Context:

- For reliable antibody testing kits, India will have to make its own, according to independent epidemiologists and biotechnologists.
- A day after the Rajasthan government said that it would stop antibody tests because they were returning inaccurate results, the Indian Council of Medical Research announced that it had advised putting such tests on hold because it was generating widely varying results.
- The ICMR on Wednesday said it had forwarded a “protocol” for rapid antibody tests to all States, but did not specify the details.
- At present, polymerise chain reaction (PCR) and antibody testing are the dominant ways that global healthcare systems are testing citizens for Covid-19.

Importance of Antibody kits:

- Much like home-based pregnancy tests, antibody tests are valuable because they give results quickly and only needs a pinprick’s worth of blood.

Drawbacks of Antibody kits:

- They can only detect antibodies produced by the immune system in response to the virus and this can take as many as 7-14 days to manifest.
- An antibody test only tells you whether a person has ever been infected by the virus. These antibodies that are produced are not necessarily specific to SARS COV-2 and could even be generated by a variety of other pathogens.
- There are other 4 other common coronaviruses and antibodies could be generated to that too. So far, nobody has found a protein that’s specific to SARS COV-2.

What is Rapid Test-Polymerase Chain Reaction (PCR) test?

- The PCR technology is confirmatory because it identifies the SARS COV-2 based on genes, whereas the presence of viruses have usually been detected via antibody kits by the proteins produced by the virus’s genes.
- They detect the genetic information of the virus, the RNA. That’s only possible if the virus is there and someone is actively infected.
- PCR tests are used to directly detect the presence of an antigen, rather than the presence of the body’s immune response, or antibodies. By detecting viral RNA, which will be present in the body before antibodies form or symptoms of the disease are present, the tests can tell whether or not someone has the virus very early on.

Steps taken by ICMR:

- The ICMR’s current recommendation is to test those who show symptoms such cough, fever and breathlessness and even a sore throat. After quarantining for 14 days, an antibody test is to be done and if positive, the person ought to be tested by RT-PCR.
- The ICMR has underlined that tests are a surveillance tool. The utility of the test was evolving and its value was dependent on field conditions. They were not a replacement for
RT-PCR tests.

- However, with the accuracy widely ranging from 5% to 71%, there are questions on whether they can reliably help indicate the spread of the infection.
- All kits need to be validated by the National Institute of Virology, Pune.