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 **MATRIC NO: 17/MHS06/027**

**COURSE CODE: MLS 304**

**COURSE TITLE: LABORATORY INSTRUMENTATION AND TECHNIQUES**

**DATE: 31/05/2020**

**AUTOMATIC ANALYZER:**

 An automated analyzer is a [medical laboratory](https://en.wikipedia.org/wiki/Medical_laboratory) instrument designed to measure different chemicals and other characteristics in a number of biological [samples](https://en.wikipedia.org/wiki/Sample_%28material%29) quickly, with minimal human assistance. These measured properties of blood and other fluids may be useful in the diagnosis of disease.

**Types of automatic analyzer**

* Routine biochemistry analyzer
* Hematology analyzer
* Immune-based analyzer
* Miscellaneous analyzer.

cobas c311

 **DIAGRAM OF AN AUTOMATIC ANALYZER**

**How to maintain an automatic analyzer to keep it in a good condition**

**The major maintenance performed on an automatic analyzer daily to maintain and prepare it includes**

1. Reagent inventory management: this is done by looking at the system-screen to get an overview of the analyzer and to inform the personnel about the reagents that are consumed and are required to be replaced, this replacement is done by first unloading the consumed ones from its compartment this command is done by the system but removed by a personnel and then scanned and replaced.
2. Required analyzer maintenance: this is cleaning some compartment of the analyzer such as the:
3. the sample probe
4. the reagent probe
5. the sample shield pipe
6. the super nasal

This is cleaned using alcohol swab.

1. Calibration and quality control: calibration is the comparison of [measurement](https://en.wikipedia.org/wiki/Measurement) values delivered by a [device under test](https://en.wikipedia.org/wiki/Device_under_test) with those of a [calibration standard](https://en.wikipedia.org/wiki/Standard_%28metrology%29) of known accuracy. Such a standard could be another measurement device of known accuracy, a device generating the quantity to be measured such as a [voltage](https://en.wikipedia.org/wiki/Voltage), a [sound](https://en.wikipedia.org/wiki/Sound) tone, or a physical artifact, such as a [meter](https://en.wikipedia.org/wiki/Meter) ruler.

The outcome of the comparison can result in one of the following:

* no significant error being noted on the device under test
* a significant error being noted but no adjustment made
* an adjustment made to correct the error to an acceptable level

**Others maintenance done includes :**

1. Always cover the analyzer when not in use so to avoid dust covering the analyzer which cause damage to some component of the machine.
2. Unplug the analyzer when not in use to avoid damaging/burning of the machine plug and other component inside the machine which can lead to false reading of result.
3. Keep the automatic analyzer in a well-ventilated environment, this is to prevent the machine from dirt and from being damaged.
4. Each cuvette must be uniformly matched to each other
5. Quality control and Quality assurance should be conducted regularly.