INDIA POST PAYMENTS BANK

India Post Payments Bank (IPPB) has been conferred the prestigious Digital Payments Award 2024-25 by the Department of Financial Services (DFS), Ministry of Finance.

- It is a **100% Government of India-owned** entity under the Department of Posts, Ministry of Communications.
- IPPB was **launched on September 1, 2018.**
- The bank has been set up with the vision to build the **most accessible, affordable and trusted bank for the common man in India.**
- The fundamental mandate of India Post Payments Bank is to remove barriers for the unbanked & underbanked and reach the last mile leveraging the Postal network comprising ~1,65,000 Post Offices.

Functions

- The operations of IPPB will be on a smaller scale as compared to other banks and will **not advance loans or issue credit cards to avoid risk.**
- It will accept **deposits, offer remittance** services, mobile payments/transfers/purchases and other banking services like ATM/debit cards, net banking and third-party fund transfers.
- It **will accept deposits up to Rs 2 lakh**, beyond which the account will be automatically converted into a post office savings account.
- The products and services of the bank will be made available through various mediums such as counter services, micro ATMs, mobile banking apps, messages, and interactive voice responses.
- The IPPB will use Aadhaar to open accounts, and a QR card and biometrics will be used for authentication, transactions, and payments.

B-2 SPIRIT STEALTH BOMBER

- It is a **United States long-range stealth bomber.**
- It first flew in 1989 and was **delivered to the U.S. Air** Force starting **in 1993.** There are currently **19 in service.**
- It is **built and maintained by Northrop Grumman Corporation.**
- The U.S. B-2 costs about **$2.1 billion each**, making it the **world's most expensive military aircraft** ever built.
- **Features**:
  - It is known for its **low observability, all-altitude capability,** and ability to penetrate the most sophisticated air defenses.
  - Due to its low-observability engineering, the fighter is **difficult to detect by conventional radar.**
  - Its **flying-wing design, radar-absorbent materials**, and **reduced infrared signature** result in a radar cross-section of about 0.001 square meters—comparable to that of a small bird.
  - The bomber is flown by a **crew of two, the pilot and the mission commander.**
  - **Power** is provided by **four turbofan engines.**
  - It has a top speed of 628 miles (1,010 km) per hour.
  - The advanced jet also has several other features, including its capability to **travel up to 6,000 nautical miles (11,112 km) without refueling** and massive arsenal capacity and ability to perform operations freely even at high altitudes.
  - With **aerial refueling**, the B-2 can **reach virtually any target worldwide.**
  - Its payload capacity of more than 40,000 pounds (18,144 kg) allows the aircraft to **carry a diverse array of conventional and nuclear weapons.**
  - The bomber's **internal weapons bays** are specifically **designed to maintain stealth characteristics** while **accommodating large ordnance loads**, which

could include **two GBU-57A/B MOP (Massive Ordnance Penetrator),** a 30,000-pound precision-guided "bunker buster" bomb.

- **MOP** represents the **largest conventional bomb in the U.S. arsenal**, specifically **engineered to defeat** hardened **underground bunkers.**
- **B-2 bombers** are the **only plane capable of carrying the MOP.**

WHAT IS E-RAKTKOSH?

- It is an **online blood bank management system** implemented under the **National Health Mission.**
- It is the **official portal for all blood-related services** in India.
- It provides **details on blood availability, blood banks, and blood donation camps** across the country.
- More than **3800 blood centers are registered** on e-Raktkosh from across the country.
- It has been **developed by** the **Centre for Development of Advanced Computing (C-DAC).**
- It has been **developed with a modular and scalable approach** with configurable rule-based architecture, allowing customization to easily incorporate specific requirements from nationwide stakeholders.

