Prelim Bits 08-12-2021 | UPSC Daily Current Affairs

Raigad Fort

President began his 4-day visit to Maharashtra by visiting the Raigad Fort.

- Earlier called **Rairi,** Raigad is a **hill fort** situated in Maharashtra.
- Raigad was the name given by Chhatrapati Shivaji to the fort.
- The British Gazette states the fort was known to early Europeans as the **Gibraltar of the East**.
- The fort was the **seat of the Maratha clan Shirke** in the 12th century.
- The fort changed hands a number of times from the dynasty of Bahaminis to the Nizamshahis and then the Adilshahis.
- In 1656, Shivaji captured it from the More's of Javli who were under the suzerainty of the Adilshahi Sultanate.
- **Significance** - The fort helped Shivaji challenge the supremacy of the Adilshahi dynasty.
- It opened up the routes towards Konkan for the extension of his power.
- By 1664, the fort had emerged as the seat of Shivaji's government.
- As the Marathas under Shivaji gained strength in their struggle against the Mughals, a sovereign, independent state was announced.
- In 1674, Shivaji was coronated at Raigad by Gagabhatt where he took on the title of Chhatrapati. He passed away in Raigad in 1680.

Reference

1. https://indianexpress.com/article/explained/raigad-fort-maratha-maharashtra-7658567/
2. https://www.thehindu.com/news/national/president-kovind-witnesses-air-display-at-pune-iaf-station/article37887436.ece

Laser Communications Relay Demonstration

NASA launched it's first-ever laser communications system, called Laser Communications Relay Demonstration (LCRD) as a hosted payload on STPSat-6 spacecraft aboard a United Launch Alliance Atlas V rocket.

- LCRD will be in a geosynchronous orbit, over 35,000km above Earth.
- **Purpose** - Currently, most NASA spacecraft use radio frequency communications to send data.
- Optical communications will help increase the bandwidth 10 to 100 times more than radio frequency systems.
- LCRD will showcase the unique capabilities of optical communications in space.
- If this capability is further proven, laser communications can be implemented on more missions, making it a standardised way to send and receive data.
- LCRD is NASA's first two-way, end-to-end optical relay.
    1. LCRD has two optical terminals - one to receive data from a user spacecraft, and the other to transmit data to ground stations.
    2. The modems will translate the digital data into laser signals.

3. This will then be transmitted via encoded beams of light.

- The ground team will send test data through radio frequency signals and the LCRD will reply using optical signals.
- **Benefits** - Optical communications systems are **smaller in size, weight, and require less power** compared with radio instruments.
- Laser uses infrared light and has a shorter wavelength than radio waves. This will help the **transmission of more data in a short time**.
- LCRD will send data to Earth at 1.2 Gbps using infrared lasers.
- It would take roughly 9 weeks to transmit a completed map of Mars back to Earth with radio systems. With lasers, this can be done in 9 days.

Reference

1. https://indianexpress.com/article/explained/explained-what-is-nasas-new-communications-system-lcrd-its-importance-7661272/
2. https://www.nasa.gov/mission_pages/tdm/lcrd/index.html

Additional Covid-19 Vaccine and Booster Shot - Difference

With the Omicron variant of Covid-19 spreading across the country, the need for a booster shot or an additional jab may feel more urgent than ever.

- **An additional dose,** originally called the third dose, of a Covid-19 vaccine is given to people with moderately or severely compromised immune systems to improve their response to the initial vaccine series.
- An additional dose, thus, might improve the protection against the novel coronavirus to the people with weakened immune systems.
- Offering such beneficiaries a third dose could help them match up an immune response similar to generalized, healthy populations.
- **A booster shot** is given when a person has completed their vaccine series, and protection against the virus has decreased over time.
- It may be exactly the same original vaccine, in which case its goal is to increase the magnitude of protection by producing more antibodies.

The booster shot is an additional dose after the protection provided by the original shot(s) has started to decrease over time.

- The booster is designed to help people maintain their level of immunity for longer.
- A booster shot gives the memory cells the crucial signal to re-engage when the virus attacks. So, it helps people maintain their level of immunity for longer durations.
- **Dosage** - While the additional Covid dose would be a “full” dose of the vaccine, booster shots being offered right now have a lesser volume, since the third dose is only supposed to increase the efficacy range.

Reference

1. https://indianexpress.com/article/explained/explained-difference-booster-shot-additional-covid-19-vaccine-7658732/
2. https://news.abplive.com/health/what-is-the-difference-between-additional-and-booster-dose-of-covid-vaccine-know-all-about-it-1497899

3. https://www.indiatoday.in/coronavirus-outbreak/story/covid-why-third-dose-debate-india-remains-inconclusive-1885229-2021-12-07

Inclusion of Diseases under AB-PMJAY

- Treatment of diseases like COVID-19 and dengue is included under Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).
- Reimbursement level for the laboratory tests for COVID-19 Infection (PCR) will be as per the ICMR guidelines, issued from time to time.
- The people affected with the diseases covered under AB-PMJAY can get specific 'Health Benefit Packages' under this scheme.

Reference

https://pib.gov.in/PressReleasePage.aspx?PRID=1778839

Bhartiya Prakritik Krishi Padhati

- Bhartiya Prakritik Krishi Padhati (BPKP), a sub scheme of Paramparagat Krishi Vikas Yojana (PKVY) that promotes natural farming.
- ['Paramparagat Krishi Vikas Yojana' is a component of Soil Health Management (SHM) of National Mission of Sustainable Agriculture (NMSA).]
- BPKP is aimed at promoting traditional indigenous practices including Zero Budget Farming which reduces externally purchased inputs.
- The scheme mainly emphasises on,
    1. excluding all synthetic chemical inputs,
    2. promoting on-farm biomass recycling with major stress on biomass mulching, use of cow dung-urine formulations and plant based preparations and
    3. time to time working of soil for aeration (periodic soil aeration).
- Under BPKP, financial assistance of Rs 12200/ha for 3 years is provided for cluster formation, capacity building and continuous handholding by trained personnel, certification and residue analysis.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1778901
2. https://pib.gov.in/PressReleasePage.aspx?PRID=1737751
3. https://www.niti.gov.in/natural-farming-niti-initiative
4. https://vikaspedia.in/agriculture/policies-and-schemes/crops-related/krishi-unnati-yojana/paramparagat-krishi-vikas-yojana