



## **C.A Dated On 22-07-2019**

### **GS-2**

#### **RTI Act Amendments:**

On Friday, the government introduced in Lok Sabha the Right to Information (Amendment) Bill, 2019, which proposes to give the Centre the powers to set the salaries and service conditions of Information Commissioners at central as well as state levels. The government's move triggered protests from the Opposition.

#### **What has changed?**

- The Bill amends Sections 13 and 16 of the Right to Information (RTI) Act, 2005. Section 13 of the original Act sets the term of the central Chief Information Commissioner and Information Commissioners at five years (or until the age of 65, whichever is earlier).
- The amendment proposes that the appointment will be "for such term as may be prescribed by the Central Government".
- Again, Section 13 states that salaries, allowances and other terms of service of "the Chief Information Commissioner shall be the same as that of the Chief Election Commissioner", and those of an Information Commissioner "shall be the same as that of an Election Commissioner".
- The amendment proposes that the salaries, allowances and other terms of service of the Chief Information Commissioner and the Information Commissioners "shall be such as may be prescribed by the Central Government".

#### **Why are Opposition parties protesting?**

- The original Act had quantified the tenures, and defined the salaries in terms of existing benchmarks.
- The amendments are being viewed as implying that, in effect, the terms of appointment, salaries and tenures of the Chief Information Commissioners and Information Commissioners can be decided on a case-to-case basis by the government.
- The Opposition has argued that this will take away the independence of the RTI authorities.

#### **What are the government's stated grounds for bringing the amendments?**



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- The statement of objects says “the mandate of Election Commission of India and Central and State Information Commissions are different.
- Hence, their status and service conditions need to be rationalised accordingly”.
- The Central Information Commissioner has been given the status of a Supreme Court judge but his judgments can be challenged in the High Courts. How can that exist? Besides, the RTI Act did not give the government rule-making powers.

### **Over the last 14 years, how far has the RTI Act served the purposes for which it was introduced?**

- The RTI Act is regarded as one of the most successful laws of independent India. It has given ordinary citizens the confidence and the right to ask questions of government authorities.
- According to estimates, nearly 60 lakh applications are being filed every year. It is used by citizens as well as the media.
- The law is seen as having acted as a deterrent for government servants against taking arbitrary decisions.

### **Juvenile Justice act**

#### **Why in news?**

The Act defines a child as someone who is under age 18. For a CCL, age on the date of the offence is the basis for determining whether he or she was a child or an adult.

In 2016, a 17-year-old was booked for the murder of his three-year-old neighbour in Mumbai. The Mumbai city Juvenile Justice Board as well as a children’s court directed that he be tried as an adult under the Juvenile Justice (Care and Protection) Act, 2015. Last week, the Bombay High Court set aside these orders and directed that the accused be tried as a minor, saying the Act is reformatory and not retributive.



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### **When is a child tried as an adult?**

- The Juvenile Justice Act of 2000 was amended in 2015 with a provision allowing for Children in Conflict with Law (CCL) to be tried as adults under certain circumstances. The Act defines a child as someone who is under age 18. For a CCL, age on the date of the offence is the basis for determining whether he or she was a child or an adult.
- The amended Act distinguishes children in the age group 16-18 as a category which can be tried as adults if they are alleged to have committed a heinous offence — one that attracts a minimum punishment of seven years.
- The Act does not, however, make it mandatory for all children in this age group to be tried as adults.

### **Why was this distinction made?**

- The amendment was proposed by the Ministry of Women and Child Development in 2014. This was in the backdrop of the gang-rape of a woman inside a bus in Delhi in 2012, leading to her death. One of the offenders was a 17-year-old, which led to the Ministry proposing the amendment (although it could not have retrospectively applied to him).
- The J S Verma Committee constituted to recommend amendments also stated that it was not inclined to reduce the age of a juvenile from 18 to 16. The amendment was made in 2015.

### **Criterion for trying as an adult**

- As per Section 15 of the JJ Act, there are three criteria that the Juvenile Justice Board in the concerned district should consider while conducting a preliminary assessment to determine whether the child should be tried as an adult or under the juvenile justice system, which prescribes a maximum term of three years in a special home.