Objectives:

- Safe and **Adequate Blood Supplies**
- Reduced Turnaround Time
- **Preventing Wastage** of Blood
- **Restrict Professional Donors**
- **Networking** of Blood Banks
- **Donor Repository**

Salient Features:

- **Web-Based Application**
- **Aadhar Linkage**
- Decision Support
- Enforces Guidelines
- Dashboard
- **Statutory Reports**

- **e-Raktkosh** has **six major components** for **management of the blood donation life cycle:**
  - The **biometric Donor Management System** for identifying, tracking, and blocking donors based on the donor's health, donation history, etc.
  - It provides features such as **blood grouping, TTI screening, antibody screening, component preparation**, as per the defined processes and rules.
  - A **centralized Blood Inventory Management System** for keeping track of the blood stock across numerous blood banks.
  - **Bio-Medical Waste Management System** for disposal of discarded blood and other waste generated during this process.
  - **Generation of rare blood group donor registries** and the **generation of regular repeat donors.**
  - **Alert and Notification System.**

IIT-DELHI'S BREAKTHROUGH IN QUANTUM COMMUNICATIONS EXPLAINED

- **About Quantum Communication**
  - It uses principles of quantum physics—especially quantum entanglement—to create highly secure communication channels.
  - It ensures that any attempt to intercept the communication is immediately detected.

The Role of Quantum Entanglement

- **Quantum entanglement** is a phenomenon where two particles become so closely linked that a change in one instantly affects the other, regardless of the distance between them.
- When two photons are entangled, measuring one instantly determines the state of the other, regardless of distance.
- This makes quantum communication highly resistant to eavesdropping.

- **Applications in Defence**
  - Due to its leak-proof nature, quantum communication is especially valuable in military and national security settings.
- **Key Method: Quantum Key Distribution (QKD)**
  - QKD is a major technique within quantum communication that enables two parties to share encryption keys securely, with any interception attempts being detectable.

IIT-Delhi's Quantum Communication Achievement

- **Latest Breakthrough: 1 km Free-Space QKD**
  - The IIT-Delhi team successfully demonstrated entanglement-based Quantum Key Distribution (QKD) over 1 km through open air on the IIT campus.
  - This marks progress beyond fibre-based transmission.
    - The photons travel through open air, not through cables or fibres.
    - This is useful for communicating over long distances, even between buildings or from the ground to satellites.
- **Towards Satellite-Based QKD**
  - The experiment aims to lay the groundwork for ground-to-satellite QKD, where satellites could beam encryption keys securely to any location across India via atmospheric transmission.

INDIAN RAILWAYS NOW MOVES 1 IN 5 CARS MADE IN INDIA

In a major step towards reducing carbon emissions, Indian Railways increased its share of passenger vehicle (PV) dispatches to over 20% of total car production in 2024–25, a sharp rise from just 1.7% in 2014–15.

In 2024–25, Indian Railways transported 10.41 lakh **cars**, with total car loading expected to reach 15 lakh annually soon. This shift supports India's net zero emissions target by 2070 and presents a new revenue stream for the Railways.

How the 'Rail Coefficient' for Car Transport Increased

- **Liberalisation of AFTO Policy**
  - The Automobile Freight Train Operator (AFTO) scheme has been made more flexible to encourage car manufacturers to use Indian Railways for transporting passenger vehicles:
    - Registration fee of ₹5 crore removed
    - Minimum rake requirement reduced from 3 to 1
    - Auto ancillaries and spares now allowed in both directions
    - Net worth criteria for applicants eliminated
    - Spare wagon maintenance requirement eased from 4% per rake to 4% of total holdings
- **Industry Engagement and Feedback**
  - Regular consultations are held with key stakeholders like SIAM (Society for Indian Automobile Manufacturers) to continuously improve the policy based on industry needs.
- **Infrastructure Expansion**
  - To support increased volumes, Indian Railways has added multiple automobile loading terminals across the country. New terminals include:
    - Eastern Region: Chitpur

- South Western Region: Penukonda
- Northern Region: Nasrala
- North Eastern Region: Nautanwa, Bakshi ka Talab
- East Central Region: Mesra
- East Coast Region: Hirakud
- Western Region: Champaner, Chharodi
- North East Frontier Region: Baihata, Salchapra, Furkating, New Tinsukia, Jirania, Agthori
- Central Region: Loni, Khadki, AJNI, Vilad

