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## B. GS 2 Related

### Category: POLITY AND GOVERNANCE

#### 1. SC: public places cannot be occupied indefinitely

##### Context:

The Supreme Court found the indefinite occupation of a public road by the Shaheen Bagh protesters (against the Citizenship Amendment Act) unacceptable.

##### SC Judgement:

- The judgment upheld the right to peaceful protest against a law.
- However, the judgment made it unequivocally clear that public ways and public spaces cannot be occupied indefinitely.

##### Details:

- The Court said that the protest became inconvenient to commuters.
- The Court said that in a democracy, the rights of free speech and peaceful protest were treasured and are to be encouraged and respected. But, rights were also subject to reasonable restrictions imposed in the interest of sovereignty, integrity and public order.
- “**Fundamental rights** do not live in isolation. The right of the protester has to be balanced with the right of the commuter. They have to co-exist in mutual respect”, the Court said.

## Category: INTERNATIONAL RELATIONS

### 1. India, Japan finalise text of pact for AI, 5G

#### Context:

- India and Japan have finalised a landmark cyber-security agreement.
- The announcement on the agreement followed the 13th India-Japan Foreign Ministers’ Strategic Dialogue between India’s External Affairs Minister and his Japanese counterpart in Tokyo.
- India and Japan vowed to further broad-base their joint efforts in ensuring a free and open Indo-Pacific.

#### Details:

- The agreement promotes cooperation in capacity building, research and development, security and resilience in the areas of Critical Information Infrastructure, 5G, Internet of Things (IoT), **Artificial Intelligence (AI)**, among others.
- The announcement is expected to draw the attention of the stakeholders in the Indian 5G sector as it gets ready to open up for international operators.
  - The firming up of the deal comes in the midst of growing concerns in India over cyberattacks from China.
  - India banned over 100 mobile apps with Chinese links in the backdrop of the border dispute in eastern Ladakh.
  - There is also a lack of clarity on the possible participation of Chinese technology majors.

#### Note:

Japan has announced a 50 billion Yen emergency assistance loan and a 1 billion Yen grant for the provision of medical support to India that will help India fight COVID-19.

## C. GS 3 Related

## Category: ECONOMY

### 1. Google set to face antitrust case in India over smart TVs

#### Context:

Google is facing a new antitrust case in India.

#### Antitrust Law

- Antitrust laws prohibit a number of business practices that restrain trade. It ensures that fair competition exists in an open-market economy.
- The Competition Act, 2002 is India’s antitrust law.

- On the recommendation of the Raghavan Committee, the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) was repealed and replaced by the Competition Act, 2002.
- The Act was amended in 2007.

**Details:**

- Google is alleged to have abused its Android operating system's position in the smart television market.
- The case is Google's fourth major antitrust challenge in India.
- It is currently facing public criticism from local start-ups for hurting their growth by enforcing certain policies and company charges.
- The Competition Commission of India has been looking into allegations that Google engages in anti-competitive practices by creating barriers for firms wanting to use or develop modified versions of Android for smart TVs.

**Note:**

Google is also facing new antitrust challenges in the U.S., and a potential antitrust probe in China.

**2. Cabinet nod for reforms in natural gas marketing****Context:**

The Cabinet Committee on Economic Affairs has approved natural gas marketing reforms.

**Details:**

- The reforms have been approved with an aim to standardize the procedure to discover the price of gas sold in the market.
- The policy has permitted affiliate companies to participate in the bidding process in view of the open, transparent and electronic bidding.
- However, rebidding would be needed in case only affiliates participated, and that there were no other bidders.

**Significance:**

- Allowing affiliate companies to participate in the bidding process will be instrumental in facilitating and promoting more competition in the marketing of gas.
- The policy will also grant marketing freedom to Field Development Plans of those Blocks in which Production Sharing Contracts already provide pricing freedom.
- The policy is expected to bring uniformity to the bidding process across various contractual regimes and policies to avoid ambiguity.
- The reforms will contribute towards the ease of doing business.
- It is expected that the reforms will spur production of, infrastructure for and marketing of natural gas, while also creating jobs in gas-consuming sectors, including in MSMEs.

