OFFICERS' PULSE

Issue no.48| 24th April to 30th April, 2022

AT A GLANCE & IN DEPTH.

COVERAGE.

- The Hindu
- The Indian Express
- PIB
- Rajya Sabha TV
- All India Radio

- Polity and Social Issues
- Economy
- International Relations
- Environment
- Science and Tech
- Culture

CURRENT AFFAIRS WEEKLY

THE PULSE OF UPSC AT YOUR FINGER TIPS

News @ a glance

News in Depth

News @ a glance

POLITY

1) Anti-Defection Law

What is anti-defection?

- It is disqualification when a member of parliament or legislature chooses to join another party after being elected as some party.
- In 1985, the **52nd amendment act** was passed by the Parliament to achieve this by introducing **Tenth Schedule in the Constitution.**
- The law applies to **both Parliament and state assemblies.**

Disqualification is done when:

- Member voluntarily gives up party membership
- If he abstains from the direction given by the party's whip
- If an **independent candidate** joins any political party after their election to legislature
- If a nominated member joins a party after 6 months of his/her nomination.

Exception:

- If a **presiding officer**, after being elected, gives up party for impartiality then he is not disqualified. He can re-join the party after getting down from the post.
- The original act introduced in 1985 protected legislators from disqualification in cases where there was a **split** (with 1/3rd of members splitting) or **merger** (with 2/3rds of members merging) of a legislature party with another political party.
- The 2003 amendment to the law **deleted the one-third split provision** which offered protection to defectors.

Deciding Authority:

- The **Presiding officer** will be the final authority to decide the disqualification on the ground of anti-defection. The decision **can be challenged in court.**
- And if the question which has arisen is as to whether the Chairman or the Speaker of a House has become subject to such disqualification, the question shall be referred for the decision of such member of the House as the House may elect on this behalf and his decision shall be final.
- The law **does not specify a time period** for the Presiding Officer to decide on a disqualification plea.

Recommendations:

- The **170th Law Commission report** underscored the importance of intra-party democracy by arguing that a political party cannot be a dictatorship internally and democratic in its functioning outside. The parties should listen to the opinions of the members and have discussions giving the freedom of speech and expression and promote inner-party democracy.
- **Justice Verma** in *Kihoto Hollohan judgment* said that tenure of the Speaker is dependent on the continuous support of the majority in the House and therefore, he does not satisfy the requirement of such independent adjudicatory authority. So there is a need for an **independent authority** to deal with the cases of defection.
- The Election Commission recommended that decisions under the Tenth Schedule should be made by the **President/ Governor on the binding advice of the Election Commission.**

Why in News?

- Vice-President M. Venkaiah Naidu said the time has come to amend the anti-

defection legislation in the country to plug existing loopholes.

- Stating that there is **no clarity in the law about the timeframe for the action** of the House Chairperson or Speaker in the anti-defection cases, he said that some cases are taking six months and some even three years. There are cases that are disposed off after the term is over. He added that these anti-defection cases can be disposed of in **three months**.

2) Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021

Background

- In 2021, citing instructions from the Supreme Court and the concerns raised in Parliament about social media abuse, the government framed the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021** in exercise of powers under the Information Technology Act, 2000.
- The rules apply to **publishers of news and current affairs** (including websites, portals and YouTube news channels), **publishers of online curated content** (commonly called OTT platforms which stream content such as web series and films) and **social media intermediaries** (which primarily enables online interaction between two or more users)**.**
    - To encourage innovations and enable growth of new social media intermediaries without subjecting smaller platforms to significant compliance requirements, the Rules make a distinction between social media intermediaries and significant social media intermediaries. This distinction is based on the **number of users on the social media platform.**
    - Government is empowered to notify the threshold of the user base that will distinguish between social media intermediaries and significant social media intermediaries. The Rules require the significant social media intermediaries to follow certain **additional due diligence.**
- **Part II** of the rules relate to social media intermediaries and would be administered by the **Ministry of Electronics & Information Technology. Part III** relates to digital news publishers and OTT platforms and would be administered by the **Ministry of Information & Broadcasting.**

What are the key proposals that the guidelines make for social media intermediaries?

- **Section 79 of the Information Technology Act 2000** provides a **"safe harbour"** to intermediaries that host user-generated content, and **exempts them from liability for the actions of users** if they adhere to government-prescribed guidelines.
- The new guidelines prescribe an **element of due diligence to be followed by the intermediary**, failing which the safe harbour provisions would cease to apply to these platforms such as Twitter, Facebook, YouTube, and WhatsApp.
- They also prescribe a **grievance redressal mechanism** by mandating that the intermediaries, including social media platforms, should establish a mechanism for receiving and resolving complaints from users.
- Intermediaries shall **remove or disable access withing 24 hours of receipt of complaints** of contents that exposes the private areas of individuals, show such individuals in full or partial nudity or in sexual act or is in the nature of impersonation including morphed images etc. Such a complaint can be filed either by the individual or by any other person on his/her behalf.

Do the guidelines lay the rules for removal of content from social media?

- In essence, the rules lay down **10 categories of content that the social media platform should not host.**
- These include content that "threatens the unity, integrity, defence, security or sovereignty of India, friendly relations with foreign States, or public order, or causes incitement to the commission of any cognizable offence or prevents investigation of any offence or is insulting any foreign States"; "is defamatory, obscene, pornographic, paedophilic, invasive of another's privacy, including bodily privacy; insulting or harassing on the basis of gender; libellous, racially or ethnically objectionable; relating or encouraging money laundering or gambling, or otherwise inconsistent with or contrary to the laws of India", etc.
- The rules stipulate that upon receipt of information about the platform hosting prohibited content from a court or the appropriate government agency, it **should remove the said content within 36 hours.**

Additional due diligence to be observed by significant social media intermediary

- A **significant social media intermediary** shall appoint a **Chief Compliance Officer** who shall be responsible for ensuring compliance with the rules.
- A significant social media intermediary shall appoint a **nodal contact person** for 24x7 coordination with law enforcement agencies.
- Further, these platforms will need to publish a **monthly compliance report** mentioning the details of complaints received and action taken on the complaints, as well as details of contents removed proactively by the significant social media intermediary.
- Significant social media intermediaries which provide messaging as a primary service must enable the **identification of the first originator** of the information on its platform and it must be **disclosed if required by an order from the Court or the government.** Such order will be passed for specified purposes including investigation of offences related to sovereignty and security of the state, public order, or sexual violence.

Rules for Digital news media & OTT platforms

- The rules establish a **three-tier grievance redressal framework** for news publishers and OTT platforms on the digital media.
- The first tier of the regulatory mechanism is grievance redressal by the **company itself**; the second level involves a **self-regulatory body** that will be headed by a retired judge of a high court or the Supreme Court. The third-tier will comprise an **inter-ministerial committee** and will be headed by a joint secretary-level officer from the Ministry of Information and Broadcasting.
- The rules also establish a **Code of Ethics** for digital news media and OTT platforms. For publishers of news and current affairs, the following existing codes will apply: (i) norms of journalistic conduct formulated by the Press Council of India, and (ii) programme code under the Cable Television Networks Regulation Act, 1995.
- For online publishers of curated content, the **Rules prescribe the code of ethics.** This code requires the publishers to: (i) classify content in specified age-appropriate categories, restrict access of age-inappropriate content by children, and implement an age verification mechanism, (ii) exercise due discretion in featuring content affecting the sovereignty and integrity of India, national security, and likely to disturb public order, (iii) consider India's multiple races and religions before featuring their beliefs and practices, and (iv) make content more accessible to disabled persons.
- For OTT service providers such as YouTube, Netflix, etc., the government has prescribed **self-classification of content into five categories based on age suitability** which includes "U", "U/A 7+", "U/A 13+", "U/A 16+" and "A".

Why in News?

- The Supreme Court is set to hear petitions related to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules, 2021).
- The matters include the transfer petition filed by the Central Government seeking to transfer to the Supreme Court the petitions filed in different High Courts challenging the IT Rules.

ENVIRONMENT

1) Invasive Species threatens Wildlife Habitats of Western Ghats

What are Invasive Alien Species?

- Invasive alien species are **plants, animals, pathogens and other organisms that are non-native to an ecosystem**, and which may cause **economic or environmental harm** or adversely affect human health.
- In particular, they impact adversely upon **biodiversity**, including decline or elimination of native species - through competition, predation, or transmission of pathogens and the **disruption of local ecosystems and ecosystem functions.**
- Invasive alien species exacerbate poverty and threaten development through their impact on agriculture, forestry, fisheries and natural systems, which are an important basis of people's livelihoods in developing countries.

Why in news?

- The dearth of effective steps to arrest the **rampant growth of invasive plants, especially *Senna spectabilis*, in the forest areas of the Nilgiri Biosphere Reserve (NBR)**, including the Wayanad Wildlife Sanctuary, is a matter of serious concern to the conservation of wildlife habitats of the Western Ghats.

News in detail

- A recent study, **organized by Ferns**, a nature conservation society, in association with the Kerala Forest Department, revealed that the invasive species has now spread through the most iconic **wildlife habitats of the Western Ghats, destroying habitats of elephants, deer, gaur and tigers by pushing out native flora.**
- The **carrying capacity of forests** to feed wildlife is drastically declining under the invasion, which accelerates man-animal conflict further.
- The invasive species found its way to Wayanad in the 1980s, when the seedlings of the plant were first raised in the nurseries of the social forestry wing, and planted as avenue trees.
- Over the period, it was established in the Bandipur and Nagarhole Tiger Reserves of Karnataka, and the Mudumalai and Sathyamangalam Tiger Reserves in Tamil Nadu.

2) Palli in Jammu becomes India's first Carbon-Neutral Panchayat

What's the news?

- **Palli village in Jammu's Samba district** has become the **country's first panchayat to become carbon neutral**, fully powered by solar energy and with all its records digitized and saturation of benefits of all the Central schemes.

