

EUROPE'S JUICE MISSION

Why in news?

- The European Space Agency (ESA) is all set to launch the Jupiter Icy Moons Explorer (Juice) mission from its spaceport in French Guiana on an Ariane 5 launcher.
- Planned to reach Jupiter in 2031, the mission aims to carry out a detailed exploration of the Solar System's largest planet and its icy moons, which potentially have habitable environments.

What is the Jupiter Icy Moons Explorer (Juice) mission?

• About

- The Juice mission will make detailed observations of the giant gas planet and its three large ocean-bearing moons — Ganymede, Callisto and Europa.
 - It will do so by using remote sensing, geophysical and in situ instruments.
- Scientists know that these three moons of Jupiter possess icy crusts, which they believe contain oceans of liquid water underneath, **making them potentially habitable**.
- Juice mission will help probe these water bodies by creating detailed maps of the moons' surfaces and enable the scientists, for the first time, to look beneath them.
- Another primary goal of the mission is to create a comprehensive picture of Jupiter by trying to understand its origin, history and evolution.
- Juice will also analyse the chemistry, structure, dynamics, weather, and climate of Jupiter and its ever-changing atmosphere.

• What will the mission do?

- Although the mission will examine all three moons, the main focus will be on **Ganymede**, as it is the largest moon in the Solar System.
 - Ganymede is larger than Pluto and Mercury. It is the only one to generate its own magnetic field.
- The mission will use its suite of ten sophisticated instruments to measure:
 - how Ganymede rotates, its gravity, its shape and interior structure, its magnetic field, its composition, and to penetrate its icy crust using radar down to a depth of about nine km.

What other missions will study Jupiter?

- Juice is not the only mission investigating Jupiter and its moons.
 - So far, two other spacecraft have examined Jupiter:
 - **Galileo probe**, which orbited the gas giant between 1995 and 2003, and
 - **Juno**, which has been circling the planet since 2016. Its focus has been the planet itself rather than its moons.
 - Another new NASA mission, Europa Clipper, is being launching in October 2024. Europa Clipper would arrive at Jupiter in 2030 and aims to study its Europa moon.
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NATIONAL CAREER SERVICE

Around 35.7 lakh vacancies have been reported by employers on the National Career Service portal during the year 2022-23 compared to around 13 lakh vacancies in 2021- 22.



About the National Career Service portal:

National Career Serv • National Career Service is one of the **mission-mode projects** under the umbrella of the **E-Governance Plan**.

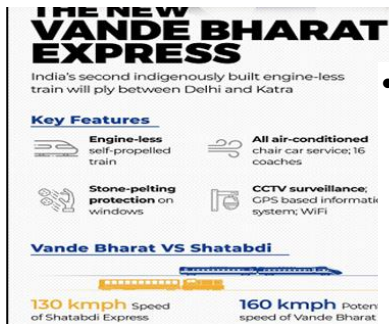
- It was launched in the year 2015.
 - **Objectives:** It works towards **bridging the gap between job-seekers and employers**, candidates seeking training and career guidance and agencies providing training and career counselling by transforming the National Employment Service.
 - It provides a host of **career-related services** such as dynamic job matching, career counselling, job notifications, vocational guidance, and information on skill development courses, internships and alike.
 - The focus areas for the National Career Service platform are listed below:
 - Enhancing **Career and employment** opportunities
 - **Counselling and guidance** for career development
 - Focusing on decent employment
 - Enhancing female labour force participation
 - Encouraging entrepreneurial endeavours
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- **Nodal Agency:** The project is being implemented by the **Directorate General of Employment, Ministry of Labour & Employment.**

VANDE BHARAT EXPRESS: HOW THE VANDE BHARAT IS SET TO TRANSFORM COMMUTE IN THE VALLEY

Why in News?

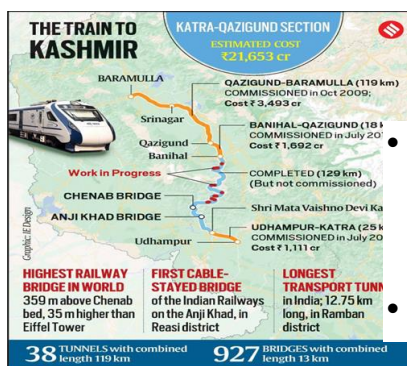
- According to the Union Railway Ministry, a Vande Bharat Express will run between Jammu and Kashmir soon as the work on the 272-km Udhampur-Srinagar-Baramulla Railway Line (USBRL) is completed.



About the Vande Bharat Express:

- Formerly known as **Train 18**, it is an **electric multiple-unit, low cost, semi-high speed** train designed by Research Designs & Standards Organisation (**RDSO**), manufactured by the **Integral Coach Factory (ICF, Chennai)** and operated by **Indian Railways**.
- The train has achieved a **maximum speed of 180 km/h (110 mph)** and went into service on 15 February 2019 (New Delhi- Kanpur-Allahabad-Varanasi route).
- The latest (12 April, 2023) and 15th Vande Bharat Express train will ply between Jaipur and Delhi Cantt railway station.
- It was made with **low-cost maintenance and operational optimisation in mind.**

The Vande Bharat Express in Jammu and Kashmir:



History of the project:

- The first railway line in the former princely state of Jammu and Kashmir was built by the British in **1897** over a distance of 40-45 km between Jammu and Sialkot in the plains.
- After Partition, **Sialkot went to Pakistan**, and Jammu was

disconnected from the rail network of India.