**3. 'Pandemic could push 150 mn into extreme poverty'****Context:**

The World Bank has released the Poverty and Shared Prosperity Report.

**Poverty and Shared Prosperity Report**

- It is released biennially by the **World Bank**.
- It provides the latest and most accurate estimates on trends in global poverty and shared prosperity.
- Each year, the series explores a central challenge to poverty reduction and boosting shared prosperity, assessing what works well and what does not in different settings.

#### **Key findings:**

- The 2020 report presents new estimates of COVID-19's impacts on global poverty and inequality.
- According to the report, around 150 million people are likely to enter extreme poverty due to the COVID-19 pandemic, in different countries.
- It states that global extreme poverty is expected to rise for the first time in 20 years because of the disruption caused by COVID-19, exacerbating the impact of conflict and climate change, which were already slowing down poverty reduction.
- It shows that pandemic-related job losses and deprivation worldwide are hitting already-poor and vulnerable people hard, while also partly changing the profile of global poverty by creating millions of new poor.

#### **Way forward:**

World Bank suggests that, in order to counter the effects of the pandemic, countries must prepare for a different economy by allowing labour, capital, skills, and innovation to move into businesses.

## **Category: SCIENCE AND TECHNOLOGY**

### **1. Makers of gene 'scissors' win Chemistry Nobel**

#### **Context:**

Emmanuelle Charpentier of France and Jennifer Doudna of the U.S. won the Nobel Chemistry Prize for the gene-editing technique known as the CRISPR-Cas9 DNA snipping scissors.

#### **Details:**

- It is for the first time that a Nobel science prize has gone to a women-only team.
- They are the sixth and seventh women to receive the Nobel Prize in Chemistry.

## **CRISPR**

- CRISPR stands for Clustered Regularly Interspaced Short Palindromic Repeats.
- CRISPR is a genome-editing technology to diagnose diseases.
- CRISPRs are specialized stretches of DNA. The protein Cas9 (or "CRISPR-associated") is an enzyme that acts like a pair of molecular scissors, capable of cutting strands of DNA.
- CRISPR technology was adapted from the natural defence mechanisms of bacteria and archaea (the domain of single-celled microorganisms).
- These organisms use CRISPR-derived RNA and various Cas proteins, including Cas9, to foil attacks by viruses and other foreign bodies. They do so primarily by chopping up and destroying the DNA of a foreign invader.

#### **Significance:**

- It allows researchers to easily alter DNA sequences and modify gene function.
- Its many potential applications include correcting genetic defects, treating and preventing the

- spread of diseases and improving crops.
- There were ways to edit the genomes of some plants and animals before the CRISPR method was unveiled in 2012 but it took years and cost hundreds of thousands of dollars. CRISPR has made it cheap and easy.
- Using the tool, researchers can change the DNA of animals, plants and microorganisms with extremely high precision.
- This technology has had a revolutionary impact on the life sciences, is contributing to new cancer therapies.
- The CRISPR-Cas9 tool has already contributed to significant gains in crop resilience, altering their genetic code to better withstand drought and pests.
- The technology may, in the future, pave the way for developing ways to cure inherited diseases.

#### Concerns:

- CRISPR's relative simplicity and widespread applicability have triggered the imaginations of rogue practitioners.
- In 2018 in China, scientist He Jiankui caused an international scandal when he used CRISPR to create what he called the first gene-edited humans.

## D. GS 4 Related

*Nothing here for today!!!*

## E. Editorials

### Category: DISASTER MANAGEMENT

#### 1. Playing catch up in flood forecasting technology

##### Context:

- The article analyzes the current flood forecasting system in India and its lacunae and suggests appropriate measures to improve it.

##### Background:

##### **Floods:**

- A flood is a state of high water level along a river channel or on the coast that leads to inundation of land which is not normally submerged.
- Usually, heavy rainfall combines with some other factor(s) to lead to destructive flooding.
- Flood is a natural phenomenon in response to heavy rainfall but it becomes a hazard when it inflicts loss to the lives and properties of the people.

