

Daily Pre PARE

(Current Affairs Summary for Prelims Exam)

India Patents Report

❖ Context

- Recently, the **India Patents report** was launched by the **National Association of Software and Services Companies (Nasscom)**.

Major Findings of the Report

- Technology innovation is gaining pace in India with Indian companies having **filed 1,38,000 tech patents in India from 2015 to 2021**.
- **USA a Key Market**
 - The USA remains a **key export market for India**.
 - Over **9,500 patents were filed** by India domiciled companies in the USA between **2015-2021**.
 - It is an **increase of 47 per cent** over 2015 and 2019.
 - **Majority patents** filed in the USA in 2020-21 by India domiciled companies **were in the technology domain**.
- **Role of Start-Ups**
 - Over **60% of the technology patents were filed by Indian companies and start-ups** while **16.7%** of the tech patents were filed by Individual inventors/Academia-Research.
 - More than **400 technology patents were filed by Indian start-ups** during 2015-2021.
 - It is an **increase of 45 per cent** from 280 patents in the 2015-2019 period.
 - 21 percent of the tech patents were related to Software Applications and Healthcare and Medical Devices.

● **Emerging Technologies**

- Over **50 per cent** of the patents filed during 2015-2021 were **related to emerging technologies**.
- **AI patents** more than doubled in the period 2015-2021 compared to 2015-19.
- Over **1,300 patents were filed in the AI domain** during 2015-2021.
- **Cloud Computing** accounted for a growth of 33.6 percent while **cyber security** accounted for 27.4 percent.

About Nasscom

- It is an Indian **non-governmental trade association and advocacy group**, focused mainly on the **technology industry of India**.
- It is a **non-profit organization**.
- Established in **1988**.
- Members of NASSCOM provide **software development, software services, IT-enabled/BPO services**.
- NASSCOM's role has primarily been to **ensure availability of best possible service quality**, and enforcement of intellectual property rights, in the Indian software and BPO industry.
- In 2013, NASSCOM initiated a program **promoting 10,000 startups in India by 2023**.

Hepatitis B

❖ Context

- Recently, a series of **unexplained cases of Hepatitis B in children** has taken over the world.

Key Highlights

- Many countries including the **US and UK reported mysterious cases** of a few children being diagnosed with Hepatitis B.
- WHO said that **at least 169 cases were recorded** of children being diagnosed with Hepatitis B.
- Most of these cases were found in children as young as one month and up to 16-year-olds.
- As per WHO report about **17 children required a liver transplant** and at least one child had died of the disease.
- The viruses found in affected children were not any of the usual viruses that are linked to Hepatitis A, B, C, D, E.

- Instead, **Adenovirus has been found in at least 74 cases worldwide**.

Adenovirus

- Adenovirus is a **group of viruses**.
- It commonly **causes cold or flu-like symptoms**, fever, sore throat, acute bronchitis, pneumonia, conjunctivitis, acute inflammation of the stomach, diarrhoea, vomiting, nausea and stomach pain.
- It is **known to spread from one person to another through close contact**, coughing, sneezing etc.

- There are more than **50 types of adenoviruses**.
- **Type 41 adenovirus** is suspected of causing Hepatitis B in children.

Hepatitis B

- **About**
 - Hepatitis B is an **infection** in the liver which happens because of the Hepatitis B virus or HBV.
- **Symptoms**
 - The most common symptoms of Hepatitis B are **jaundice, fever, fatigue that lasts for weeks or even months, vomiting, loss of appetite, and pain in joints or belly**.
 - There is a fair chance that the symptoms.

are not visible for one to six months since you catch the virus.

- **Transmission**
 - The virus usually spreads through blood, semen or other body fluids.
- **Cure**
 - It can be **prevented or protected against through vaccination**.
- **Threats**
 - When it is acute, the virus lasts a small time and doesn't always necessarily need treatments.
 - Although it **can get serious and lead to life-threatening diseases** like organ scarring, liver failure and even cancer.

News at a Glance

Tax Collection



❖ **Context**

- India's **net direct tax collections amounted to ₹14,09,640.83 crore** for FY22.

❖ **Key Highlights**

- It is the **highest collection ever**, signaling that the Indian economy has bounced back after two years of the pandemic.
- As against ₹14.09 lakh crore this year, India's **tax collection in 2020-21 was only ₹9.45 lakh crore**.
- In a single year, we moved upward by nearly ₹4.5 lakh crore, registering a **growth of 49%**.
- **Gross direct tax collections** (before adjusting for refunds) grew 32.8% to ₹16,34,454.95 crore in FY22 compared with ₹12,31,270.52 crore in FY21.
- More than **7.14 crore I-T returns were filed for 2021-22** on the e-filing portal, compared to **6.97 crore filed for 2020-21**.

➤ **Side Note**

■ **Total Tax Collection**

- India's tax collections soared to a record high of **Rs 27.07 lakh crore** in the fiscal year ended March 31, 2022.
- Budget estimate was of Rs 22.17 lakh crore.

