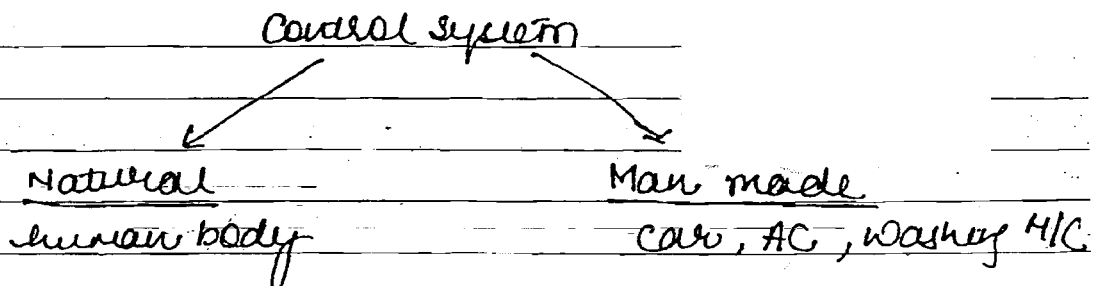
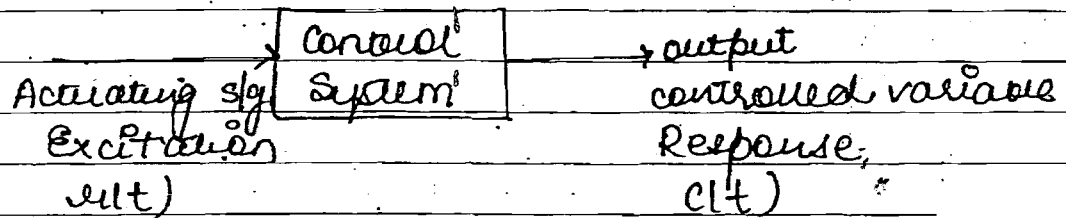


CONTROL SYSTEM

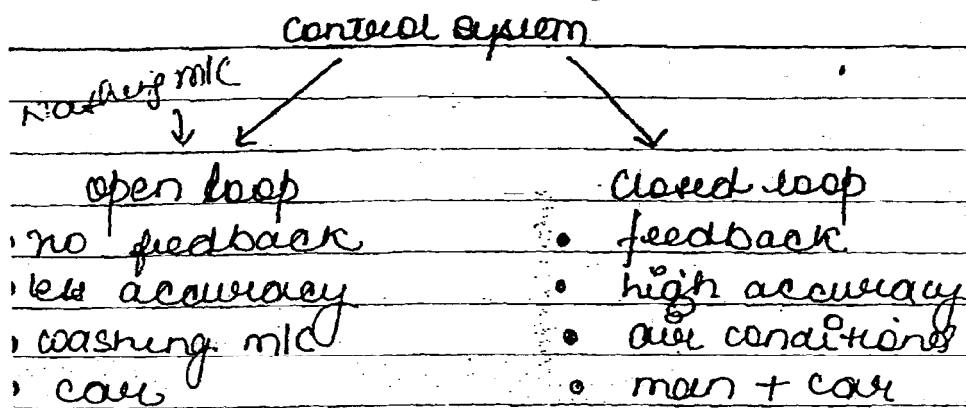
1. Transfer function 8-10 marks
2. Mathematical Modelling
3. Time Response Analysis
4. Root locus
5. Frequency Response Analysis
6. State space analysis
7. Design of control system

Control system is a system designed in order to control the value of certain variable or a quantity.