##### **Flood scenario in India:**

- Floods have been a recurrent phenomenon in India and cause huge losses to lives, properties, livelihood systems, infrastructure and public utilities.
- According to the **National Disaster Management Authority**, around 40 million hectares of land in India are exposed to floods (around 12 percent of the total land area).
- The **most flood-prone basins are those of the Ganga and Brahmaputra in Uttar Pradesh, Bihar, West Bengal and Assam**, followed by Baitarni, the Brahmani, and the Subarnarekha basin in Odisha.

- Kerala has witnessed large scale flooding for consecutive years.
- Urban areas like Mumbai and Chennai have witnessed **urban flooding** over the years.
- There has been a rapid increase in flood proneness over time with floods having occurred in areas that were earlier not considered flood-prone.

#### Details:

##### **Flood forecasting system in India:**

- The **India Meteorological Department (IMD)** issues meteorological or weather forecasts of rainfall.
- The **Central Water Commission (CWC)** integrates the rainfall forecast (also known as Quantitative Precipitation Forecast or QPF) into its system to issue flood forecasts at various river points.
- The CWC then disseminates this data to end-user agencies (district administration, municipalities and disaster management authorities), who take necessary precautionary measures.

#### Concerns:

- The shortcomings of the Indian flood forecasting system are a major point of concern.

##### **Deterministic forecasting model:**

- India currently **employs the “Deterministic forecasting” model**, i.e., it only provides a “Rising” or “Falling” type forecast. The flood forecast merely uses the words “Rising” or “Falling” above a water level at a river point and does not provide any idea of the area of inundation or its depth.
- **The “lead time” or the time available to act in case of such a model is just 24 hours.** So the end-users receiving such forecasts have very little time to act.
  - The length of time from issuance of the forecast and occurrence of a flood event termed as “lead time” is the most crucial aspect of any flood forecast to enable risk-based decision-making and undertaking of cost-effective rescue missions by end-user agencies.
- **The accuracy of the forecast also decreases at 24 hours and beyond.**

##### **Multiple agencies:**

- As discussed earlier, the flood forecasting system in India depends on the coordination of multiple agencies.
- Given that flood forecasting needs the **CWC** and IMD to complement each other’s works, it has been observed that the technological gap limits of one agency can limit the effectiveness of the other.
- **The lack of technological parity between multiple agencies** can have a detrimental impact on the overall effectiveness of the flood forecasting system in India.

##### **Outdated methodology:**

- Most flood forecasts at several river points across India are based on **outdated statistical methods** that cannot enable a lead time of less than 24 hours.
- These statistical methods also fail to capture the hydrological response of river basins between a base station and a forecast station.

##### **Lack of adequate resources:**

- The **lack of an adequately dense S-band radar network in India** is a cause of concern. This can enlarge the forecast error in QPF which would ultimately reflect in the CWC’s flood forecast.
  - These S-band Doppler weather radars with a range of 250-300 km and higher accuracy can

help provide more accurate QPF.

#### Impact on the flood forecasting system:

- Outdated technologies and a lack of technological parity between multiple agencies not only **decrease crucial lead time but also increase the forecasting errors**.
- This burden of interpretation ultimately shifts to hapless end-user agencies. The outcome is an **increase in flood risk and disaster**.

#### Way forward:

- India should work towards probabilistic-based flood forecasts with a lead time of more than seven to 10 days and also work towards better integration between multiple flood forecasting agencies.

#### Ensemble method:

- **The ensemble forecasting model** is popular in some developed nations. This type of forecast provides probabilities assigned to different scenarios of water levels and regions of inundation with a lead time of around 7-10 days.
- Ensemble weather models also measure uncertainty by causing perturbations in initial conditions and hence are more exhaustive forecasts.
- The “Ensemble flood forecast” can help local administrations with better decision-making and in being better prepared than in a deterministic flood forecast.
- The IMD has begun testing and using ensemble models for weather forecast through its 6.8 peta flops **supercomputers (“Pratyush” and “Mihir”)**.