■ **Indirect taxes**

- Indirect tax mop-up was Rs **12.90 lakh crore**.
- It stood Rs 1.88 lakh crore higher than the budget estimate (budget estimate was of Rs 11.02 lakh crore).
- 30 percent growth.

■ **The tax-to-GDP ratio**

- It jumped to **11.7 per cent in FY22 from 10.3 percent in FY21**.
- This was the **highest since 1999**.
- **Direct taxes are 6.1% of GDP, and indirect taxes are 5.6%**.

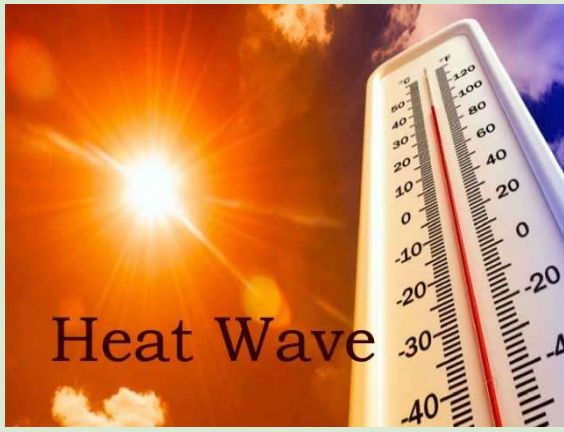
Heat Wave

❖ **Context**

- Severe heat conditions have been consistently reported **over large parts of India since the beginning of the summer season** in March this year.
- The country has **already seen four heatwaves early in the summer of 2022**, and no immediate respite is expected.

❖ **Key Highlights**

- **Qualitatively**, a heat wave is a condition of **air temperature which becomes fatal to the human body when exposed**.



- **Quantitatively**, it is defined based on the **temperature thresholds over a region** in terms of actual temperature or its departure from normal.
- In certain countries it is defined in terms of the **heat index based on temperature and humidity** or based on extreme percentile of the temperatures.
- **Criterion for Declaring Heat Wave**
 - Heat wave is considered if the **maximum temperature of a station reaches at least 40 degree Celsius** or more for **Plains** and at least **30 degree Celsius or more for Hilly regions**.
- **Criterion Based on Departure from Normal**
 - **Heat Wave**- Departure from normal is 4.50 degree Celsius to 6.40 degree Celsius
 - **Severe Heat Wave**- Departure from normal is > 6.40 degree Celsius.
- **Criterion Based on Actual Maximum Temperature**
 - Heat Wave- When actual maximum temperature ≥ 45 degree Celsius.
 - Severe Heat Wave- When actual maximum temperature ≥ 47 degree Celsius.
 - If the above criteria met at least in 2 stations in a Meteorological sub-division for at least two consecutive days and it declared on the second day.

Montelukast



❖ Context

- Recently, a **study by Indian Institute of Science (IISc)** researchers has found that a widely available drug, used for treatment of asthma and allergies, can also **block a protein that is key to replication of SARS-CoV-2, the virus that causes Covid-19**.

❖ Key Highlights

- The drug, montelukast, is an **oral treatment** given to prevent wheezing, difficulty breathing, chest tightness, and coughing caused by asthma, and also used to prevent breathing difficulties during exercise.
- Montelukast is **prescribed in India by physicians**.
- It is readily **available as tablets and syrup (for kids)** in pharmacy shops under different brand names.
- **Antiviral Activity**
 - When it infects the human cell, the **coronavirus releases a protein called Nsp1**, which is **key to its replication**.
 - The viral protein binds to the host cell's protein-making machinery, called the **ribosome**.
 - If the ribosome is blocked, then the host cell is unable to synthesize proteins needed to fight the viral infection.
 - This helps in the establishment of viral infection.
 - **Targeting Nsp1**, therefore, can reduce the damage inflicted by the virus.
 - And the IISc researchers found that **montelukast binds strongly to Nsp1, blocking its access to the ribosome**.

Daily Current Affairs

DIR-V program

❖ Context

- The **Ministry of Electronics & IT** launched the **Digital India RISC-V (DIR-V)** program

❖ Key Highlights

Aim

- The government has set a timeline to **commercially roll out the first indigenous chipsets by 2023-24.**
- To create future generations of microprocessors that will serve the need of India's strategic focus on **mobility, computing and digitization.**
- At least a few companies adopt their product designs to DIR-V products Shakti and Vega before 2023-24 and start manufacturing and incorporating chips in the products.

Key highlights

- The initiative is part of the government's Rs 76,000 crore effort to build a semiconductor ecosystem in the country.
- **IIT Madras and the Centre for Development of Advance Computing (CDAC) have developed two microprocessors named Shakti and Vega respectively** using Open Source Architecture under the aegis of the **Microprocessor Development Programme** of the Ministry of Electronics and IT.

Strategy and Implementation

- The government has appointed the IIT Madras director as chief architect and a CDAC Trivandrum Scientist as programme manager of the DIR-V programme.
- **Consolidate and leverage the ongoing efforts** in the country with an **integrated multi-institutional and multi-location team.**
- **Finalise the formal architecture and target performance** of chipset.
- **Support startups to help them design and develop semiconductors** and enable mass production in partnership with major global manufacturing.
- India is also planning to join the **RISC-V International** as Premiere Board Member to collaborate, contribute and advocate India's expertise with other global RISC-V leaders.