eg:- AC controls temperature
Accelerator controls speed

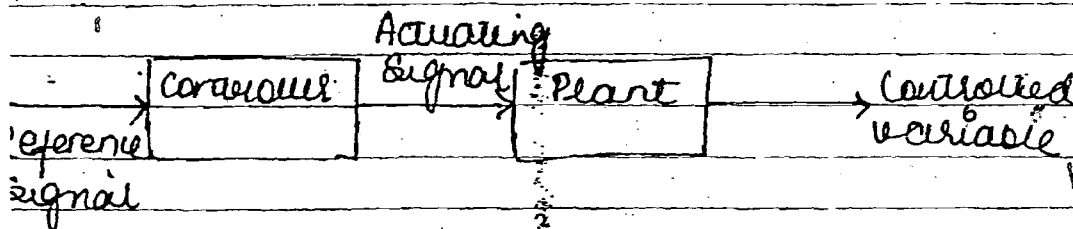


Pointing an object with a finger : Natural
A man driving a car : Mixed



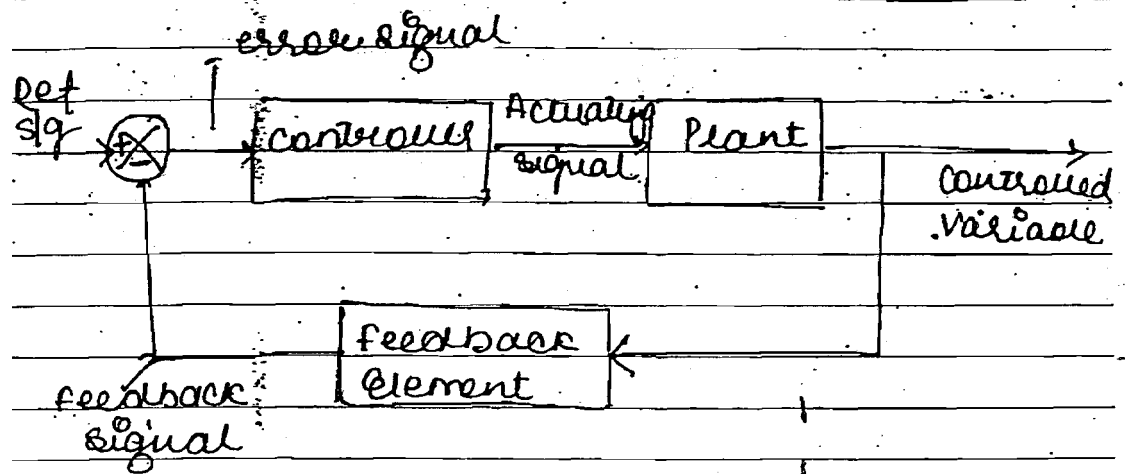
OPEN LOOP :
 control s/s in which there is no feedback path from output to input so that accuracy cannot be measured are called as open loop control system.

due to absence of feedback OLCs are not accurate



CLOSED LOOP CONTROL SYSTEM:

If there is a feedback path from output to input for comparison of desired output with the actual output, then it is called as closed loop control system.



closed loop ka stability se relation nahi it only increases accuracy.

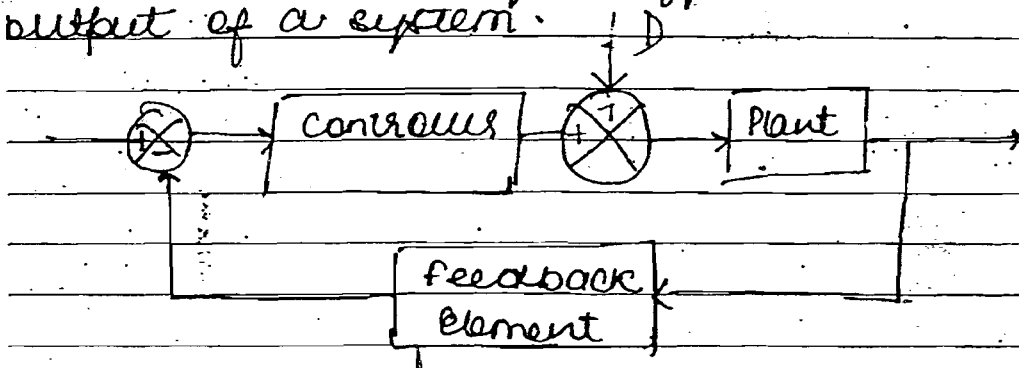
Terms associated with a Control System

Controlled variable: It is the quantity that is being controlled by a control s/s such as AC controls temperature.

Actuating signal: The output of controller which is fed to the plant in order to control its operation is called as actuating signal.

Plant : It is a set of machine parts which are working together in order to achieve the desired functionality eg: motor, gen etc.

Disturbance : It is an unwanted signal that is added with the desired signal in order to distort the actual waveform and it has harmful effect on the output of a system.



Controller is an electronic & its gain current is in mAmps so disturbance affects majority.

MATHEMATICAL MODELLING OF PHYSICAL SYSTEM

A physical system is a collection of physical objects connected together to achieve a desired objective.

Actual physical system has a lot of non-idealities of which if taken into consideration will make the model complex & increase the time of analysis.