#### Improving technical ability of CWC:

- The CWC will have to work towards achieving technological parity with the IMD in order to couple ensemble forecasts to its hydrological models.
- It will have to work towards modernising its telemetry infrastructure and work towards **improving its river basin-specific hydrological, hydrodynamic and inundation modelling capabilities**.
- This will require a **technically capable workforce** that is well versed with ensemble models and capable of coupling the same with flood forecast models.

#### Work towards reducing lead time of forecasts:

- Higher lead times will provide the end-user agencies ample time to decide, react, prepare and undertake risk-based analysis and cost-effective rescue missions, reducing the flood hazard across the length and breadth of India.

#### Use of technology:

- Technology can play a critical part in increasing lead time.
  - The use of **advanced Doppler weather radars** can help in more accurate and timely weather forecasting. Compared to point scale rainfall data from rain gauges, Doppler weather radars can measure the likely rainfall directly (known as Quantitative Precipitation Estimation or QPE) from the cloud reflectivity over a large area.
  - **The use of Artificial Intelligence techniques** can help overcome issues like data deficiencies and shortcomings of forecasts based on statistical methods.
    - Google AI has adopted the hydrological data and forecast models derived for diverse river basins across the world for training AI to issue flood alerts in India.



## Category: ECONOMY

### 1. Gig work and its skewed terms

#### Context:

- The article analyzes the impact of the new labour codes on the platform workers.

#### Background:

- Three new labour codes were passed by the Parliament recently. One of them is the Social Security Code Bill.

For more information on this topic, refer to:

#### **CNA dated Sep 20, 2020: Three Bills in Lok Sabha to bring in changes in labour sector**

- **The new labour codes acknowledge platform and gig workers** as new occupational categories in the making.
- What a platform worker is allowed to claim as rights, responsibilities and working conditions that can be legally upheld is a key aspect in these codes.
- One of the major proposals of the Social Security Code is to **bring unorganised sector, gig workers and platform workers under the ambit of social security schemes**, including life and disability insurance, health and maternity benefits, provident fund and skill up-gradation.

#### Concerns:

- The article analyzes how the new labour codes **do little to provide better pay and definitive rights to platform workers**.

#### **Does not adequately empower the gig workers:**

- Since the **laws under these codes are prescriptive**, what is written within them creates the limits to what rights can be demanded, and how these rights can be demanded.
- **Platform delivery people can claim benefits, but not labour rights, unlike the traditional factory workers.** This does not allow them to go to court to demand better and stable pay, or regulate the algorithms that assign the tasks. The code does not empower these platform workers to ask for the pay that they were promised.
  - Platform workers like Swiggy workers have faced a continuous dip in pay. Stable terms of earning have been a key demand of the gig economy workers over the years.
- This also means that the **government or courts cannot pull up platform companies for their choice of pay**, or how long they ask people to work.

#### **Lack of guarantees:**

- Under the Code on Social Security, 2020, platform workers are eligible for benefits like maternity benefits, life and disability cover, old age protection, provident fund, employment injury benefits, etc. However, **eligibility does not mean that the benefits are guaranteed.**
- None of the proposed benefits are secure, which means that **none of these are guaranteed.** It is left to the central government to formulate welfare schemes that cover these aspects of personal and work security.
- There is nothing in the new codes that could make the companies contribute towards benefits or be responsible for workplace issues.



### Conclusion:

- The 'platform worker' identity has the potential to grow in power and scope over the years. Platforms are part of the idea of how work will evolve in the future.
- The lack of guarantees for better and more stable days for platform workers, even though they are meant to be 'the future of work' is a cause of concern and needs to be addressed. There is a need to **ensure the availability of benefits and safety nets to this class of workers from the government or platform companies.**

## F. Prelims Facts

*Nothing here for today!!!*

## G. Tidbits

### 1. 'Check facial recognition misuse'

- Speaking at RAISE 2020, a virtual global AI summit, President and Chief Legal Officer of Microsoft has urged that there must be proper regulations in India and across the globe to ensure that the governments do not use facial recognition or any other facet of artificial intelligence (AI), in a way that would impinge on peoples' democratic freedoms.
- He also asserted that while AI can revolutionise virtually every part of the economy, countries that move the fastest while deploying AI will find they will be accelerating economic growth faster.