News in detail

- Inaugurating the **500 KW solar plant,** Palli was a major step towards the **Glasgow goal** of making India carbon-neutral.
- The PM described Palli as a **model panchayat**, which is bound to motivate other panchayats in Jammu and Kashmir and the country to become carbon-neutral.
- Underlining the role of Panchayats and Gram Panchayats in the country, the PM highlighted that panchayats had to play a **central role in decision-making of a village** and will become mediums for the country to reach new heights.
- The government is pushing for major **technology-related measures, e-swaraj and mode of payments** to make Panchayats more powerful.

3) Minister urges Private sector to join fight against Malaria

What's the news?

- The Union Health minister in his address to commemorate **World Malaria Day 2022** has called for **prioritization of malaria elimination** and said **leveraging technology and innovation** will help in developing tailor-made solutions to advance India's malaria elimination plan and contribute to improved health, quality of life and alleviation of poverty.
- This year's theme is **"Harness innovation to reduce the global malaria disease burden and save lives."**
- A manual on Integrated Vector Management 2022 was released on this occasion.

News in detail

- Suggesting that the **private sector** including the private practitioners need to align their malaria case management, reporting and related activities with the national program, the need is to emphasize progressive **strengthening of the healthcare delivery system and improving multi-sectoral coordination and collaboration.**
- The Union Health minister highlighted that "Not only diagnosis and treatment, **"swachhta"(Cleanliness)** in our personal and community surroundings and **social awareness** regarding malaria control and prevention are equally important in our collective fight against the disease and for meeting our **goal of elimination by 2030".**
- India has made progress in reducing the malaria incidence and deaths and has resulted in **86.45% decline in malaria cases and 79.16% reduction in malaria related deaths in 2021** as compared to 2015 but still more needs to be done to achieve the goal of "Malaria Free India".

About Malaria

- Malaria is a life-threatening disease caused by ***Plasmodium* parasites.**
- There are **5 parasite species** that cause malaria in humans, and 2 of these species – ***P. falciparum*** and ***P. vivax*** – pose the greatest threat.
- The parasites are spread to people through the bites of infected **female *Anopheles* mosquitoes.**
- Children aged under 5 years are the most vulnerable group affected by malaria.
- **Symptoms:** Fever, tiredness, vomiting, headaches, seizures, chills, etc.
- **Diagnosis:** Examination of blood films or by antigen-based rapid diagnostic tests (RDT).
- **Prevention: Vector control** is the main way to prevent and reduce malaria transmission. Two forms of vector control – **insecticide-treated mosquito nets and indoor residual spraying** – are effective in a wide range of circumstances.
- **Treatment:** Antimalarial medications depending on the type of malaria.
- **Vaccine: RTS,S/AS01 (RTS,S)** (trade name **Mosquirix**) is the world's first malaria vaccine shown to provide partial protection against malaria in young children. The vaccine is being provided to young children through national immunization programs in parts of three sub-Saharan African countries as part of a pilot introduction that began in 2019.
- **In 2020, there were an estimated 241 million cases of malaria worldwide.**

Malaria in India

- According to the **WHO's World Malaria Report, 2020, 11 highest burden countries** - Burkina Faso, Cameroon, the Democratic Republic of the Congo, Ghana, **India**, Mali, Mozambique, Niger, Nigeria, Uganda and Tanzania - account for 70% of the global estimated case burden and 71% of global estimated deaths from malaria.
- India contributed 1.7% of malaria cases and 1.2% deaths globally.
- India continues to make impressive gains in reduction of malaria burden. India is the **only high endemic country** which has reported a decline of 17.6% in 2019 over 2018.
- India achieved a **reduction of 83.34% in malaria morbidity and 92% in**

malaria mortality between the year 2000 and 2019.
- Decline in malaria has been observed in the hitherto **high endemic states** like Odisha, Meghalaya, Jharkhand, Madhya Pradesh and Chhattisgarh.

Steps taken by Indian government to eliminate malaria

- In India, Malaria Elimination efforts were initiated in 2015 and were intensified after the launch of **National Framework for Malaria Elimination (NFME)** in 2016 by the Ministry of Health and Family Welfare.
- **The National Strategic Plan for Malaria Elimination (2017-22)** was launched by the Health Ministry in 2017 which laid down strategies for the next five years.
- Efforts were made by the Government of India in the provision of **microscopes, rapid diagnostics Long Lasting Insecticidal Nets (LLINs).**
- They are being supplied/distributed to **high burden areas** leading to reduction in endemicity in these otherwise very high endemic states.

4) The Last Hope for Vultures

About Vultures

- Vultures are large, magnificent raptors. By cleaning up carcasses and other organic waste in the environment, they provide critically important ecosystem services that also directly benefit humans.
- India has **9 vulture species** in the country.
- Four of India's vulture species are under severe threat.
    - **Indian Vulture (Gyps indicus)- Critically Endangered**
    - **Indian White-rumped Vulture (Gyps bengalensis)- Critically Endangered**
    - **Red-headed Vulture (Sarcogyps calvus)- Critically Endangered**
    - **Slender-billed Vulture (Gyps tenuirostris)- Critically Endangered**
- Other Species of Vultures found in India include Egyptian Vulture (Neophron percnopterus): **Endangered**, Cincerous Vulture (Aegypius monachus): **Near Threatened**, Bearded Vulture (Gypaetus barbatus): **Near Threatened**, Griffon Vulture (Gyps fulvus): **Least Concerned** and Himalayan Vulture (Gyps himalayansis): **Near Threatened**.
- Most of their populations are declining. Their decline is associated with **use of Diclofenac** for cattle treatment which then ends up in their digestive system making them vulnerable to kidney failure and poisoning.

Why in news?

- The **Sigur plateau in the Mudumalai Tiger Reserve (MTR)** in the Nilgiris is **one of the last remaining regions where a sizable breeding vulture population** is clinging on in Southern India.
- **Three of the four species** seen regularly in the Sigur are on the **"critically endangered" list,** while the other, the **Egyptian vulture, is classified as being "endangered".**

News in detail

- A conservation NGO working on protecting vultures in the landscape highlights that the latest surveys in the MTR buffer zone indicate that there are between **110 and 120 white-rumped vultures (*Gyps bengalensis*), 11 and 15 Indian or long-billed vultures (*Gyps indicus*) and maybe up to 5 Asian king vultures (*Sarcogyps calvus*) in Sigur.**
- The **Egyptian vulture (*Neophron percnopterus*)**, once widely seen in the Nilgiris, is not believed to have **any nesting sites in the region**, but is still occasionally spotted.
- Invasive species such as ***Lantana camara* and *Eupatorium* have taken over large parts of the vultures' habitat**, limiting their ability to scavenge for food.
- One way to help the vultures could be to undertake **large-scale removal of**

invasive species, opening up more grassland where they could scavenge carcasses of both wild animals as well as cattle.
- The **Sigur plateau is home to the largest nesting colony of vultures** south of the Vindhya Mountain Range which makes conservation of vulture population extremely important.
- The region could potentially help critically endangered vulture species recolonise the surrounding landscapes from where they have become locally extinct over the last few decades because of the use of **Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) to treat cattle.**

5) Despite Railways "Plan Bee" , Elephants continue to die on Rail Tracks

What is Plan Bee?

- In 2017, the **Northeast Frontier Railway (NFR)** adopted a unique method called 'Plan Bee' to **keep elephants away from railway tracks.**
- It involves setting up an **amplifying system near tracks imitating the buzz of a swarm of honey bees** which is considered as a natural nemesis of elephants.
- The buzzing is played as trains approach vulnerable points and is **audible up to half a mile (600 meters)** which will keep wild elephants away from the tracks.
- First one was installed near the Guwahati railway station.

Why in news?

- The railways' "Plan Bee" to keep elephants off the rail tracks seems to have failed to get the desired results with **48 pachyderms and 188 other animals killed by running trains since 2019.**
- The Northeast Frontier Railway (NFR) registered the **highest number of elephant deaths** — four in 2019, six in 2020, five in 2021 and two so far in 2022, taking the toll to 17 in the said period.

News in detail

- The railways has been looking into the issue after animal deaths on the tracks **increased sharply** between 1987 and 2010. In the 23-year period, **150 elephants died while crossing railway tracks.** Between 2009 and 2017, in just eight years, 120 elephants were killed on railway tracks.
- The maximum number of **72 animal fatalities** was reported from the South East Central zone, which is headquartered at Bilaspur and comprises the Bilaspur, Nagpur and Raipur divisions. However, no elephant was killed in this zone.
- The deaths **did not abate even during the suspension of all services by the railways** to curb the spread of the coronavirus. While 16 elephants and 38 other animals were killed on the tracks in 2020, 10 pachyderms were killed in 2019, 19 in 2021 and **3 till February in 2022.**
- Railway zones like NFR have also adopted measures in collaboration with the forest department such as **real-time monitoring of elephant movement** by forest officials posted at divisional controls, **imposing speed restrictions at identified locations**, **providing signboards to alert drivers** as the trains approach elephant corridors, **constructing ramps or underpasses for elephant crossing** and clearing forest near the tracks for better visibility.

6) Intense Heatwave all over India

What's the news?

- India is in the throes of an unusually **long series of heatwaves** that began in the end of March and **scorched north India for most of April.**
- The India Meteorological Department (IMD) said **April was the hottest in northwest India in 122 years.** It has also been an unusually hot April with **temperatures touching above 40**

degree Celsius in large parts of Bihar, Jharkhand and West Bengal.

What is a Heatwave?

- According to the IMD, a heatwave is a **condition of air temperature which becomes fatal to the human body when exposed.**
- Quantitatively, a heatwave is defined based on the **temperature thresholds over a region in terms of actual temperature** or its departure from normal.

Criteria for declaring a Heatwave

- A heatwave is declared when the **maximum temperature is over 40 degree Celsius and at least 4.5 notches above normal for plains and at least 30°C or more for Hilly regions.**
- A severe heatwave is declared if the departure from **normal temperature is more than 6.4 degrees.**
- Based on absolute recorded temperatures, a heatwave is declared when an area logs a maximum temperature of 45 degree Celsius. A severe heatwave is declared if the maximum temperature crosses 47 degrees.

Period of a heatwave in India

- It occurs mainly from **March to June.** But in some rare cases, a heat wave can also occur in July, according to the IMD.
- The **peak month of the heatwave in the country is in May.**

States prone to Heatwave in India

- Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Madhya Pradesh, Rajasthan, Gujarat, parts of Maharashtra and Karnataka, Andhra Pradesh and Telangana.