Wagons Used by Indian Railways to Transport Cars

- **Evolution of Automobile Transport by Rail**
  - Initially, Parcel Vans (VPs) were used, attached to passenger or mail/express trains.
  - Later, Bogie Open Military (BOM) wagons were introduced but were limited to military equipment.
- **Introduction of NMG Coaches**
  - In 1995–96, New Modified Goods (NMG) coaches revolutionized car transport.
  - A single rake of 25 NMG coaches can carry:
    - 100–125 cars
    - 125–175 tractors
    - 1,500–1,675 two-wheelers
  - Indian Railways is continuously expanding its fleet of NMG rakes.
- **Modern Wagons for Larger Vehicles**
  - To meet the growing demand for transporting larger passenger vehicles like SUVs, the Railways introduced three new types of double-decker auto wagons.
  - These modern rakes have significantly enhanced the capacity and efficiency of automobile transportation via rail.

OTTAWA CONVENTION

- It is also known as the **Anti-Personnel Mine Ban Convention or Mine Ban Treaty.**
- It is the cornerstone of the international effort to end the suffering and casualties caused by **anti-personnel mines.**
- It prohibits the **use, stockpiling, production** and **transfer** of Anti-Personnel Mines
- It was adopted on **18 September 1997 in Oslo,** Norway and **entered into force in 1999.**
- The state Parties must destroy their stockpiled mines **within four years** after their accession to the Convention.

  States Party to the Ottawa Treaty commit to:
  - never use anti-personnel mines, nor to "develop, produce, otherwise acquire, stockpile, retain or transfer" them;
  - Clear mined areas in their territory **within 10 years;**
  - In mine-affected countries, **conduct mine risk education** and ensure that mine survivors, their families and communities receive comprehensive assistance;
  - Offer **assistance to other States Parties**, for example in providing for survivors or contributing to clearance programs;
  - Adopt **national implementation measures** (such as national legislation) in order to ensure that the terms of the treaty are upheld in their territory.
- **Members:** 165 countries (**India is not a member** of this convention)

GHUMOT

- Ghumot (or Ghumat) is a **traditional membranophone percussion instrument** that features in several religious and cultural practices of Goa.
  - It is **made with an earthen clay pot** with one side left open and the mouth covered with animal hide, usually that of the Indian monitor lizard (now largely replaced by goat hide).

- The rim is designed to secure the membrane, and the instrument is often warmed near a bonfire to tighten the skin for enhanced sound.
- The ghumot player strikes on this tightly tied membrane to create sharp beats.

- The instrument is also played in a **pre-wedding 'roce' ceremony of Goan Christians**, where the ghumata vazop comes alive.
- It assumes significance during Hindu religious rituals such as the Ganapati Stotra, Ganapati Arati and Ganapati Visarjana observed during Ganesh Chaturthi.
- It is also instrinsic to the **zagor or harvest season**, usually organised by the mandd (village committee) and Shigmo or Holi.
- It has **significance among the Hindus and Christians** in the western state and was originally made and played only by the local tribal community.

SUBARNAREKHA RIVER

- It originates near Nagri village in the Ranchi District of **Jharkhand** at an elevation of 600 m.
- It flows for a length of 395 km before outfalling **into the Bay of Bengal.**
- The Subarnarekha (meaning "**Streak of Gold**") flows east through a copper-mining region and leaves the Chota Nagpur plateau by the **Hundrugbagh waterfall.**
- **Tributaries:** Its principal tributaries joining from right are the **Kanchi, the Karkari** and the Kharkai.
- The basin is bounded by the **Chota Nagpur plateau** on the north and the west, by the ridges separating it from **Baitarani basin** on **the south**, by the Bay of Bengal on the south-east and by the Kasai Valley of **Kangsabati River** on the east.
- **River Basin:** It extends over States of **Jharkhand, Odisha** and comparatively smaller part in **West Bengal.**
- The basin is generally influenced by the South-West monsoon, which onsets in the month of June and extends up to October.