- **Until the inauguration of the Pathankot-Jammu line in 1975**, the railway station nearest to Jammu and Kashmir was Pathankot in Punjab.
- In **1983**, work began on a railway line between Jammu and Udhampur. The project was completed in 2004 and has 20 major tunnels, and 158 bridges.
- With work underway on the Jammu-Udhampur line, the government approved (1995) the extension of the line from Udhampur to Srinagar, and then Baramulla - **USBRL project**.
- The project was declared (2002) as a **national project** on account of its being among the most challenging works undertaken by the Indian Railways after Independence.

Challenges and innovations:

- **The Himalayas are young** and the **geologically unstable** Shivalik Hills and Pir Panjal mountains lie in the **seismically most active Zones IV and V**.
- The terrain, which sees **heavy snow** in winter, presents serious challenges in the construction of **bridges and tunnels**.
- In view of the challenges in the construction, engineers of the Railways devised a novel **Himalayan Tunneling Method (HTM)**.
- Under this, **horseshoe-shaped tunnels were constructed** instead of the usual D-shaped ones.
- The site comes down in a **curve** giving strength to the structure where the soil above it is loose.
- The broad-gauge railway line will have **5-1% ruling gradient, avoiding the need for bank engines** in a mountainous region.
- The trains will be powered by **diesel locomotives for now**, but there is a provision for electrification in the future.
- Trains can run at speeds up to **100 km/h** for the entire length of the journey.

Safety and security:

- All the major bridges, tunnels, and railway stations will be illuminated and have **CCTV**
- The track and tunnels have been designed to require **as little maintenance as possible**.

Development benefits:

- It will **bring down the travel time** between Srinagar and Jammu to between three and three-and-a-half hours from the five to six hours that it takes by road currently.
- It will **provide a reliable and cost-effective all-weather alternative** to the Jammu-Srinagar national highway that is frequently shut down by **landslides**.
- It will **facilitate hassle-free transport of goods** such as apples, dry fruits, pashmina shawls, handicrafts etc., to other parts of the country in the shortest possible time and at lesser cost.
- **Four cargo terminals will be built** between Banihal and Baramulla, land has been identified for three of these terminals.

INTERNATIONAL RICE RESEARCH INSTITUTE (IRRI)

A two-member delegation from International Rice Research Institute (IRRI) recently visited Punjab Agricultural University (PAU) to deliberate on emerging research areas for rice cultivation in Punjab and other parts of the world.



About International Rice Research Institute (IRRI):

- IRRI is an **independent, nonprofit, research and educational institute, founded in 1960** by the Ford and Rockefeller foundations with support from the **Philippine government**.
- It is the **world's premier research organization dedicated to reducing poverty, hunger, and malnutrition through rice science**.
- It **aims to improve the health and welfare** of those who **depend on rice-based agri-food systems**, and promote and protect the environmental sustainability of rice farming for future generations.
- **Headquarters: Los Baños, Philippines.**
- It has **offices in 17 rice-growing countries in Asia and Africa**, and more than 1,000 staff.
- IRRI's work is supported by a **diverse network of investors** aligned to common goals.
- IRRI's research for development is characterized by its **collaborative nature**: from **alliances with advanced research institutes; through strong collaborations** and capacity development **with governments** and national agricultural research and extension systems.

WHAT IS THE BELAGAVI BORDER DISPUTE?

The Supreme Court recently adjourned the hearing on the Belagavi border dispute case.



About Belagavi border dispute:

- It is an interstate dispute between Karnataka and Maharashtra over the control of Belagavi, a border town in Karnataka.
- **History:**
 - It has its roots in the **State Reorganization Act of 1956**, which aimed at reorganizing the states along linguistic lines.
 - **At the time of India's independence, Belagavi was part of the Bombay state** that had included parts of present-day Karnataka.
 - **After the implementation of the Act, Belagavi (previously Belgaum) became a part of Karnataka.**
 - On May 1, 1960, Maharashtra claimed that 865 villages, including Belagavi, Carvar and Nipani, should be part of Maharashtra and not Karnataka.
 - However, Karnataka said it will not part with any part of its territory.
- **Mahajan Commission:**
 - **It was set up** by the Union government on **October 25, 1966**, to solve the dispute.
 - The **panel turned down Maharashtra's claim over Belagavi** and also recommended that 247 villages/places, including Jatt, Akkalkote and Solapur, be made part of Karnataka, and 264 villages /places, including Nippani, Khanapur and Nandagad, to be in Maharashtra.
 - However, the **commission's report was outrightly rejected by Maharashtra**. Meanwhile, Karnataka saw the commission ruling in its favour.
- **Present Status:**
 - The **Maharashtra government filed a plea in the Supreme Court** challenging the State Reorganisation Act, 1956, in 2004. It demanded 865 villages and places from five Karnataka districts to be merged with the state.