Recorded Temperatures

- Records from IMD suggest that the average maximum temperature till April 27 was **35.7 degree Celsius, the highest in five years** for this month.
- In **Madhya Pradesh, Rajasthan, Punjab, and Gujarat,** the average maximum temperature was **above 42 degree Celsius** in April 2022 and has been the highest since 1951; while it has been the second highest in Delhi, Uttar Pradesh, and Haryana.
- Over 40-43 degree Celsius temperature is recorded over most parts of Haryana-Delhi, Punjab and in isolated pockets of west Uttar Pradesh, Chhattisgarh, Marathwada, Telangana and Rayalaseema.
- This year follows the **warmest March in 121 years** with the maximum temperature across the country nearly 1.86 degree Celsius above normal.

Is Climate Change Responsible?

- The heat-trapping consequences of **global warming** imply that climate extremes such as heatwaves are expected to rise in frequency. According to assessments by the IPCC, **instances of extreme rainfall, as well as longer rainless spells are expected.**
- The main reason for the scorching heat in the northern parts of the country is **lack of rainfall.**
- Ironically, April also saw maximum instances of extreme rainfall since 2018 though it was concentrated in the south and north-eastern India.
- The **rain-bearing western disturbances originate because of temperature gradients** between the northernmost parts of the globe and the latitudes passing through West Asia. Weaker gradients mean weaker rains. This March and April, cooler than normal conditions in the Pacific Ocean failed to aid rainfall in north India.
- According to the scientists who were part of an online webinar on climate change organized as part of the **TNQ-Janelia Climate Change** have revealed that India is gripped in the throes of a **long spell of heatwaves** and there is compelling evidence that a **significant portion of it is due to human-induced climate change.**

What impact do Heat Waves have over India?

- Research through the years shows that the **number of heatwave days in India is increasing every decade.** Eg: From 413 in 1981-90 to 575 in 2001-10 and 600 in 2011-20, the number of days that see extremely hot days is

persistently increasing at 103 weather stations.
- Some parts along eastern India, such as **Andhra Pradesh, Telangana and Odisha, also register higher humidity along with high temperatures**, leading to a rise in a condition called **'wet bulb' temperature**, that at its mildest can cause extreme discomfort and at its worst cause dehydration and death.
- According to a research study by IMD scientists, Heatwaves have **killed more than 17,000 people in 50 years in India.**
- A simulation study jointly undertaken at Princeton University, Columbia University and National Aeronautics and Space Administration (NASA) said that **if carbon emissions were unchecked, half the planet would be in severe drought** by the end of the century.
- Along with carbon dioxide emissions, **pollution from biomass burning** combined with this and caused **1.5 million deaths annually in India.**

What is being done to buffer against High Temperatures?

- Over the years, forecast systems have improved that allow **heatwave warnings** to be disseminated **via electronic channels and phones** instantaneously.
- Many State governments across the country have declared school holidays; some have highlighted the dangers of working outdoors during the day.
- Many State governments award **monetary compensation for deaths** linked to heatwaves.

What needs to be done ahead to buffer against Climate Change?

- The scientists have suggested that India could cut its pollution by half just by **providing clean cooking fuel to rural households in the Indo-Gangetic plains.**
- As nearly a third of emitted carbon dioxide didn't make it to the atmosphere as they were absorbed back into the soil by forests and other vegetation, **nature-based solutions**, such as increasing forest area, would be valuable to India's climate adaptation programmes.
- India should prepare a **10-year plan** to ensure that India's poor, who stood to be most affected by climate change, were protected from heat waves and wildfires.
- **Societal transformation, mitigating carbon dioxide emissions and adaptation** are all necessary to buffer against climate change.

ECONOMY

1) Nutrient Based Subsidy Scheme

Background

- Fertilizers are crucial productivity augmenting inputs. To meet the challenge of rising demand for food, feed, and fibre with limited land and water resources, it is imperative to augment land productivity and one way to do this is to make fertilisers easily accessible to farmers.
- With this end in view, the fertiliser sector in the country is subsidised.

Issues

- Crops require the right mix of three nutrients viz. **nitrogen, phosphorus, and potassium or NPK** (N helps in plant growth and development, P not only accelerates blooming and the growth of roots but also helps plants to withstand stress and K helps the process of photosynthesis and is essential to plant growth).
- Imbalanced use of N, P and K leads to the loss of fertility of the soil over a period of time, which affects efficiency of fertilizer use and crop productivity.
- In India, **urea** (a nitrogen based fertiliser) is the most commonly used fertiliser because it is highly subsidised. The excessive use of nitrogenous fertilisers has led to a **distortion in the soil nutrient ratio**. Against the ideal NPK (Nitrogen-Phosphorus-Potassium) consumption ratio of **4:2:1**, the actual ratio in 2017-18 was **6.1:2.5:1.**
- Indiscriminate use of nitrogenous fertilizers is **detrimental to the soil and the crop.**
- It also **pollutes the groundwater.** The nitrogen from fertilizers, which is converted to nitrate by the bacteria in the soil, leaches into the groundwater and washes out of the soil surface, entering streams and rivers.

About NBS Scheme

- In order to promote balanced fertilization of soil, Nutrient Based Subsidy (NBS) programme for fertilizer was initiated in the year 2010. Under the scheme, a **fixed amount of subsidy decided on an annual basis** is provided on **each grade of subsidized Phosphatic and Potassic (P&K) fertilizers based on its nutrient content.**
- The scheme aims at ensuring **balanced nutrient application to the soil.**
- It also aims at improving agricultural productivity and promoting the growth of the indigenous fertilizers industry.
- The scheme is being implemented by the **Department of Fertilizers** under the **Ministry of Chemicals and Fertilizers.**

Why in the News?

- With urea and fertilizer prices shooting up in the aftermath of the Russia-Ukraine conflict, the Union Cabinet has approved an enhancement in subsidies on non-urea fertilizers for the upcoming Kharif crop, to ₹60,939 crore.

Fertiliser subsidy in India

- In India, the fertiliser subsidy accounts for the **second largest subsidy** after food.
- Currently, **Urea** is the only controlled fertilizer and the government fixes the maximum retail price (MRP). The difference between the production cost and the MRP is reimbursed to manufacturers.
- Retail prices of **non-urea fertilisers** such as Di-ammonium Phosphate (most widely used one after urea), Muriate of Potash (MoP) are **decontrolled** and are **determined by manufacturers**, while the Centre gives a fixed subsidy each year.

2) Palm Oil

Context

- **Indonesia, the world's biggest producer, exporter, and consumer of palm oil,** announced that it will ban all exports of the commodity and its raw materials to reduce domestic

shortages of cooking oil and bring down its skyrocketing prices.
- The announcement came amid surging global food prices as a consequence of the ongoing Russia-Ukraine conflict.

How important is palm oil to global supply chains?

- Palm oil is the **world's most widely used vegetable oil** with its global production in crop year 2020 exceeding 73 million tonnes (MT). Output is estimated to be 77 MT for the current year.
- Made from the **African oil palm**, it is **used as cooking oil, and in everything from cosmetics to processed food to cleaning products.**
- The oil palm industry has come under criticism for what are reportedly **unsustainable production practices** leading to deforestation, and exploitative labour practices carried forward from the colonial era.
- However, palm oil is preferred by many as it is **inexpensive**; oil palms produce more oil per hectare than other vegetable oil plants. **Indonesia and Malaysia together account for almost 90% of the global palm oil production**, with Indonesia producing the largest quantity at over 43 MT in the 2021 crop year.
- Palm oil makes up 40% of the global supply of the four most widely used edible oils: palm, soybean, rapeseed (canola), and sunflower oil. Indonesia is responsible for 60% of the global supply of palm oil.

Why are the prices of edible oils rising?

- The prices of palm oil rose this year as demand increased because of the **short supply of alternative vegetable oils.** The production of soybean oil, the second most-produced oil, is expected to take a hit this year due to a poor end soybean season in major producer Argentina. The production of canola oil was hit in Canada last year due to drought; and supplies of sunflower oil, 80-90% of which is produced by **Russia and Ukraine,** has been badly hit due to the ongoing conflict.

How will it impact India?

- **India is the biggest importer of palm oil** which makes up 40% of its vegetable oil consumption. India meets half of its annual need for 8.3 MT of palm oil from Indonesia. Last year, the Centre also unveiled its plan to **boost India's domestic palm oil production.**
- Despite the rising prices of the commodity, India's palm oil imports jumped 21% in March from the previous month as traders moved to secure alternatives to sunflower oil that could no longer be bought from Ukraine.

3) How quickly can India move away from coal?

Context

- Recently, Chief Ministers of several states wrote to Prime Minister Narendra Modi regarding the coal shortage in their respective states. Decline in coal stocks and the resulting power outages in several States have spurred queries of renewable energy's potential to fill in for the conventional resource.
- Coal stocks in more than 100 thermal power plants in India have fallen below the critical mark (less than 25% of the required stock) while it was less than 10% in over 50 plants across India.

Is there a coal crisis?

- **Coal accounts for 55% of the country's energy needs**. The **India Energy Outlook 2021** report of the **International Energy Agency (IEA)** said energy use in India has doubled since 2000, with **80% of demand still being met by coal, oil and solid biomass.**
- Pandemic-related disruptions, however, prevented the stock-up of coal. Mining operations were halted to curb the spread of the virus. Despite the gradual easing into operations, mining activities were hampered

during the monsoons, delaying arrival of stocks.

- With household demand for power picking up and the arrival of summer, combined with the sudden acceleration in economic activity, it has resulted in a **demand-supply mismatch.**
- The energy demand will go up as urbanisation and the population increase. The IEA estimates that despite the shock from COVID-19, India's demand is expected to grow by almost 5% a year till 2040.

What is the consumption pattern?

- **Coal is abundantly available, has shorter gestation periods** and coal-based plants have **lower capital costs** than hydel and nuclear plants, therefore, making it the **most viable enabler of energy security in the country.**
- The conventional resource's capacity addition is further helped by the increased **participation of the private sector in power generation.**

Where does India stand on renewable energy sources?

