Holographic Imaging Based Method

Why in News

Scientists from New York University have developed a **method using holographic imaging to detect both viruses and antibodies**.

- **Holography** is a process that **creates three-dimensional images called holograms** using laser beams, the properties of interference and diffraction, light intensity recording, and illumination of the recording.

Key Points

- **About the Method:**
    - **It uses laser beams to record holograms of the specially prepared test beads.**
    - The **surfaces of the beads are activated with biochemical binding sites** that attract either antibodies or virus particles, depending on the intended test.
    - Binding antibodies or viruses **causes the beads to grow** by a few billionth parts of a metre.
    - Researchers **detect this growth through changes in the beads' holograms. The test can analyse a dozen beads per second**.
- **Significance:**
    - The method can test either for the virus (current infection) or antibodies (immunity).
    - The breakthrough has the potential to **aid in medical diagnoses**, and specifically, those related to the Covid-19 **pandemic**.
    - If fully realised, this proposed test could be done in under **30 minutes**, is highly accurate, and can be performed by minimally trained personnel.

Source: IE