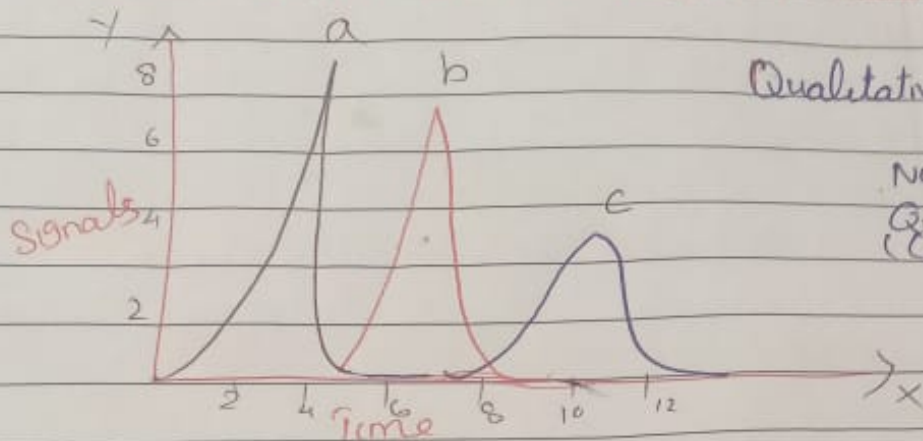


(Results called chromatogram)

Detectors \Rightarrow "FID (Flame ionization detector)"

SP \Rightarrow long & coiled SP, 150 - 300°C. heat capacity
using liquid must be High B.P liquid.



Qualitative (no. of
spots)
also
 \downarrow
No. of Peaks
Quantitative
(Concentration)
 \downarrow
Area

Retention time \Rightarrow the time taken to sample reach
Zero to Maximum Peak.

Advantages:

- + Efficient in separation of Org cpds
- + Fast, Sensitive and Reliable technique
- * Both Qualitative and Quantitative analysis
Can be done (using Mass spectroscopy)

Disadvantages

- * Sample should be Pure
- * Need Skills to handle
- + Only Volatile cpds can be analysed.

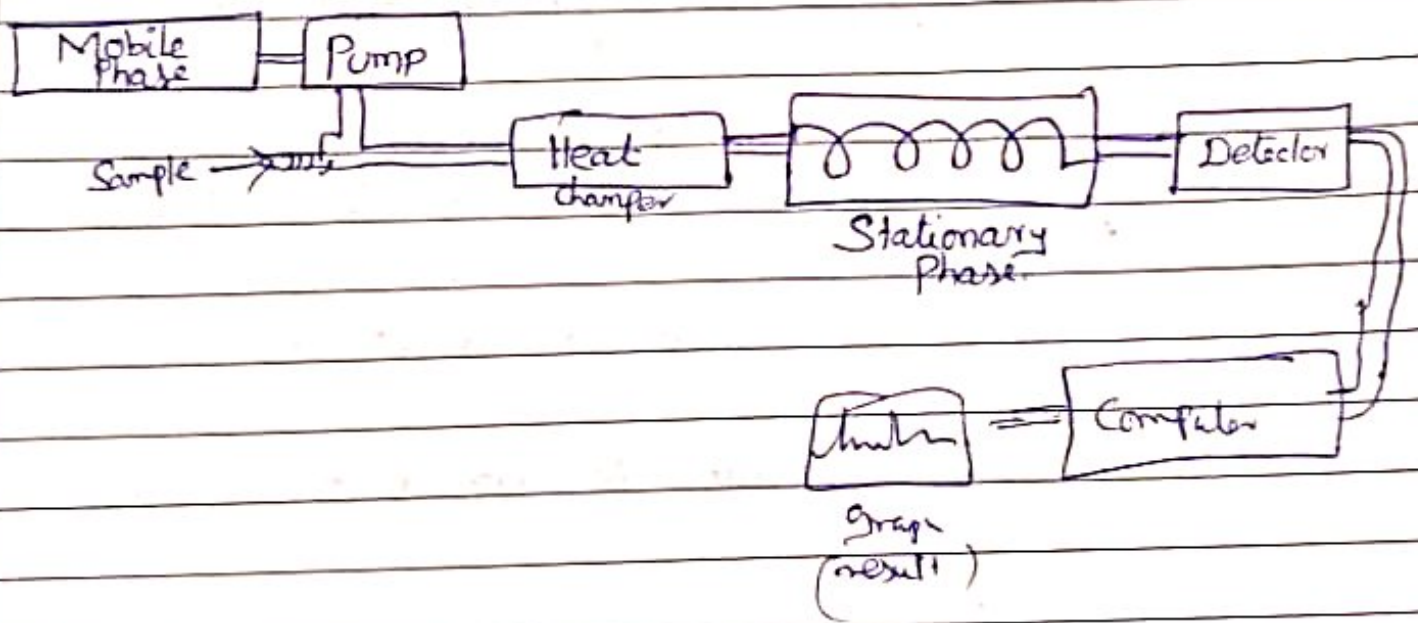
Applications \Rightarrow Agri industries \Rightarrow spraying agent analysis
Medical, Cosmetics,

Principle: \Rightarrow Volatility

* if Volatility \uparrow means \Rightarrow there is no interaction with Stationary Phase \Rightarrow moves faster

* if Volatility \downarrow \Rightarrow More interaction with Stationary Phase \Rightarrow moves slower

* if Volatility is same (differentiate with Polarity)
Non Polar \rightarrow don't react with Polar SP \Rightarrow ^{move} faster
Polar \Rightarrow Reacts with ~~SP~~ Polar SP \Rightarrow moves slower
and vice versa (Polar molecules $\&$ Polar molecules stick with each other)



if ~~SP~~ SP is liquid or solid ^{mechanism}

if Solid means \Rightarrow adsorption happened

liquid " \Rightarrow Partition "

Gas-liquid ion exchange electrochromatography

GLC \Rightarrow runs on the Principle of Partition.
 In GLC \Rightarrow the components of vaporize samples are fractionated due to Partition b/w gaseous mobile phase and a liquid stationary phase held in column.

Mobile Phase \Rightarrow Carrier gas, is comprised of an inert gas, i.e. He, Ar, (or nitrogen)

Stationary Phase \Rightarrow Consists of a Packed column in which the packing or solid support itself acts as stationary phase or is coated with the liquid stationary phase (high boiling polymer)
 Silicon grease / wax

It is used to separate Volatile & Polar Substances
 Volatility - The ability to Vaporize

Analyte \rightarrow Volatile molecules

Classified into 2 based on Stationary Phase

State

\rightarrow Solid \rightarrow Gas Solid Chromatography
 \rightarrow liquid \rightarrow Gas liquid "

Function

\rightarrow Packed \Rightarrow Glass
 \rightarrow Capillary \Rightarrow fused quartz

classified depends functions

Gas-liquid ion exchange electrophoresis

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classified into 2 based on stationary phase

State

\rightarrow Solid \rightarrow Gas solid Chromatography
 \rightarrow liquid \rightarrow Gas liquid "

Function

\rightarrow Packed \Rightarrow Glass
 \rightarrow open tube \Rightarrow fused silica

classified depends functions