- The report of the **Central Electricity Authority** on optimal generation capacity mix for 2029-30 estimates that the **share of renewable energy in the gross electricity generation is expected to be around 40%** by that financial year.
- A total of **152.90 GW of renewable energy capacity** has been installed in the country as on February 28. This includes 50.78 GW from solar power, 40.13 GW from wind power, 10.63 GW from bio-power, 4.84 GW from small hydel power and 46.52 GW from large hydel power.
- In accordance with the Prime Minister's announcement at **COP26** (the 2021 United Nations Climate Change Conference), the Ministry of New and Renewable Energy aspires to **install 500 GW of electricity capacity from non-fossil fuel sources by 2030.**
- In 2020-21, as per the CEA, 1,381.83 billion units (bu) was generated in total, of which renewable energy sources' share was 297.55 bu — representing **21.5% of the overall generation.**

What are the challenges?

- The capacity of a plant does not necessarily translate into the actual power it generates for the grid, **some of it is lost owing to external factors such as heat or transmission losses.** This applies for **both renewable and conventional sources.**
- Solar and wind energy are variable resources with **'variability'** being particularly exposed during periods of peak demand. For example, solar energy is abundantly available during daytime in summers. However, domestic consumption peaks in the evenings. With no sunlight outside then, energy requirements and supply face a mismatch. Another dimension to it is the **seasonal variation.** In monsoons, solar energy is barely available with wind energy available in abundance.
- Another factor is **spatial variability.** Regions near coastal areas enjoy more wind and therefore, possess greater ability to produce wind energy, like Gujarat, in comparison to States which are drier and experience more sunlight, like Rajasthan. Use of renewable energy, therefore, would essentially require a **balancing act.**

What about transmission and storage?

- Transmission and storage are central to addressing variability issues. They help cope with the **'duck curve' power demand** among consumers in India. Resembling a duck, the curve is a graphical representation **exhibiting the difference between the demand and availability of energy through the day.**
- With both wind and solar being variable sources — it becomes imperative to establish a **complementing model.** This would require import and export technologies between States as well as optimising the trade between those with differing demand and production profiles.

- For instance, thermal plants in the eastern region provide flexibility for demand centres to the south and west, which have high industrial and agricultural loads and may call on imports during periods of low renewables availability.
- Another issue is that **India's national infrastructure has not been designed to account for so much variability in energy generation.** The grid is accustomed to consistent supply from thermal power plants, which is diametrically opposed to the erratic generation from solar-PV, wind turbines, and other renewables.

How will the cost factor work?

- Transition to renewable energy would depend a lot on **inculcating energy-efficient behaviour** such as operating ACs, both for commercial and domestic usage, more flexibly through the day and opting for energy-efficient products.
- Cooling systems emerge as a utility during summers, the usage however is divided between higher and lower income households with the former being more economically secure opting to run them all through the day.
- A **demand response programme** in the direction would help address such issues keeping external factors constant. Further, lifestyle changes to reduce energy demand too would be essential; an example here could be **Japan's 'Cool Biz Campaign'** permitting employees to wear light and casual clothes at work instead of the conventional jackets and tie in order to reduce the need for air-conditioning.
- As per government data, India has seen **record low tariffs** of ₹1.99 per KWh for solar power and ₹2.43 per KWh for wind power — much cheaper in comparison to electricity produced from conventional sources.

4) Semicon India Programme

About the Programme

- In order to widen and **deepen electronic manufacturing and ensure development of a robust and sustainable Semiconductor and Display ecosystem in the country**, the Union Cabinet had approved the Semicon India Programme in December last year.
- The initiative will position the country as a global hub for electronic system design and manufacturing.
- Through the program's scope, the government hopes to attract large global chip makers to make India their production base. India wants to achieve technological leadership in these areas of strategic importance – also **key to the security of the country's critical information infrastructure.**
- The programme has been approved with an outlay of 76 thousand crore rupees.

Implementation

- **India Semiconductor Mission (ISM)** has been set up as a dedicated institution for the Semicon India Programme.
- ISM will coordinate with the applicant companies who have also reached out to states to provide access to world class infrastructure.
- It will work closely with the state governments to establish high-tech clusters with 300 to 500 acres of developed land, 100 Kilo Volt Ampere Power, 50 Million Litre Per Day Water, availability of natural gases and common facility centres for testing and certification.

Why in News?

- The Government of India has announced that it is currently proposals for setting up electronic chip and display manufacturing units with a total investment of ₹1.53 lakh crore.

Significance

- Semiconductors are the building blocks of electronic devices ranging from smartphones and cloud servers to modern cars, industrial automation, critical infrastructure and defence systems. They are at the **core of**

fourth industrial revolution technologies.

- India, like other countries across the world, **imports most of its chips from Taiwan, Singapore, Hong Kong, Thailand, and Vietnam.**
- If a country is looking to be self-sufficient or self-reliant, it cannot do without a vibrant semiconductor industry.
- The Semicon India Programme will not only boost semiconductor manufacturing but will also help India achieve **self-sufficiency, improve data security, and gain digital independence.**
- Developing domestic semiconductor manufacturing capabilities will have a **multiplier effect** across different sectors of the economy and will contribute significantly to achieving a **USD 1 trillion digital economy and a USD 5 trillion GDP by 2025.**

INTERNATIONAL RELATIONS

1) Countries will have to 'justify' veto votes at UN

About UNGA

- United Nations General Assembly (UNGA) is the main deliberative, policymaking and representative organ of the UN.
- It is **one of the six principal organs** which make up the UN.
- All 193 Member States of the UN are represented in the General Assembly, making it the **only UN body with universal representation.**
- The annual session is attended by world leaders to discuss and debate the world's most important global issues and how to address them.

Voting

- **Each country has one vote.**
- Decisions on important questions, such as those on peace and security, admission of new members and budgetary matters, require a **two-thirds majority**. Decisions on other questions are by **simple majority.**

About UNSC

- The United Nations Security Council (UNSC) was established in **1946** as **one of the six principal organs of the UN.** It is generally viewed as the apex of the UN system.
- It is responsible for the **maintenance of international peace** and **security**.
- Its powers include the establishment of peacekeeping operations, the establishment of international sanctions, and the authorization of military action through Security Council resolutions.
- It is the only UN body with the authority to issue **binding resolutions** to member states.

Membership

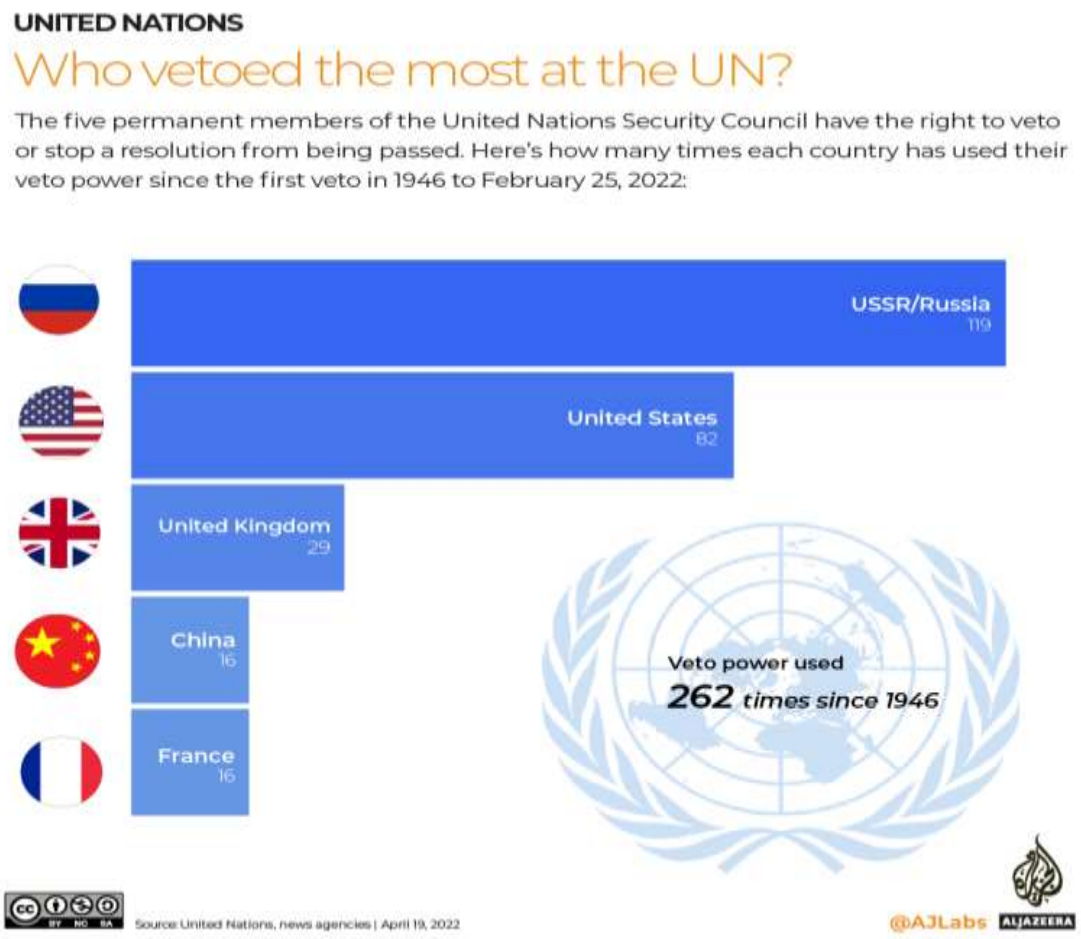
- UNSC consists of 15 Members.
- The council has **five permanent members** (P-5) United States, Russia, China, United Kingdom and France.
- These permanent members can **veto** any substantive Security Council resolutions, including those on the admission of new member states.
- The Security Council also has **10 non-permanent members**, elected on a **regional basis** as follows:
    - five for African and Asian States;
    - one for Eastern European States;
    - two for the Latin American and Caribbean States; and
    - two for Western European and other States.
- Each year the 193-member UN General Assembly (UNGA) elects five non-permanent members for a **two-year term.**
- The body's presidency rotates monthly among its members.

