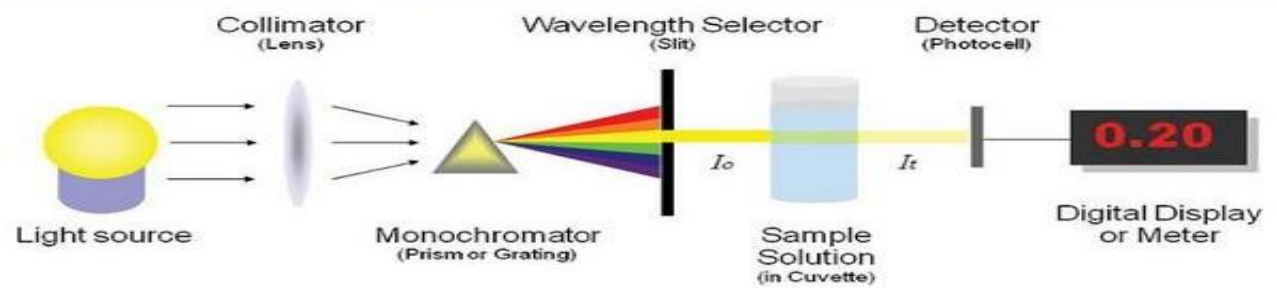
Methods in clinical chemistry

Most methods in clinical chemistry are based on quantitative measurement of a methods in clinical chemistry colored compound produced when the sample contains the substance to be measured, which is mixed with an appropriate reagent to produce a characteristic color, and measurement are made with instrument called spectrophotometer (wave length of visible light). The amount of color produced is proportional to the amount of substance being measured.

Spectrophotometer

Is an instrument of absorbance measurement of a solution at one or more wave length. The spectrophotometer produces light of limited wave length for interaction with the sample.

The following components are common to all spectrophotometers :



Parts of Spectrophotometer

1. **light source :-** A tungsten filament lamp is used for the visible region (about 320 to 1000 nm.) while a hydrogen or deuterium-discharged lamp is used for the U.V region (200-400 nm).

2. Wave length selector :- Allow certain wave length band to penetrate through it.

3. **Cuvet :-** it is the transport container for sample which either be square or round and made of glass or plastic for range (320-1000 nm.) and of quartz (silica) for measurement below 320 nm.

4. **Detector :-** Measures light intensity by converting the light signal into an electric signal.

5. **Read out device :-** The electrical signal from the detector can be readed out as a digital display, galvanometer scale, a needle reading on a meter or an ink signal on a chart paper of a recorder.