## H. UPSC Prelims Practice Questions

**Q1. Consider the following statements regarding CRISPR:**

1. CRISPR-Cas9 was adapted from a naturally occurring genome editing system in bacteria.
2. CRISPR-Cas9 technology behaves like a cut-and-paste mechanism on DNA strands that contain genetic information.
3. A women-only team has been awarded the Nobel Chemistry Prize for the CRISPR-Cas9 technique.

**Which of the given statement/s is/are correct?**

1. 1 only
2. 1 and 2 only
3. 2 and 3 only
4. 1, 2 and 3

**CHECK ANSWERS:-**

**Answer: d**

**Explanation:**

All the statements are correct.

**Q2. Raghavan Committee dealt with:**

1. Competition Policy and Competition Law
2. Data Protection Framework for India
3. Criminal Justice System in India

4. Agricultural Credit System

**CHECK ANSWERS:-**

**Answer: a**

**Explanation:**

- S. V. S. Raghavan headed the Central Government committee set up for advising policy guidelines on competition and corporate governance, which later came to be known as SVS Raghavan Committee.
- On the recommendation of the Raghavan Committee, the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) was repealed and replaced by the Competition Act, 2002.

**Q3. Consider the following statements with respect to the National Company Law Appellate Tribunal (NCLAT) :**

1. National Company Law Appellate Tribunal has replaced the Competition Appellate Tribunal.
2. It is the Adjudicating Authority for insolvency proceedings under the Insolvency and Bankruptcy Code.
3. It is the Appellate Tribunal to hear and dispose of appeals against any direction issued or decision made or order passed by the Competition Commission of India (CCI).

**Which of the given statement/s is/are correct?**

1. 1 and 2 only
2. 2 only
3. 2 and 3 only
4. 1 and 3 only

**CHECK ANSWERS:-**

**Answer: d**

**Explanation:**

- National Company Law Appellate Tribunal (NCLAT) has replaced the Competition Appellate Tribunal.
- It is the Appellate Tribunal to hear and dispose of appeals against any direction issued or decision made or order passed by the Competition Commission of India (CCI).
- NCLAT is the Appellate Tribunal for hearing appeals against the orders passed by NCLT(s) under Section 61 of the Insolvency and Bankruptcy Code, 2016 (IBC).
- National Company Law Tribunal (NCLT) is a quasi-judicial body in India adjudicating issues concerning companies in the country. The NCLT is the Adjudicating Authority for insolvency proceedings under the Insolvency and Bankruptcy Code, 2016.

**Q4. Which of the following statements most accurately describes "Pratyush" and "Mihir", recently seen in the news?**

1. They are two of the fastest supercomputers built for weather forecasting in India.
2. They are indigenously developed advanced Doppler weather radars.
3. They are the anti-submarine warfare systems developed by DRDO laboratories.
4. They are both indigenously built Medium Range air-to-air missiles.

**CHECK ANSWERS:-**

**Answer: a**

**Explanation:**

- The IMD has begun testing and using ensemble models for weather forecast through its 6.8 peta flops supercomputers “Pratyush” and “Mihir”.
- They are two of the fastest supercomputers built for weather forecasting in India.

## I. UPSC Mains Practice Questions

1. Given the criticality of an effective flood forecasting system in limiting the damage caused, evaluate the current flood forecasting system in India and analyze its shortcomings. Also suggest appropriate measures to make the flood forecasting system more effective. (15 marks, 250 words)(GS Paper 3/Disaster Management)
2. Though the new labour codes take the much necessary step of acknowledging platform and gig workers as new occupational categories and providing for them certain benefits and rights, it fails to truly empower through better pay and definitive rights to these platform workers. Comment. (10 marks, 150 words)(GS Paper/Economy)

Read the previous CNA [here](#).