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- The criteria are whether the child has the mental and physical capacity to commit such an offence; whether the child has the ability to understand its consequences; and the circumstances in which the offence was committed.
- If the Board finds that the child can be tried as an adult, the case is transferred to a designated children's court, which again decides whether the Board's decision is correct.

One of the court's key observations was that "essentially, the trial in the regular court is offence-oriented; in the juvenile court, it is offender-oriented.

In other words, in the children's court, societal safety and the child's future are balanced. For an adult offender, prison is the default opinion; for a juvenile it is the last resort".

### **GS-3**

#### **Artemis programme**

##### **Why in news?**

NASA marked the 50th anniversary of the historic first Moon landing, the U.S. space agency is preparing to take its next giant leap with the ambitious Artemis programme that could see the "first woman and the next man" walk on the lunar surface.

##### **About the mission**

- Artemis is named after the twin sister of Apollo who is also the Goddess of the Moon and the hunt.
- NASA said the mission "encompasses all of our efforts to return humans to the Moon -- which will prepare us and propel us on to Mars."
- The programme to return astronauts to the lunar surface is planned to launch by 2024, according to the U.S. space agency.



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- “Through the Artemis programme, we will see the first woman and the next man walk on the surface of the Moon.
- As the ‘torch bringer,’ literally and figuratively, “Artemis will light our way to Mars,” NASA said in a statement.

### **Objective**

With the mission, NASA plans to explore regions of the Moon never visited before, unlock mysteries of the universe and test the technology that will extend the bounds of humanity farther into the Solar System.

### **Blockchain and crypto currency**

#### **Context**

What is the potential of this foundational technology and how much can be tapped? What are the hurdles?

The story so far:

For a little over a decade, the term blockchain has been flitting in and out of news cycles, especially in connection with bitcoin, the digital cryptocurrency.

The Reserve Bank of India has banned speculation and investment in cryptocurrencies. Of late, however, blockchain is seeing a revival, and companies are looking at how to use the tremendous potential of the technology that underpins the cryptocurrency.

#### **What is blockchain?**

- It is a foundational technology or a platform that allows designing a secure way to record transactions and circulate it among signatories, or any kind of target group with an Internet connection. At its core it is an extremely democratic ledger that cannot be arbitrarily manipulated and easily shareable.
- Blockchain’s appeal is that it achieves this without a central authority.



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- While cryptocurrencies have a bad reputation, Silicon Valley tech giants and investment banks are trying to salvage the underlying promise of blockchain and use it for other collaborations.

### **How does blockchain work?**

- Every block in a blockchain is a record of transactions and the more of the latter, the longer the chain.
- Just as worthless paper transforms into valuable currency with the signature of the RBI governor, blocks are great because they provide an unalterable document of the history of every transaction.
- In the context of currency, it stores the place, time, value (rupee, for example) and location of a purchase. There is minimal identifying information and every block is linked to a unique 'digital signature' of the transacting participants.
- Every block is distinguished from another through a unique code which is a string of numbers.
  
- In the case of bitcoin, the computers are rewarded with bitcoin.
- This is stored in digital wallets and may be used like money provided there are sellers of real world goods who would accept bitcoins. Nowadays, they are frequently traded as another speculative, volatile asset.

### **What real world problem does blockchain solve?**

- As of today nothing, but blockchain backers say it solves the problem of 'trust'.
- Because the major cost of any transaction or exchange of services or goods is the act of verification — VISA charges fees to ensure that your card swipe is connected to your account or a property charges you for the effort of ensuring that you are entering into a genuine transaction — blockchain asks you to trust the energy-intensive nature of mathematical problems and have them masquerade them as 'locks' to secure your money, confidential documents or any kind of information.

### **Where can it be used?**



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- Facebook this year announced Libra, a kind of blockchain-backed digital currency. According to report in a 2017 issue of the Harvard Business Review (HBR), “Bank of America, JPMorgan, the New York Stock Exchange, Fidelity Investments, and Standard Chartered are testing blockchain technology as a replacement for paper-based and manual transaction processing in such areas as trade finance, foreign exchange, cross-border settlement, and securities settlement”

### LIGO detector

**Why is it important for the country to join the global network studying gravitational waves? What will it achieve?**

#### **The story so far:**

On September 14, 2015, the two LIGO detectors in the U.S., at Livingston in Louisiana, and Hanford in Washington, registered a disturbance that was not unlike the chirp of a bird.

