was viral several years ago.
- **Difference** - Unlike Bitcoins, whose maximum possible number is fixed at 21 million (a figure that is estimated to be reached by 2040), Dogecoin numbers do not have an upper limit.

Chief Labour Commissioner

- Recently, Chief Labour Commissioner of India reviewed the status of sensitization and implementation of labour laws in labour codes in various developmental projects in Srinagar.
- The organization of the Chief Labour Commissioner (Central) is also known as Central Industrial Relations Machinery.
- It is an apex organization responsible for maintaining harmonious industrial relations mainly in the sphere of central Government.
- In pursuance of the recommendation of the Royal Commission on Labour in India, the organization was set up in April, 1945 by combining,
  1. The former organizations of the conciliation Officer (Railways),
  2. The Supervisor of Railway Labour and
  3. The Labour Welfare Advisor.
- **Duties** - It was then charged mainly with duties of
  - Prevention and settlement of industrial disputes,
  - Enforcement of labour laws and
  - Promotion of welfare of workers in the industrial establishments falling

within the sphere of the Central Government.

Anti-Trafficking Bill, 2021

- The Ministry of Women and Child Development placed the Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021, in the public domain to get stakeholders' comments.
- **Investigating and coordinating agency** - The Bill empowers the National Investigation Agency (NIA) to carry out investigation and prosecution in cases of trafficking, including child-trafficking.
- **Definition** - The Bill does away with the provision that a victim necessarily needs to be transported from one place to another to be defined as a victim.
- It extends beyond the protection of women and children as victims to now include transgenders as well as any person who may be a victim of trafficking.
- It defines 'Exploitation' of the prostitution or other forms of sexual exploitation, any act of physical exploitation, forced labour or services, slavery or practices similar to slavery, servitude or forced removal of organs, illegal clinical drug trials or illegal bio-medical research.
- Offenders will also include defence personnel and government servants, doctors and paramedical staff or anyone in a position of authority.
- **Categorisation** - The Bill categorises offences into trafficking and aggravated forms of trafficking, with
    - The trafficking carrying a maximum punishment of 10 years in jail and fine of Rs.1 lakh and
    - The aggravated forms of trafficking carrying death penalty and fine of upto Rs.30 lakh.
- It expects a tribal or a dalit migrant worker to take on his employer.
- **Sex Workers** - The Bill equates sex work with sexual exploitation, and it renders the consent of a sex worker immaterial in the determination of whether she was trafficked or practising sex work of her own volition.
- **Rehabilitation** - The Bill says that there is no need for the consent while rescuing, rehabilitating or repatriating a person.
- It provides for an institution-based rehabilitation instead of family and community based rehabilitation.
- **Applicability** - It extends to all citizens inside as well as outside India,
    - Persons on any ship or aircraft registered in India wherever it may be or carrying Indian citizens wherever they may be,
    - A foreigner or a stateless person who has his or her residence in India at the time of commission of offence under this Act, and
- It will apply to every offence of trafficking in persons with cross-border implications.

- **National Anti-Human Trafficking Committee** - This Committee will be established by the Centre for ensuring overall effective implementation of the provisions of this law.
- It will have representation from various ministries with the Home Secretary as the chairperson and secretary of the women and child development ministry as co-chair.
- State and district-level anti-human trafficking committees will also be constituted.

Moon Wobble

- According to a study, the Wobble phenomenon of the Moon is expected to lead to more flooding on Earth in the middle of the next decade.
- **Moon Wobble** is a regular oscillation that humans have known about for centuries.
- It is one of many factors that can either exacerbate rising sea levels or counteract them, alongside other variables like weather and geography.
- There's nothing new or dangerous about the wobble; it was first reported in 1728.
- **Findings of the Study** - Rising temperatures caused by greenhouse gas emissions, along with the push and pull at ocean levels are the causes of higher flood risks.
- The study warned that the moon wobble is expected to heighten high tides in the middle of the 2030s, but it also showed that this prediction does not apply uniformly to every coastline everywhere.
- **Effect of wobble** - Other variables aside, the effect of the wobble could cause high tide levels at a beach to oscillate by 1 or 2 inches over the course of its long cycle. It just kind of raises the baseline.
- The more your baseline is raised, the smaller weather event you need to cause a flooding event.

Source: PIB, The Hindu, The Indian Express

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