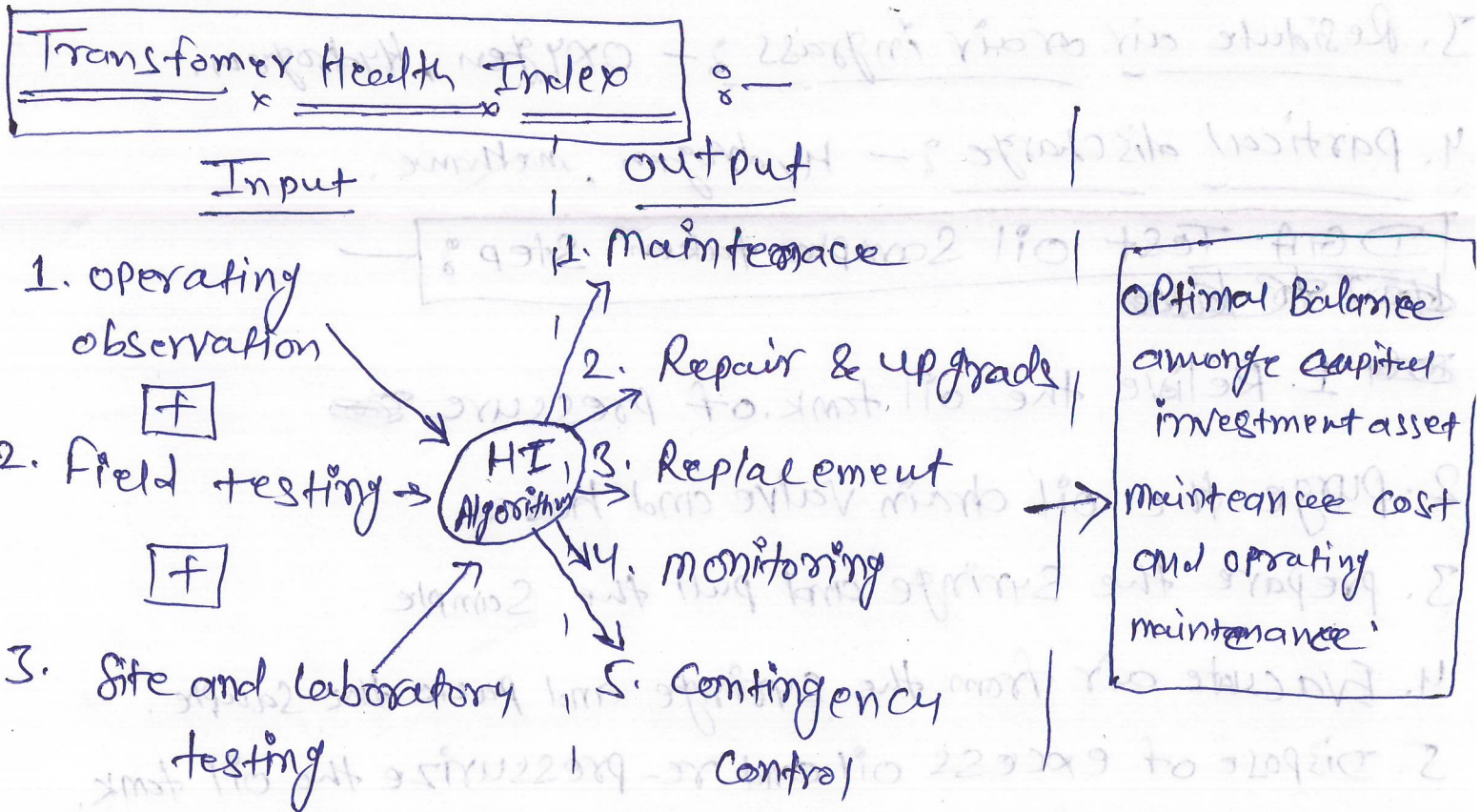


Transformer are key equipment in power grid. The stability of the power system is depending more and more on the safety and reliability of transformers. Health Index is a ~~new~~ practical tool that combined complex condition data into a single value as a comparative indication of the overall condition of a transformer.



DGA Test :- The analysis requires drawing an oil sample from the unit extracting the gasses from the sample, and analyzing the gasses through gas chromatography. The result of the chromatography tell the lab about different problems that may be arising inside the transformer.

The DGA has long been the most reliable and accurate method for determinint the internal condition of a transformer.

Common transformer problems and the gasses they produce:-

1. overheating of the oil \Rightarrow Hydrogen, methane, ethane, ethylene, acetylene.
2. overheating of the insulating paper:- Carbon monoxide, Carbon dioxide
3. Residue air or air ingress:- Oxygen, Hydrogen.
4. partial discharge:- Hydrogen, methane.

DGA Test Oil Sample taken Step:-

1. Relieve the oil tank of pressure
2. Purge the oil drain valve and hose
3. Prepare the syringe and pull the sample
4. Evacuate air from the syringe and pack the sample.
5. Dispose of excess oil and re-pressurize the oil tank.

DGA Test Normal Value	
Hydrogen (H_2)	100
Methane (CH_4)	120
Carbon monoxide (CO)	350
Acetylene (C_2H_2)	35
Ethylene (C_2H_4)	50
Ethane	6.5