Vote and Majority Required

- Each member of the Security Council shall have **one vote.**
- Decisions of the Security Council on **procedural matters** shall be made by an **affirmative vote of nine members.**
- Decisions of the Security Council on **all other matters** shall be made by an **affirmative vote of nine members including the concurring votes of the permanent members.**
- However, any member, whether permanent or nonpermanent, must abstain from voting in any decision concerning the peaceful settlement of a dispute to which it is a party.

Why in News?

- The 193 members of the United Nations General Assembly adopted by consensus on a resolution **requiring the five permanent members of the Security Council to justify their use of the veto.**
- The push for reform was revived by Russia's invasion of Ukraine.



- The measure is intended to make veto-holders United States, China, Russia, France and Britain "pay a higher political price" when they use the veto to strike down a Security Council resolution, said an ambassador who asked to remain anonymous.
- It is unclear if the five permanent members will use the veto less, or more — as they could propose controversial texts they know their rivals will veto only to force them to justify their stance publicly.
- Almost 100 countries joined Liechtenstein in co-sponsoring the reform, including the United States, Britain and France. Neither Russia nor China were among the sponsors, though.

2) Indus Water Treaty

What is the Indus Water Treaty (IWT)?

- Signed in the year **1960** by **former Prime Minister Jawaharlal Nehru and the then President of Pakistan, Ayub Khan,** the Indus Water Treaty is an agreement that was made to chalk out the control over the 6 rivers that run across India and then Pakistan into the Indus basin.
- This treaty was signed following the partition of the subcontinent.
- On an international level, the IWT has been seen as one of the most successful cases of conflict resolution. It is so because India and Pakistan, ever since IWT was signed, have engaged in 4 major wars but the treaty has stayed in place.

Which rivers belong to India and which ones to Pakistan?

- The Indus Waters Treaty was signed in 1960 after nine years of negotiations between India and Pakistan with the help of the **World Bank**, which is also a signatory.
- Precise details were laid out about how the water will be divided.

- While **Jhelum, Chenab and Indus** (3 western rivers) were allocated to Pakistan, India received the control of **Ravi, Beas and Sutlej** (3 eastern rivers).

- In effect, Pakistan got 80% of the water from the Indus river system and India 20%.
- If **disputes arose**, the two parties would try to solve them bilaterally first. Appointing a "Neutral Expert" and approaching the International Court of Arbitration are other options.
- The treaty also stated that aside from certain cases such as specified domestic, non-consumptive and agricultural use permitted to India, no storage and irrigation systems can be built by India on the western rivers.

Why in News?

- Pakistan has objected to Prime Minister Narendra Modi's visit to Kashmir and the laying of foundation stones for the construction of the Rattle and Kwar hydroelectric projects on the Chenab river, which it claimed was a "direct contravention" of the Indus Waters Treaty.
- According to the terms of the IWT, India has the **right to build RoR projects on the three 'western' rivers — the Chenab, Jhelum and Indus — provided it does so without substantially impeding water flow in Pakistan downstream.**

3) Raisina Dialogue

Context

- India's premier conference on global affairs, the Raisina Dialogue, was recently held with Prime Minister Narendra Modi inaugurating the seventh edition in the presence of foreign dignitaries, including chief guest Ursula von der Leyen, the European Union Commission President.
- The conference is a joint venture of the **Ministry of External Affairs (MEA) and independent think tank Observer Research Foundation (ORF).**
- This year's Raisina Dialogue was held in person in New Delhi after a gap of two years due to the coronavirus pandemic. The theme was **"Terranova: Impassioned, Impatient, and Imperilled".**

What is the Raisina Dialogue?

- The Raisina Dialogue is an annual **conference on geopolitics and geoeconomics addressing issues facing the global community.** It takes its name from the Raisina Hill, the seat of the Indian government.
- Since its inception, the Raisina Dialogue has emerged as a leading global conference on international affairs featuring the participation of heads of state, ministers, journalists, academics and researchers.
- The first Raisina Dialogue was held in **2016**.

SCIENCE AND TECHNOLOGY

1) Blue Straggler stars

Why in News:

- **Indian Institute of Astrophysics**, Bengaluru, researchers have found support for one way to **understand the aberrant behaviour of Blue Straggler stars.**
- For this, the **researchers also made use of the observations** by the UVIT instrument (UltraViolet Imaging Telescope) of **ASTROSAT**, India's first science observatory in space.

To read about ASTROSAT: ***https://officerspulse.com/astrosat/***

What are they?

- Blue stragglers are a particular type of star **seen in clusters and also, sometimes, alone.**
- These classes of stars are **observed in old, dense stellar systems such as globular clusters.** They stand out because **old stellar populations are expected to be devoid of blue (high-mass) stars which possess very short lifespans**.
- The blue stragglers in an old stellar population must therefore have formed long after the system as a whole.
- But, **Blue stragglers**, a class of stars on open or globular clusters, **stand out as they are bigger and bluer than the rest of the stars.·**
- These are a few stars that, just at the stage of their lives, when **they are expected to start expanding in size and cooling down, do just the opposite.** They **grow brighter and hotter as indicated by their blue colour,** thus standing out from the cooler red stars in their vicinity in the colour-magnitude diagram.
- Since they lag behind their peers in evolution, they are called stragglers, more specifically, blue stragglers, because of their hot, blue colour.
- **Omega Centauri** is the **most luminous and massive globular** star cluster in the **Milky Way.**

Related Information

Comparison to sun

- **Sun**, for example, is what is called a **main sequence star,** and, given its mass and age, it is expected that once it has converted all its hydrogen into helium, its core will get denser, while outer layers expand.
- So, it will bloat into a **red giant.**
- After this phase, **its fuel spent, it will shrink, becoming a smaller, cooling star** called a **white dwarf star at the end of its life.**
    - The **Sun** would **need** to be about **20 times more massive** to end its life as a black hole. In some 6 billion years **it** will **end up as a white dwarf —** a small, dense remnant of a star that glows from leftover heat. The process will start about 5 billion years from now when the Sun begins to run out of fuel.
    - The Sun will start to run out of hydrogen in its core to fuse, and it will begin to collapse. This will let the Sun start to fuse heavier elements in the core, along with fusing hydrogen in a shell wrapped around the core. When this happens, the Sun's temperature will increase, and the outer layers of the Sun's atmosphere will expand so far out into space that they'll engulf Earth.
    - **Subrahmanyan Chandrasekhar,** an eminent Indian scientist **proved** that there was an **upper limit** to the mass of a **white dwarf**. This limit, known as the **Chandra limit**, showed that stars more massive than the Sun would explode or form black holes as they died.
    - In 1983, Subrahmanyan Chandrasekhar was awarded the **Nobel Prize in Physics** for

his work on the physical processes involved in the structure and evolution of stars.

2) Strontium

What's in News:

- Microsoft said it had disrupted cyberattacks from a **Russian nation-state hacking group called 'Strontium'** after it targeted Ukrainian firms, media organisations, government bodies, and think tanks in the U.S. and the EU.

More about Strontium

- **Strontium, also known as Fancy Bear, Tsar Team, Pawn Storm, Sofacy, Sednit or Advanced Persistent Threat 28 (APT28) group**, is a highly active and prolific **cyber-espionage group**. It is one of the most active APT groups and has been operating since at least the mid-2000s, making it one of the world's oldest cyber-spy groups.

How does it attack networks?

- The group deploys **diverse malware and malicious tools to breach networks**. In the past, it has used X-Tunnel, SPLM (or CHOPSTICK and X-Agent), GAMEFISH and Zebrocy to attack targets.
- These tools can be **used as hooks in system drivers to access local passwords, and can track keystroke, mouse movements, and control webcam and USB drives**. They can also **search and replace local files** and stay connected to the network, according to a report by the U.K. National Cyber Security Centre (NCSC).
- It has **used spear-phishing and sometimes water-holing to steal information, such as account credentials, sensitive communications and documents.**
    - A **watering hole attack compromises** a site that a targeted victim visits to gain access to the victim's computer and network.

Read more about cybercrimes and attacks:

1. https://officerspulse.com/cyberattacks/
2. https://officerspulse.com/cybercrimes/
3. https://officerspulse.com/phishing/

Related Mains Question: Discuss the aspects of the government's National Cyber Security Strategy after analysing the necessity for one- https://bit.ly/3MAIhel

3) SSLV

Why in News:

- Indian Space Research Organisation (ISRO) hopes to complete all three development flights for its "baby rocket," the Small Satellite Launch Vehicle (SSLV) in 2022.

About

- The SSLV aims to cater to the market for the **launch of small satellites into Earth's low orbits** that has emerged in recent years to cater to the needs of **developing countries, universities for small satellites, and private corporations.**
- With a weight of about **110 tonnes, it is the smallest vehicle**. It will only take **72 hours to integrate**, as opposed to the 70 days it now takes for a launch vehicle.
- Small satellite launches have **so far depended on 'piggy-back' rides with big satellite** launches on the Polar Satellite Launch Vehicle (PSLV). As a result, small satellite launches have relied on ISRO finalising launch contracts for larger satellites.
- It will be used fo**r tiny satellites like nanosats and cubesats.** The SSLV's cargo capacity in Lower Earth Orbit (LEO) will be 500-700 kg, which is less than one-third the weight of the PLSV.
- It features a **three-stage solid propulsion system** and, like the PSLV and GSLV, can carry numerous satellites, albeit of a smaller size.
- It is capable of launching satellites weighing up to **500-700 kg into 500 km Low Earth Orbit (LEO) and 300 kg into Sun Synchronous Orbit (SSO).**
    - The Polar Satellite Launch Vehicle (PSLV) can launch

satellites weighing up to 1000 kg.

Significance

- It's **ideal for simultaneously launching numerous microsatellites** and supporting multiple orbital drop-offs.
- **Low cost, reduced turn-around time, flexibility in supporting many satellites**, launch on demand capability, **minimum launch infrastructure needs**, etc..
- The SSLV's development and production are anticipated to **foster increased collaboration between the space industry and private Indian enterprises**, which is a primary goal of the space ministry.
- One of the missions of the newly formed ISRO commercial branch, New Space India Limited (NSIL), is to mass-produce and manufacture the SSLV and the more powerful PSLV in India through knowledge transfers in collaboration with the corporate sector.