It was due to gravitational waves travelling outwards from a point 1.3 billion light years away from the earth.

At this point, two massive black holes with masses 29 and 36 times that of the sun had merged to give off gravitational wave disturbances.

#### **What is black holes?**

- Black holes are exotic objects that we know little about, but their immense gravitational pull which traps even the fastest object in the world, which is light, is legendary.
- When objects with such an immense gravity merge, the disturbance is felt by the very fabric of space time and travels outward from the merger, not unlike ripples on a pond surface.
- Thus, gravitational waves have been described as “ripples in the fabric of space time”. Following the 2015 detection, which later won the Physics Nobel (2017), the two LIGO detectors detected seven such binary black hole merger events before they were joined by the European Virgo detector in 2017.
- LIGO India project is expected to join the international network in a first science run in 2025.



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### **What are the LIGO detectors?**

- The acronym LIGO stands for Laser Interferometer Gravitational-Wave Observatory.
- LIGO consists of a pair of huge interferometers, each having two arms which are 4 km long. Remarkable precision is needed to detect a signal as faint as a gravitational wave, and the two LIGO detectors work as one unit to ensure this.
- Naturally, this requires weeding out noise very carefully, for when such a faint signal is being detected, even a slight human presence near the detector could derail the experiment by drowning out the signal.
  
- A single LIGO detector cannot confidently detect this disturbance on its own. At least two detectors are needed.
- This is because the signal is so weak that even a random noise could give out a signal that can mislead one into thinking a genuine gravitational wave has been detected.
- It is because two detectors have detected the faint signal in coincidence that the observer is convinced it is a genuine reading and not noise.

### **What is the need to have another detector in India?**

- Right now, with just three detectors, there is huge uncertainty in determining where in the sky the disturbance came from.
- Observations from a new detector in a far-off position will help locate the source of the gravitational waves more accurately.

### **What are the possible sources of gravitational waves?**

- Mergers of black holes or neutron stars, rapidly rotating neutron stars, supernova explosions and the remnants of the disturbance caused by the formation of the universe, the Big Bang itself, are the strongest sources.
- There can be many other sources, but these are likely to be too weak to detect.



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### **Why does one study gravitational waves?**

- As a largely unknown and fundamental phenomenon, gravitational waves are interesting to scientists.
- But once many more detectors are in place, the study also offers a new way to map out the universe, using gravitational-wave astronomy.
- Perhaps one day we will have such accurate detection facilities that signatures of gravitational waves bouncing off celestial objects can help us detect and map them.

### **What do we know about LIGO India?**

- LIGO India will come up in Maharashtra, near Aundha in Hingoli district.
- Most of the land has been acquired, and the small balance is going through a slightly longer acquisition procedure.
- The project is formally in the construction phase, with the building design conceptualised.

### **Will LIGO India be different from LIGO itself?**

- Like the LIGO detectors, the one at LIGO India will also have two arms of 4 km length. But while there are similarities there will be differences too.
- Being an ultra-high precision large-scale apparatus, LIGO India is expected to show a unique “temperament” determined by the local site characteristics.
- LIGO India and its complex feedback control loops to high sensitivity will follow a fairly independent track and poses an exciting full-scale challenge.
- Under a memorandum of understanding, the National Geophysical Research Institute is carrying out a year-long, multiple-station seismic survey campaign at the LIGO India site to characterise the local properties.
- This is in addition to the elaborate geotechnical and geophysical survey completed earlier this year.”

### **What is the technology being developed in India for LIGO India?**

- Some of it includes design and fabrication of ultra stable laser, quantum measurement techniques, handling of complex control system for enforcing precision control, large-scale ultra-high vacuum technology, data analysis and machine learning.



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- This is not a complete list and the development of such indigenous technology is likely to result in many spin-offs for industry and research.