RISC-V

- It is an **open standard instruction set architecture (ISA)** based on established **reduced instruction set computer (RISC) principles.**
- Unlike most other ISA designs, RISC-V is provided under open source licences that do not require fees to use.
- The key operational concept of the RISC computer is that **each instruction performs only one function** (e.g. copy a value from memory to a register).

News in Between the Lines

Veto Initiative Resolution



❖ Context

- UN General Assembly adopted a resolution - "**Standing mandate for a General Assembly debate when a veto is cast in the Security Council**" - by consensus without conduct of voting procedure.

❖ Key Highlights


- The resolution decides that the **President of General Assembly shall convene a formal meeting within 10 working days** of the casting of a veto by one or more permanent members of the SC.
- The **Assembly will hold a debate** on the situation as to which the veto was cast.
- The resolution was tabled by Liechtenstein, together with over 70 co-sponsors, including US.

❖ India's stand on the resolution

- India abstained on resolution.

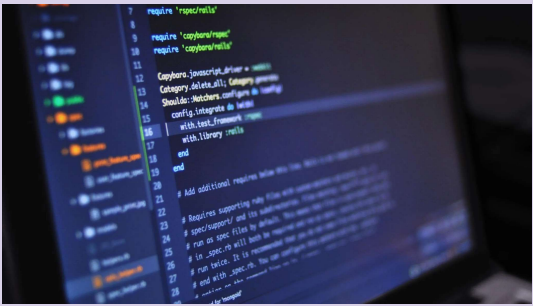
- According to India, there was **lack of inclusivity** in the manner the resolution was brought.
- India also pointed out that all five permanent members (of the UNSC) have used the veto over the last 75 years to achieve their respective political ends.
- India also **raised doubts about the efficacy of the resolution**, saying that mechanisms are already in place enabling the members of the UNGA to convene on an "emergency basis" to discuss or even take action on issues that reach a stalemate in the UNSC.

TREM stage norms



- ❖ **Context**
 - A formal notification extending the deadline for implementing the Trem Stage-IV emission norms for the farm sector to 1 October is likely to be issued soon.
- ❖ **Key highlights**
 - The **Ministry of road transport and highways** had notified amendments to the **Central Motor Vehicle Rules 1989**, for implementing the Trem Stage-IV norms for **tractors, combine harvesters, and power tillers** from October 2020. The deadline was deferred to October 2021 and then to **March 2022**.
 - Stricter emission norms for farm equipment would mean that the prices of these equipment would have to be increased by 10-20% for the extra specifications.
 - At a time inflation is already high, raising the cost of equipment may result in squeezing farmers' income.
- ❖ **About the norms**
 - The government had first come up with **Bharat (Trem) Stage I emission standards** for agricultural **tractors** in **1999**.
 - In **March 2018**, India also adopted **Bharat Stage (CEV/Trem) IV - V emission standards** for **diesel nonroad engines** used in construction and agricultural equipment.
 - The Bharat Stage (CEV/Trem) IV emission standards are aligned with EU Stage IV standards, while the Bharat Stage (CEV/Trem) V standards are aligned with EU Stage V. **CEV stands for construction equipment vehicles**.
 - In **September 2020**, the standards for **CEV and Trem were separated**. For farm equipment the standards are Trem Stage IV and V, which follow emission parameters that are different from those for CEVs.

Non-compete pact



- ❖ **Context**
 - The office of the **Chief Labour Commissioner, Ministry of Labour & Employment**, Government of India, has issued a notice to Infosys asking it to appear before it for a discussion regarding a complaint by a union, on non-compete clauses in the company's employment contracts.
- ❖ **About the pact**
 - Infosys had recently asked its employees to agree to a clause, which **bars them from working for the same customer with rival firms, till six months after they quit** the company.
 - The competing firms named in the clause include Accenture, TCS, IBM, Wipro and Cognizant.
 - It also bars them **working for the same customers, who they had serviced while at Infosys in the previous 12 months**.
 - According to the union, these clauses are illegal and violative of section 27 of the Contract Act.
- ❖ **Section 27 of the Indian Contract Act 1872**
 - It says that "Every agreement by which any one is restrained from exercising a lawful profession, trade or business of any kind, is to that extent void".

National Mobile Monitoring System



❖ Context

- A platform of five unions of agriculture workers has said that the Union Rural Development Ministry's decision to use the National Mobile Monitoring System to take real time attendance of MGNREGS workers is an attempt to further dilute the scheme.

❖ About the system

- The App was **launched by Ministry of Rural Development in May 2021.**
- Through the new system, the Centre takes **real time attendance** of workers at MNREGA worksites, along with **geo-tagged photographs** of workers **twice a day, one before 11 am and the second after 2 pm.**
- The system is applicable for the MGNREGA workers for all the States/ Union Territories.