III Year B.Tech. EEE I-Sem

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CONTROL SYSTEMS AND SIMULATION LAB

Course Outcomes:

A15286	CONTROL SYSTEMS AND SIMULATION LAB
C327.1	Examine the time response of second order systems, Synchros, and truth tables verification by PLC.
C327.2	Design of AC servomotor and DC servomotor to find out their transfer function practically.
C327.3	Design of DC motor, DC generator, and finding out their transfer function practically.
C327.4	Analyze magnetic amplifier characteristics.
C327.5	Explain stability analysis through bode, nyquist and root locus plots using MATLAB

LIST OF EXPERIMENTS

Any Ten of the following experiments are to be conducted

1. Time response of Second order system
2. Characteristics of Synchros
3. Programmable logic controller – Study and verification of truth tables of logic gates, simple Boolean expressions and application of speed control of motor
4. Effect of feedback on DC servo motor
5. Transfer function of DC motor
6. Transfer function of DC Shunt generator
7. Characteristics of magnetic amplifiers

8. Characteristics of AC servo motor
9. PSPICE Simulation of Op-Amp based Integrator and Differentiator circuits.
10. Linear system analysis (Time domain analysis, Error analysis).
11. Stability analysis (Bode, Root Locus, Nyquist) of Linear Time Invariant system.
12. State space model for classical transfer function– Verification.

REFERENCE BOOKS

1. MATLAB and Tool books user's manual and- Math Works, USA.
2. PSPICE A/D Users Manual-Microsim,USA
3. PSPICE reference Guide –Microsim, USA.
4. Simulation of Electrical and Electronics Circuits Using P-Spice- By MH. Rashid, M/s PHI publications.