Prelim Bits 05-04-2022 | Daily UPSC Current Affairs

Near Field Communication Technology

Recently, Google Pay has launched the 'Tap to pay for UPI' feature in India, in collaboration with Pine Labs. The feature makes use of Near Field Communication (NFC) technology.

- NFC is a **short-range wireless connectivity technology** that allows NFC-enabled devices to communicate with each other and transfer information quickly and easily with a single touch.
- NFC transmits data through **electromagnetic radio fields**, to enable communication between two devices.
- NFC-enabled devices must be either physically touching or within a few centimetres from each other for data transfer to occur.
- To work, both devices must contain NFC chips, as transactions take place within a very short distance.
- **Applications of NFC -** NFC tech has a wide range of applications besides driving payment services like Google Wallet and Apple Pay.
- It is used in contactless banking cards to perform money transactions or to generate contact-less tickets for public transport.
- Contactless cards and readers use NFC to secure networks and buildings, to monitor inventory and sales, to prevent auto theft, to keep tabs on library books, and to run unmanned toll booths.
- NFC is behind the cards that we wave over card readers in subway turnstiles and on buses to check tickets.
- It is present in speakers, household appliances, and other electronic devices that we monitor and control through our smartphones.
- With just a touch, NFC can also set up WiFi and Bluetooth devices in our homes.
- It also has an application in healthcare, to monitor patient stats through NFC-enabled wristbands. NFC is used in wireless charging too.
- **NFC in Google Pay** - Google Pay has been the first among UPI apps to bring the Tap-to-Pay feature working on POS terminals.
- It allows users with UPI accounts configured on GPay to make payments just by tapping their NFC-enabled Android smartphones on any Pine Labs Android point-of-sale (POS) terminal and verify the payment.
- The process is much **faster compared to scanning a QR code** or entering the UPI-linked mobile number which has been the conventional way till now.
- **Safety -** NFC technology is designed for an operation between devices within a few centimetres from each other.
- This makes it difficult for attackers to record the communication between the devices compared to other wireless technologies which have a working distance of several metres, according to the NFC forum.

Reference

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2. https://www.investopedia.com/terms/n/near-field-communication-nfc.asp
3. https://nfc-forum.org/what-is-nfc/about-the-technology/

Bio-Digester

- It is a system that **biologically digests organic material**, either anaerobic (without oxygen) or aerobically (with oxygen).
- Most food, including fat, greases, and even animal manure, can be processed in a bio-digester.
- Microbes and other bacteria break down organic materials in a bio-digester.
- Biodigesters are a **closed system**; so, it gives off no odor from food waste; this will eliminate flies and rodents from the facility.
- Biodigesters are a **living system** and do require maintenance. However, they are easy to use and maintain.
- It **utilizes organic waste**, particularly animal and human excreta, **to produce fertilizer and biogas**.
- The capacity of food a biodigester can process depends on the size; larger the digester more food it can handle.
- Biodigester systems can be implemented on farms that need to improve soil fertility or the quality of life of the producers if the conditions referred to above are in place. Permanent access to water is required.
- In India, Biodigester technology has been developed by Defence Research Development Organisation (DRDO) for resolving the problems of un-decomposed human waste.
- **Other Solid Waste Management Techniques**
    1. Bio-methanation,
    2. Vermi-composting,
    3. Anaerobic digestion or any other appropriate processing for bio-stabilisation of biodegradable wastes, and
    4. Waste to energy processes including refused derived fuel for combustible fraction of waste or supply as feedstock to solid waste based power plants or cement kilns.
- **Related Links** - National Policy on Biofuels 2018, Sustainable Alternative Towards Affordable Transportation (SATAT) scheme
- **Similar Links -** Ethanol Blended Petrol Programme & Biodiesel Blending Programme

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IPCC Report Warns Malaria Outbreak in Himalayan Region

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) has observed a shift in the distribution of malaria and dengue to higher altitude areas like Himalayan Region.

- In India, the IPCC has projected changes in the spatial distribution of malaria, warning of potential outbreaks in the Himalayan region, besides the southern and the eastern states.
- As temperatures rise, the number of months suitable for transmission of Malaria will grow, although in some areas transmission of the vector-borne disease will fall by the 2030s.

- With rainfall patterns changing, the range and distribution of vector borne diseases is changing along with it, as well as the vector's ability to breed longer.
- As temperatures rise, the diseases are shifting northwards to higher altitudes such as towards the Himalayas.
- As temperatures become too hot in some lowland tropical areas for the Malaria vector to thrive, however, the report predicts an increase in diseases such as dengue and zika.

Other impacts

- In South and Southeast Asia, the report says, rising temperatures will also cause an adverse impact on availability and prices of food, leading to increased undernourishment.
- Besides, mental health challenges will grow, affecting particularly the young and the elderly, and those with underlying conditions.
- With more frequent hot days and intense heat-waves, the heat-related deaths will increase in Asia.
- In addition to all-cause mortality, deaths related to circulatory, respiratory, diabetic and infectious diseases, as well as infant mortality are increased with high temperature.
- Increases in heavy rain and temperature will increase the risk of diarrheal diseases, dengue fever and malaria in tropical and sub-tropical Asia.
- The report finds the Spring pollen season start dates in northern mid-latitudes are occurring earlier due to climate change, increasing the risks of allergic respiratory diseases.
- Higher atmospheric concentrations of carbon dioxide reduce the nutritional quality of wheat, rice, and other major crops, "potentially affecting millions of people at a doubling of carbon dioxide,'' it added.

Reference

https://indianexpress.com/article/india/ipcc-report-warns-of-malaria-outbreak-in-himalayan-region-7795345/

FASTER Portal

The Chief Justice of India N V Ramana launched FASTER (Fast and Secured Transmission of Electronic Records).

- The FASTER is a digital platform to communicate interim orders, stay orders, bail orders etc., of the Supreme Court to authorities concerned through a secured electronic communication channel.
- This system is developed on war footing by the Registry of the Supreme Court in collaboration with the National Informatics Centre.
- Using this system, orders passed by the Supreme Court and other High Courts have to be transmitted safely without tinkering by third parties.
- This system will help in communicating crucial decisions including orders on bail and stay of arrest electronically to prison authorities and investigating agencies through a secure channel.
- This would reduce the court's delay in the release of prisoners owing to the delay in physical orders reaching the prison authorities.
- **FASTER cell** - A FASTER cell has been established in the Registry of the Supreme Court.
- The cell will transmit digitally signed record of proceedings or orders related to bail and release passed by the court to the nodal officers and duty holders concerned through email.
- To know more about the FASTER System, click here.
- **Similar Links -** SUPACE

Reference

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National Bee Board

- In 2005, Beekeeping has been included as a supplemental activity under National Horticulture Mission (NHM) for promoting cross pollination of Horticultural Crops.
- Formed as a Registered Society under Societies Registration Act, XXI of 1860 in 2000 & promoted by the Small Farmers' Agri-Business Consortium (SFAC).
- In view of the tremendous scope for increasing productivity due to cross pollination and increase in income through Apiculture, the National Bee Board (NBB) was reconstituted in **2006**.
- The main objective of this Board is **overall development of Beekeeping** by promoting Scientific Beekeeping in India to
    1. Increase the productivity of crops through pollination and
    2. Increase the Honey production for increasing the income of the Beekeepers/ Farmers.
- Funds flow to the Board from the National Horticulture Mission and the Horticulture Mission for North East and Himalayan States Scheme.

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