

AMET-12 : CONTROL SYSTEM

1 INTRODUCTION TO CONTROL SYSTEM

Classification Of Systems, Open-Loop Control System, Closed-Loop Control Systems, Elements Of Automatic Or Feedback Control System, Requirement Of Automatic Control Systems

2 MATHEMATICAL MODELS OF CONTROL SYSTEM

Representation Of a Control System, Description Of Some Of Typical Physics System, Tachogenerators, Potentiometers, LVDT and Synchros, Synchros, Hydraulic Actuation

3 BASIC PRINCIPLES OF FEEDBACK CONTROL

The Control Objectives, Feedback Control System Characteristics, Proportional Mode Of Feedback Control, Integral Mode Of Feedback Control, Derivative Mode Of Feedback Control

4 TIME DOMAIN ANALYSIS AND FREQUENCY RESPONSE

Standard Test Signals, Static Accuracy, Computation Of Steady State Errors, Transient Response: First Order System, Transient Response: Second Order System, Transient Response Specification, Conclusion, Frequency Response, Frequency Domain Specifications, Magnitude And Phase Angle Characteristics Plot, Frequency Response Specification, Representation Sinusoidal Transfer Function

5 CONCEPTS OF STABILITY AND THE ROUTH STABILITY CRITERION

Bounded-Input Bounded-Output Stability, Zero-Input Stability, The Routh Stability Criterion

6 NYQUIST STABILITY CRITERION

Stability Margin, Phase Margin

7 BODE PLOTS

8 ROOT LOCUS

The transfer function of a second order control system, General Rules