- Meanwhile, **Karnataka** changed the name of Belgaum to Belagavi and made it the second capital of the state.
- The issue has been **pending before the Supreme Court since 2004**.
- **Karnataka contends that only Parliament can decide the state borders** and not the Supreme Court. It cites Article 3 of the Indian Constitution while doing so.
- On the other hand, **Maharashtra cites Article 131** and claims the apex court has jurisdiction in cases of disputes in which the Union government and the states are involved.

SC RULING ON AGNIPATH SCHEME

Why in news?

- The Supreme Court dismissed petitions challenging the Delhi High Court judgment which upheld the Agnipath scheme for recruitment to the armed forces.

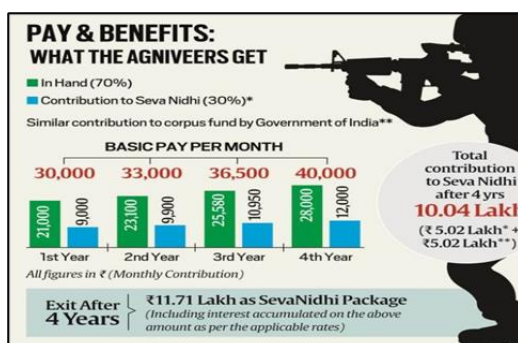
What is the Agnipath scheme?

• About

- Agnipath scheme is a central government scheme launched in 2022 for recruitment to the armed forces.
- It is a recruitment process for individuals below the rank of officer, with the goal of deploying fitter, younger troops on the front lines, many of whom will be on four-year contracts.
- The armed forces would also have the option to retain some of the best 'Agniveers.'

• Eligibility

- Candidates between the age of 17.5 years to 21 years will be eligible for enrolling in the Agnipath scheme.
- Girls under the given age limit are open for the agnipath entry, while there is no such reservation for women under this scheme.
- The recruitment standards will remain the same, and recruitment will be done twice a year through rallies.



• Pay & Benefits of Agniveers

News Summary: SC ruling on Agnipath scheme

What is the background of the case?

- Various petitions were filed in the apex court challenging the Delhi High Court judgment which upheld the Agnipath scheme.
- Some of the petitioners included candidates who were shortlisted in the earlier recruitment process to Army and Air Force.
- Names of some of these candidates had appeared in a provisional list for recruitment to Air Force but the recruitment process was cancelled when Agnipath scheme was notified.
 - There was written exam, physical test, medical exam conducted under the old recruitment process.
 - After which a provisional selection list was published with the ranks.
- Against this backdrop, the petitioners argued that the government must be directed to complete the old process citing the doctrine of promissory estoppel.

PREVENTIVE DETENTION LAW

Recently, the supreme court said that preventive detention laws in India are a colonial legacy with great potential to be abused and must be used only in the rarest of rare cases.



About Preventive detention law:

• **What is detention?** Detention in its simplest sense means to curb the liberty of an individual i.e. without the knowledge of that individual.

- There are 2 types of Detention
 - Preventive Detention
 - Punitive Detention

What are Constitutional Provisions Related to the Preventive Detention?

- **Article 22:** This article under the Indian Constitution protects against arrest and detention in certain cases.

- **Article 22 (1)** of the Indian Constitution says an **arrested person** cannot be **denied the right to consult**, and to be defended by, a legal practitioner of his choice.
- It allows for preventive detention and restriction on personal liberty for reasons of state security and public order.
- **Article 22 (4)** states that no law providing for preventive detention shall authorise the detention of a person for a longer period than three months unless
 - An **Advisory Board reports** sufficient cause for extended detention.
 - Such a person is detained in accordance with the provisions of any law made by the Parliament.
- **Under Entry 9 of List I (the Union List)**, Parliament has the **exclusive power** to enact a law for preventive detention for the reasons connected with **defence, foreign affairs, or security of India**.
- **Under Entry 3 of List III ('Concurrent List')**, **both Parliament and State Legislature** have powers to enact such laws for the reasons related to the maintenance of public order or the maintenance of supplies or services essential to the community.
- **Legal Provisions:**
 - The **Preventive Detention Act, of 1950** talks about the detention of a person on the grounds of defence, foreign affairs or the security of the state.
 - **Under Section 151 of the Criminal Procedure Code, 1973 (CrPC)** preventive detention is police action taken on grounds of suspicion that some wrong actions may be done by the person concerned.
 - A **police officer** can arrest **an individual without orders from a Magistrate** and any warrant if he gets any information that such an individual can commit any offence.
 - It is a **precautionary measure** and based on suspicion.

What is Punitive Detention?

- Punitive detention is detention as punishment for the crime committed by an It takes place after the actual commission of an offence or at least after an attempt has been made.