4) H3N8

Why in News:

- **China** has recorded its first human infection with the **H3N8 strain of bird flu.**
- The H3N8 variant has previously been detected elsewhere in the world in horses, dogs, birds and seals

What is avian influenza(bird flu)?

- **Avian influenza or bird flu** refers to the **disease caused by infection with avian (bird) influenza (flu)**
- Avian influenza is a disease caused by a virus which has **multiple strains or types**, some of which are more dangerous than others.
- Influenza is divided into three types**: A, B, C and D. Type A influenza includes most human and all avian influenza viruses.**

Method of transmission

- **Humans can be infected with avian, swine and other zoonotic influenza viruses,** such as avian influenza virus subtypes A(H5N1), A(H7N9), and A(H9N2) and swine influenza virus subtypes A(H1N1), A(H1N2) and A(H3N2).
- Human infections are primarily acquired through **direct contact with infected animals** or **contaminated environments,** these viruses have not acquired the ability of sustained transmission among humans.

Symptoms

- Avian, swine and other zoonotic influenza virus infections in humans may cause disease ranging from **mild upper respiratory tract infection (fever and cough),** early sputum production and rapid progression to severe **pneumonia**, **sepsis** with shock, **acute respiratory distress syndrome and even death.**
- Conjunctivitis, gastrointestinal symptoms, encephalitis and encephalopathy have also been reported to varying degrees depending on subtype.

There are four types of influenza viruses: types A, B, C and D:

- **Influenza A viruses infect humans and many different animals**. The emergence of a new and very different influenza A virus with the ability to infect people and have sustained human to human transmission, can cause an influenza pandemic.
- **Influenza B viruses circulate among humans and cause seasonal epidemics.** Recent data showed seals also can be infected.
- **Influenza C viruses can infect both humans and pigs** but infections are generally mild and are rarely reported.
- **Influenza D viruses primarily affect cattle** and are not known to infect or cause illness in people.

DEFENCE

1) International Intel Chiefs Meet

What's in News:

- National Security Advisor Ajit Doval will lead discussions at **India's first such conference of intelligence agency chiefs.**

About

- The conference, **modelled on the lines of the annual Munich Security Conference and Singapore's Shangri-La dialogue,** is expected to **bring together heads and deputy heads of the top intelligence and security organisations from more than 20 (mostly Western) countries and their allies.**
- The meeting takes place on the sidelines of the "Five Eyes alliance," which brings together the United States, the United Kingdom, Canada, New Zealand, and Australia to collaborate on terrorism and security matters.

Related Information

Shangri La Dialogue

- The Shangri-La Dialogue (SLD) is an **annual international security meeting** hosted by the **International Institute for Strategic Studies in Singapore, an independent think tank.**
- The Shangri-La Dialogue has grown into a **major Asia-Pacific strategic forum.**
- **Defense ministers, permanent heads of ministries, and military leaders** from Asia-Pacific countries are expected to participate, where they debate the region's most pressing **security challenges,** engage in important bilateral talks and come up with fresh approaches together.

Munich Security Conference

- Since **1963**, the **Munich Security Conference** has been an annual conference on **international security policy held in Munich, Bavaria, Germany.**
- Meetings and presentations bring together **heads of state, diplomats, and corporate executives from the world's leading democracies.**
- It is the largest meeting of its kind in the world.
- MSC has evolved into the most significant independent venue for **international security policy decision-makers to exchange ideas.**

Five Eyes (FVEY) intelligence alliance

- **Australia, Canada, New Zealand, the United Kingdom, and the United States** make up the Five Eyes (FVEY) intelligence alliance.
- The multinational UKUSA Agreement, a pact for collaborative signals intelligence cooperation, has these nations as signatories.
- The FVEY's beginnings may be **traced back to informal private meetings between British and American code-breakers** during World War II.
- It began before the United States formally entered the war, and was followed by the Allies' **Atlantic Charter of 1941**, which laid out their vision for the postwar world.

2) Top Military Spenders-2021

Why in News:

- **India was the third-highest military spender** in the world **behind the US and China** as the global defence expenditure reached an all-time high of $2.1 trillion in 2021, hitting record levels despite the coronavirus pandemic, the Stockholm International Peace Research Institute (**SIPRI**)

What the report says

- According to data published by SIPRI, the **top five military spenders—the United States, China, India, the United Kingdom, and Russia**—accounted for 62 per cent of the global military expenditure.
- SIPRI said India's military spending, amounting to **$76.6 billion in 2021, grew by 0.9 per cent from 2020 and by 33 per cent from 2012**.
    - "Amid ongoing tensions and border disputes with China and

Pakistan that occasionally spill over into armed clashes, India has prioritized the modernization of its armed forces and self-reliance in arms production"- the report said

About SIPRI

- The **Sweden-based** SIPRI is an **independent international institute** dedicated **to research into conflict, armaments, arms control and disarmament.** It was established on the basis of a decision by the Swedish Parliament and receives a substantial part of its funding in the form of an annual grant from the Swedish Government.
- Established in 1966, SIPRI **provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.**

1. ***To read the 2020 SIPRI report-*** ***https://officerspulse.com/top-military-spenders/***
2. ***To read about India's defence indigenization-*** ***https://officerspulse.com/indias-defence-indigenization/***

For doubts and queries email us at: doubts@officerspulse.com

PIB ANALYSIS

1) National Commission for Protection of Child Rights

About NCPCR

- The National Commission for Protection of Child Rights is a **statutory body** established under the Commission for Protection of Child Rights Act, 2005.
- The commission works under the aegis of the **Ministry of Women and Child development.**
- NCPCR is mandated to function for the protection and promotion of child rights. It is also mandated to monitor the implementation of the Protection of Children from Sexual Offences (POCSO) Act.
- The Commission may inquire into complaints and take *suo motu* notice of matters relating to-
    - Deprivation and violation of child rights;
    - Non-implementation of laws providing for protection and development of children;
    - Non-compliance of policy decisions, guidelines or instructions aimed at mitigating hardships to and ensuring welfare of the children and to provide relief to such children;

Constitution

- The commission consist of the following members namely:-
    - A **chairperson** who, is a person of eminence and has done a outstanding work for promoting the welfare of children; and
    - **Six members**, out of which at least two are women, are appointed by the Central Government from amongst persons of eminence, ability, integrity, standing and experience in Education; Child health, care or related fields.

Why in News?

- In order to foster sensitization regarding various aspects of the PM Cares for Children Scheme, the National Commission for Protection of Child Rights (NCPCR) organized 4 virtual Regional Conclaves on PM Cares for Children Scheme recently.
- PM Cares for Children Scheme was launched by the Prime Minister of India in 2021 to provide comprehensive support for children who have lost both their parents or legal guardians or Adoptive Parents or Surviving Parents to the COVID-19 pandemic.
- This Scheme enables the well-being of such children through health insurance, empowers them through education, and equips them for self-sufficient existence with financial support.
- The **Ministry of Women and Child Development** has been anchoring the Scheme, which is leveraging technology to identify, register and support the children through an online portal.

2) GAGAN

About GAGAN

- GAGAN is an **Indian Satellite Based Augmentation System (SBAS)** launched by the Indian government in 2015**.** GAGAN stands for **GPS Aided GEO Augmented Navigation.**
    - *SBAS is a wide area augmentation system that provides augmented accuracy and integrity to a Global Navigation Satellite Systems (GNSS) navigation signal such as GPS.*
- GAGAN is implemented to provide required accuracy, continuity, availability, and integrity to enable users/aircrafts to rely on GPS for all phases of flight.
- It was developed by the **Airports Authority of India (AAI)** and **Indian**

Space Research Organization (ISRO).

- There are **only four Space-Based augmentation systems available in the world** namely India (GAGAN), the United States (Wide Area Augmentation System- WAAS) Europe (European Geostationary Navigation Overlay Service- EGNOS) and Japan (MTSAT Satellite Augmentation System- MSAS).
- GAGAN is the **first such system developed for India and neighbouring countries in the equatorial region.**

Benefits from GAGAN

- GAGAN system is being used for **effective management of wildlife resources and monitoring of forests.**
- It can provide **navigational support** to Indian railways for signalling.
- The **Road Asset Management System (RAMS)** is likely to be developed for all National Highways in the country and a modern management system that will use the GAGAN system.
- GAGAN signals can also be used to **manage traffic** in real time to avoid traffic jams.

Why in News?

- The Airports Authority of India has successfully conducted the light trial using the GAGAN-based Localizer Performance with Vertical Guidance (LPV) Approach Procedures at Rajasthan's Kishangarh Airport.
- The successful trial is a great achievement and major milestone in the field of Air Navigation Services (ANS) in the history of the Indian Civil Aviation Sector. India is the first country in the Asia Pacific Region to achieve such a landmark.
- The LPV permits aircraft guided approaches that are operationally nearly equivalent to Cat-IILS, without the need for ground-based navigational infrastructure. The service relies on the availability of GPS and GAGAN Geo Stationary Satellites, launched by ISRO.
- The tests, at Kishangarh Airport, were performed as part of initial GAGAN LPV flight trials. After the final approval by DGCA, the procedure will be available for the usage of commercial flights.

3) Government e-Marketplace

About GeM

- Launched in 2016, the Government e-Marketplace (GeM) is a **100 percent government-owned company** setup under the aegis of the **Ministry of Commerce and Industry**.
- It is a completely paperless, cashless and system driven e-market place that enables procurement of common use goods and services with minimal human interface. GeM aims to enhance transparency, efficiency and speed in public procurement.
- GeM was developed with the technical support of the **National eGovernance Division** under the Ministry of Electronics and Information Technology.
- In 2017, the government made it **mandatory** for all the departments and ministries to source goods and services from the GeM.

Why in News?

- Procurement orders by Ministry of Defence (MoD) through Government e-Market (GeM) portal have reached an all-time high of Rs 15,047.98 crore for Financial Year 2021-22. It is a jump of more than 250 percent over the last financial year.

