Context:

- UV disinfection trolley can effectively clean up hospital spaces in combating COVID-19. Coronavirus is sensitive to UVC light, as in the case of other viruses and bacteria. The present system has been deployed at Employee’s State Insurance Corporation hospital in Hyderabad for field trials.

Developed by:

- International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), an autonomous R&D Centre of Department of Science and Technology (DST), Govt. of India and University of Hyderabad (UoH) together with the help of Mekins Industries Ltd. (MIL), have developed a UVC based disinfection trolley to fight against COVID-19 by rapid cleaning of hospital environment.

How UV light sterilizes viruses and bacteria:

- UV light in the range of wavelengths between 200 and 300 nm is capable of inactivating microorganisms, such as bacteria and viruses, thus disinfecting both air and solid surfaces.
- Often, chemical disinfectants are not enough to remove the bacteria and viruses found in hospitals and other contamination prone environment.
- Rapid decontamination of the used patient-care beds and hospital rooms before admission of subsequent occupants is a major requirement in hospitals in view of the limited availability of beds.
- **Coronavirus is sensitive to UVC light**, as in the case of other viruses and bacteria.
- The germicidal effects of UVC irradiation with a peak intensity at 254 nm results in cellular damage of the virus, thereby inhibiting cellular replication.
- Unlike chemical approaches to disinfection, UV light **provides rapid, effective inactivation of microorganisms through a physical process**.

About the UVC trolley:

- The UVC disinfection trolley (Height 1.6mx Width 0.6m x Length 0.9m) co-developed by ARCI, UoH, and MIL consists of 6 UVC germicidal tubes, which are arranged in such a way that 3 sides are illuminated with 2 tubes facing each direction.
- While these lamps take care of disinfection on the walls, bed, and room air, the floor disinfection is done by 2 smaller UV lights located at the bottom facing the floor.
- The hospital rooms get disinfected when the trolley is moved around in the room by an operator in protective suit and UV resistant goggles.