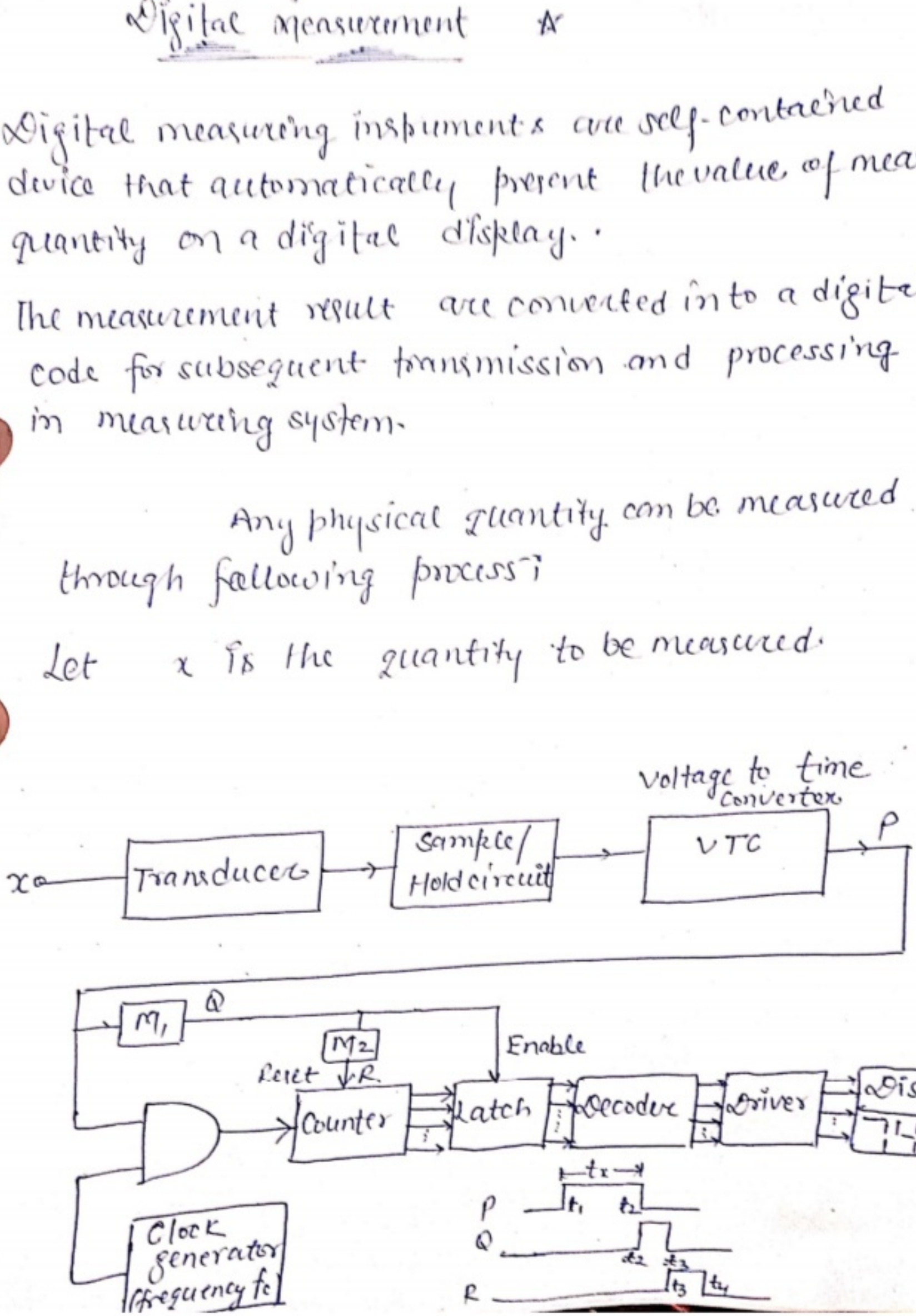
Importance of Digital measurement

Digital measuring instruments are self-contained device that automatically present the value of measured quantity on a digital display.

The measurement result are converted into a digital code for subsequent transmission and processing in measuring system.

Any physical quantity can be measured through following process

Let x is the quantity to be measured.



Fundamental Nature of Digital Measurement

Measurement, which is produced by an additive (or equivalent) measurement operation.

A commonly used digital scheme for the measurement of a physical quantity 'x' in terms of the standard time period of clock pulse. that is shown in figure (on previous page)

It consist of following step;

→ The quantity 'x' is converted into to an electrical signal. this is achieved by employing a suitable transducer or sensor.

→ ef 'x' is time varying signal than the output of transducer (V) will be also varry.
in this case 'V' is sampled and sampled value is held for a time, sufficient for the instrument to carry out the measurement.