News in Depth

AIR NEWS

1) Index of Eight Core Industries

About ICI

- The monthly Index of Eight Core Industries (ICI) is a **production volume index.**
- The objective of the ICI is to provide an advance indication on production performance of industries of 'core' nature. These industries are likely to impact on general economic activities as well as industrial activities.
- The Eight Core Industries- **Electricity, steel, refinery products, crude oil, coal, cement, natural gas and fertilizers-** comprise **40.27 per cent of the weight of items included in the Index of Industrial Production (IIP).**
- **Industry Weight (In percentage)**
    - Petroleum & Refinery production - 28.04
    - Electricity generation - 19.85
    - Steel production - 17.92
    - Coal production - 10.33
    - Crude Oil production - 8.98
    - Natural Gas production - 6.88
    - Cement production - 5.37
    - Fertilizers production - 2.63
- ICI is released by the **Office of Economic Advisor**, under the Ministry of Commerce and Industries. The base year of the ICI is **2011-12.**

Why in News?

- According to the latest data released by the Ministry of Commerce and Industry, the cumulative growth rate of Index of Eight Core Industries (ICI) stood at 10.4% during April-March 2021-22 compared to the same year in the previous fiscal.

THE HINDU EDITORIALS

1) Energy independence through hydrogen

Background:

- India's **Green Hydrogen Policy** released on February 17, 2022 has addressed several critical challenges such as open access, waiver of inter-state transmission charges, banking, time-bound clearances, etc., and is expected to further boost India's energy transition.
- India's **per capita energy consumption** is about **one-third of the global average** and **one-twelfth of the U.S.**
- Increasing growth and economic prosperity would significantly increase India's energy appetite furthering import dependence.
- The new age fuel, hydrogen, is touted as India's **gateway to energy independence.**
- Hydrogen has a multifaceted role to play in the futuristic energy landscape, be it energy storage, long-haul transport, or decarbonisation of the industrial sector.

Hydrogen, a game-changer:

- Hydrogen can be **stored on a large scale** and for a longer duration explicitly affirming its huge potential to become a great balancer to the ever-increasing supply of variable renewable energy.
- It will complement and accelerate renewables into India's clean energy transition, thereby supporting India's ambitious plan to achieve **500 GW renewable capacity by 2030.**
- Hydrogen has a major role to play in the **decarbonisation of India's transport sector.**
- The advantages of fuel cell vehicles over battery electric vehicles are **faster fueling and long-driving range** thereby making them ideal for long-haul transportation which is a major constraint with Li-Ion batteries.
- In the industrial segment, hydrogen can decarbonise 'hard-to-abate' sectors such as iron and steel, aluminium, copper etc.
- It is a huge prospect to produce fuels such as **methanol**, **synthetic kerosene** and **green ammonia**.
- India's hydrogen consumption was around 7 Mt in 2020 and according to **The Energy and Resources Institute (TERI),** it is anticipated to leapfrog to about 28 Mt in 2050.
- Apart from the ever-increasing electricity demand, the high cost of hydrogen manufacturing and water scarcity could also pose a challenge. Production of **1 kg of hydrogen** by electrolysis requires around **nine litres of water.**
- Hydrogen fulfills the three Es of India's energy road map **energy security, energy sustainability and energy access** and India should strive to seize one more E, viz. **economic opportunity** so that industry can be encouraged to its full potential.

Five-step strategy:

On the **demand side**, a five-step strategy should be devised.

1. To create an initial demand, a mandate should be given to mature industries such as **refining and fertilisers,** with adequate incentives.
2. Industries manufacturing low emission hydrogen-based products inter alia green steel and green cement need to be incentivised by government policies.
3. **Blending hydrogen** with natural gas can act as a big booster shot which can be facilitated by framing blending mandates, regulations and promoting H-CNG stations.
4. To promote FCEVs, **hydrogen fuel stations** may be planned on dedicated corridors where long-distance trucking is widespread.
5. The concept of **carbon tariffs** needs to be introduced on the lines of European countries.

On the **supply side** too, a five-step strategy should be devised.

1. Investment in **R&D** should be accelerated to bring its cost at par with fossils.
2. **Sustainable Alternative Towards Affordable Transportation (SATAT)** scheme with a target to produce 15 MMT of compressed biogas could be leveraged by exploring biogas conversion into hydrogen.
3. To commercialise and scale-up nascent technologies, a **Viability Gap Funding (VGF)** scheme may be introduced for hydrogen-based projects.
4. To secure affordable financing, electrolyser manufacturing and hydrogen projects need to be brought under **Priority Sector Lending (PSL).**
5. Since two dominant cost factors for green hydrogen are renewable energy tariffs & electrolyser costs, and India has the advantage of one of the lowest renewable tariffs; the thrust should be on reducing the cost of electrolysers by implementing the **Production Linked Incentive (PLI) scheme**. This could help India become a global hub for electrolyser manufacturing and green hydrogen.

- On the **transportation front,** ammonia, having high energy density, could be promoted as a mode of transportation.
- A hydrogen transportation system could also be built on the foundation created for natural gas by using its existing infrastructure. Additionally, hydrogen transportation projects may be integrated with the **PM Gati Shakti Master Plan.**

Conclusion:

- Hydrogen could completely transform India's energy ecosystem by shifting its trajectory from an **energy importer to a dominant exporter** over the next few decades.
- With hydrogen, India could lead the world in achieving the **Paris Agreement**'s goal to limit global warming to **2°C** compared to pre-industrial levels.
- Hydrogen could lay the foundation of a new India which would be energy-independent; a **global climate leader and international energy power**.

2) Floundering polio eradication

Background:

- The recent news of **wild poliovirus type 1 (WPV1)** in Malawi imported from Pakistan and of polio outbreak in Israel caused by **'circulating vaccine-derived poliovirus type 3' (cVDPV3)** are visible signs of floundering polio eradication.
- When a virus in oral polio vaccine (OPV) de-attenuates by mutations, acquiring transmission efficiency and neuro-virulence, it is called cVDPV.
- The **World Health Organization** assumed the eradication target, assigned by unanimous resolution in the **World Health Assembly (WHA),** the forum of Ministers of Health of all nations.
- The resolution was perfectly timed: Rotary International launched its **'PolioPlus'** project in 1985, to provide polio vaccines to under-five children of all developing countries before 2005.
- Having failed the target of 2000, WHO revised it every 4-5 years; now it is **2026**, as in the strategy document.

WHO's budget estimate:

- The WHO's original budget estimate for eradication was about **$5 million**, but since 2000, the annual spending is about $1 billion, raised through Rotary, Gates Foundation and rich country governments.
- India conducts **one annual national** and **two sub-national** pulse immunisation campaigns with bivalent (type 1 and 3) OPV (bOPV) for all children below five years, in addition to routine immunisation with five doses — totalling 10 to 15 doses per child in different States.
- Every paediatric textbook warns that on rare occasions, OPV itself may cause **vaccine-associated paralytic polio (VAPP)** in vaccinated children (vaccinated VAPP) and unvaccinated child-contacts (contact VAPP).
- The commonest cause of vaccinated VAPP is **type 3 vaccine virus** and for contact VAPP, it is type 2.
- **To avoid VAPP**, rich countries immunise children with the

inactivated poliovirus vaccine (IPV), which is completely safe.

Benefit-risk balance:

- Against high risk of deaths due to COVID-19, vaccines with rare safety problems, including death, scored well on benefit-risk analysis.
- When the risk of WPV polio was annually two per 1000 pre-school children, and the risk of VAPP in one per 1,50,000 birth cohorts, the **benefit was favourable for OPV.**
- When the **risk of death or paralysis falls** low, the **benefit-risk ratio reverses** — as for COVID-19, so also for polio.
- After WPV-2 was eradicated in 1999, the benefit of type 2 vaccine virus became defunct.
- The ethical problem of risk without benefit was neglected until cVDPV2 caused several outbreaks, beginning in 2006, forcing the **tOPV (trivalent oral polio vaccine)** to bOPV switch in 2016.
- WHO experts recommended **one dose of IPV at 14 weeks of age to** mitigate further risks of cVDPV2 outbreaks.
- But that was too little too late, as more countries continue with cVDPV2 outbreaks than have WPV type 1.
- After **wild virus type 3 was globally eradicated in 2012**, vaccine virus type 3 had to be removed to avoid VAPP.
- No agency has any right to cause VAPP in the name of eradication, especially after WPV-3 has been eradicated.
- In Israel, cVDPV3 emerged and caused the outbreak.
- Only seven children were paralysed, all unvaccinated.
- The risk of paralysis with WPV-3 is one in 1,000 infected children — so at least 7,000 unvaccinated children were infected.
- Israel's population is less than 10 million, but ours is 1,400 million.

Conclusion:

- The probability of cVDPV3 outbreak is low in India, but on account of our population size of 1,400 million, its impact is likely to be enormous.
- India must withdraw type 3 and **continue monovalent type 1 OPV**, which also must be withdrawn after reaching 85-90% coverage with IPV, **three doses per child**.

INDIAN EXPRESS EXPLAINED

1) State of (un)employment in India

Why in the news?

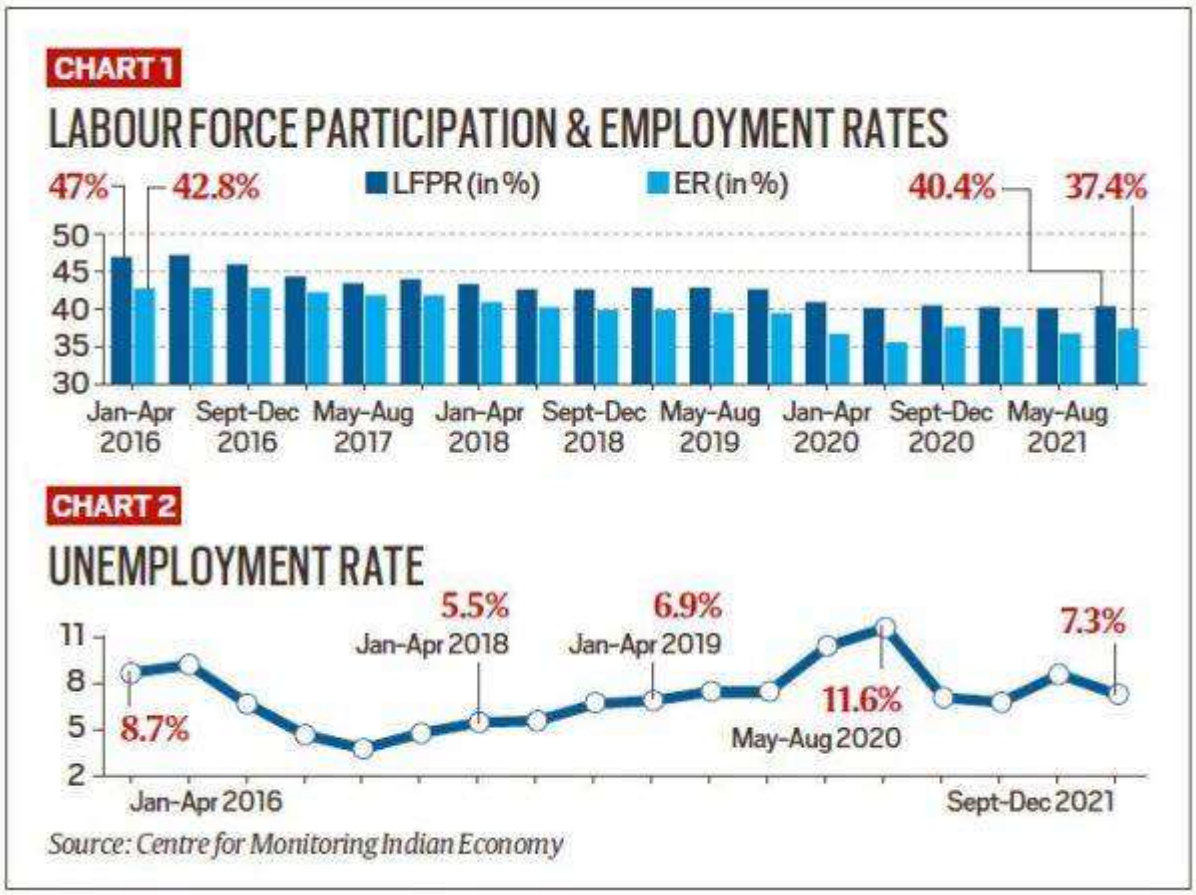
- Recent Data from the Centre for Monitoring Indian Economy (CMIE) shows that India's labour force participation rate (LFPR) **has fallen to just 40%** from an already low 47% in 2016.
- This suggests not only that more than half of India's population in the working-age group (15 years and older) is deciding to sit out of the job market, but also that this proportion of people is increasing.

What is Labour Force Participation Rate?

- According to the CMIE, the labour force consists of persons **who are of age 15 years or older**, and belong to either of the following two categories:
  - are employed
  - are unemployed and are willing to work and are actively looking for a job.
- There is a crucial commonality between the two categories — they both have people "demanding" jobs.
- The **Unemployment Rate (UER)** is the number of unemployed as a proportion of the labour force.

What is the significance of LFPR in India?

- The **world average of LFPR is around 60%.** In India, it has been sliding over the last 10 years and has shrunk from 47% in 2016 to just 40% as of December 2021.



Why is India's LFPR so low?

- The main reason for India's LFPR being low is the **abysmally low level of female LFPR.** According to CMIE data, as of December 2021, while **the**

male LFPR was 67.4%, the female LFPR was as low as 9.4%.

- In other words, less than one in 10 working-age women in India are even demanding work. Even if one sources data from the World Bank, India's female labour force participation rate is around 25% when the global average is 47%.

Why do so few women demand work?

- Three primary reasons includes about the essentially about the **working conditions** — such as law and order, efficient public transportation, violence against women, societal norms etc — being far from conducive for women to seek work.
- Secondly, it's about to do with **correctly measuring women's contribution to the economy.** For example, Care Economy of women is not calculated
- Lastly, it is also a question of **adequate job opportunities for women.**

INFOGRAPHIC OF THE WEEK

1) SMILE SCHEME

OFFICERS IAS ACADEMY™
IAS ACADEMY BY IAS OFFICERS

About the Scheme

The Ministry of Social Justice & Empowerment has launched the Central Sector Scheme "SMILE- Support for Marginalised Individuals for Livelihood and Enterprise".

The umbrella scheme is designed to **provide welfare measures to the Transgender community and the people engaged in the act of begging.**

For more such graphic learnings, visit https://officerspulse.com/infographics/

For free learning, visit www.officerspulse.com

For more such graphic learnings, visit https://officerspulse.com/infographics/

For free learning, visit www.officerspulse.com

For more such graphic learnings, visit https://officerspulse.com/infographics/

For free learning, visit www.officerspulse.com

For more such graphic learnings, visit https://officerspulse.com/infographics/

For free learning, visit www.officerspulse.com

References:

POLITY

- https://www.thehindu.com/news/national/vice-president-m-venkaiah-naidu-bats-for-amending-anti-defection-law-to-plug-loopholes/article65351005.ece
- https://www.livelaw.in/top-stories/it-rules-2021-supreme-court-lists-centres-transfer-petitions-connected-cases-on-may-9-197279

ENVIRONMENT

- https://www.thehindu.com/news/national/kerala/invasive-species-threatens-wildlife-habitats-of-western-ghats/article65345281.ece
- https://www.cbd.int/idb/2009/about/what/
- https://www.thehindu.com/sci-tech/energy-and-environment/carbon-neutral-palli-village-is-our-living-example-toglasgow-goals-says-pm-modi/article65350800.ece
- https://www.thehindu.com/news/national/minister-urges-private-sector-to-join-fight-against-malaria/article65353586.ece
- https://www.who.int/news-room/fact-sheets/detail/malaria
- https://www.who.int/india/health-topics/malaria/summary-of-world-malaria-report-2021
- https://economictimes.indiatimes.com/news/politics-and-nation/india-only-high-endemic-country-to-report-malaria-cases-decline-of-17-6-in-2019-over-2018-government/articleshow/79529317.cms?from=mdr
- https://www.thehindu.com/news/national/tamil-nadu/the-last-hope-for-vultures/article65363310.ece
- https://www.thehindu.com/news/national/despite-railways-plan-bee-elephants-continue-to-die-on-rail-tracks-48-killed-since-2019/article65363916.ece
- https://www.livemint.com/news/india/indian-railways-using-bees-to-buzz-off-elephants-from-tracks-1562779225517.html
- https://www.thehindu.com/sci-tech/energy-and-environment/explained-what-is-causing-the-intense-heat-in-north-west-central-and-east-india/article65369867.ece
- https://www.hindustantimes.com/india-news/heatwave-explained-what-is-a-heatwave-and-how-to-protect-yourself-101651208042577.html
- https://www.thehindu.com/sci-tech/energy-and-environment/heatwaves-linked-to-man-made-climate-change-tnq-janelia-webinar/article65367764.ece

ECONOMY

- https://www.thehindu.com/business/Economy/cabinet-clears-higher-subsidy-for-non-urea-fertilisers/article65360479.ece
- https://www.thehindu.com/business/Industry/explained-how-quickly-can-india-move-away-from-coal/article65347728.ece
- https://www.thehindu.com/business/nod-for-investment-proposals-from-5-6-chipmakers-in-6-8-months-vaishnaw/article65367365.ece

INTERNATIONAL RELATIONS

- https://www.thehindu.com/todays-paper/tp-international/countries-will-have-to-justify-veto-votes-at-un/article65358508.ece
- https://www.thehindu.com/news/national/union-cabinet-approves-452612-crore-for-kwar-hydro-power-project-in-jammu-and-kashmir/article65359864.ece
- https://www.thehindu.com/news/national/raisina-dialogue-2022-significance-explained-detail-flagship-foreign-policy-conference/article65353541.ece

SCIENCE AND TECHNOLOGY

- https://dst.gov.in/blue-straggler-bigger-and-bluer-star-formed-when-one-star-eats-another
- https://astronomy.swin.edu.au/cosmos/b/blue+stragglers

- https://www.thehindu.com/sci-tech/science/what-makes-blue-straggler-stars-tick/article65344766.ece
- https://www.thehindu.com/sci-tech/technology/tackling-strontium-a-cyber-espionage-group/article65350819.ece
- https://www.financialexpress.com/lifestyle/science/isro-sslv-small-satellite-launch-vehicle-a-game-changer/2416941/
- https://www.nsilindia.co.in/sslv-manufacturing
- https://indianexpress.com/article/explained/explained-everything-we-know-about-isros-new-sslv-programme-7742846/
- https://indianexpress.com/article/world/china-reports-first-human-case-of-h3n8-bird-flu-7888673/

DEFENCE

- https://www.thehindu.com/news/national/doval-to-lead-first-international-intel-chiefs-meet-in-delhi/article65349074.ece
- https://indianexpress.com/article/india/global-military-spending-india-china-russia-7885931/

ART AND CULTURE

- https://indianexpress.com/article/india/pms-red-fort-address-to-mark-birth-anniv-of-guru-tegh-bahadur-7875686/
- https://www.thehindu.com/news/national/event-at-red-fort-release-of-coin-and-stamp-to-mark-400th-birth-anniversary-of-guru-tegh-bahadur/article65332385.ece

PIB

- https://pib.gov.in/PressReleasePage.aspx?PRID=1817808
- https://pib.gov.in/PressReleasePage.aspx?PRID=1818719
- https://pib.gov.in/PressReleasePage.aspx?PRID=1818790
- https://pib.gov.in/PressReleasePage.aspx?PRID=1818764
- https://pib.gov.in/PressReleasePage.aspx?PRID=1819025
- https://pib.gov.in/PressReleasePage.aspx?PRID=1819197

AIR

- https://newsonair.gov.in/News?title=Index-of-Eight-Core-Industries-grew-4.3%25-in-March%2C-increases-10.4-%25-during-2021-22-FY%3A-Govt-data&id=440073

EDITORIALS

- https://www.thehindu.com/opinion/op-ed/energy-independence-through-hydrogen/article65359780.ece
- https://www.thehindu.com/opinion/op-ed/floundering-polio-eradication/article65350817.ece

INDIAN EXPRESS

- https://indianexpress.com/article/explained/unemployment-labour-force-participation-rate-india-economy-explained-7890638/