

UNIT-IV

CONTROL SYSTEM (23EE503)

S.No	Questions	BT	CO	PO
Part-A(ShortAnswerQuestions)				
1	Define stability of a control system.	L1	CO4	PO1
2	What is meant by steady-state accuracy?	L1	CO4	PO1
3	Define transient accuracy in a control system.	L1	CO4	PO1
4	What is disturbance rejection?	L1	CO4	PO1
5	What is meant by robustness of a control system?	L1	CO4	PO1
6	Define sensitivity and insensitivity in control systems.	L1	CO4	PO1
7	What is the root-locus method?	L1	CO4	PO1
8	State any two frequency-domain design specifications.	L1	CO4	PO1
9	What is a Proportional (P) Controller?	L1	CO4	PO1
10	What is an Integral (I) Controller?	L1	CO4	PO1
Part-B(LongAnswerQuestions)				
11	a) Explain the objectives of controller design, including stability, steady	L2	CO4	PO2
	b) Discuss the trade-offs involved in achieving these design objectives.	L3	CO4	PO2
12	a) Explain the Root-Locus method of feedback controller design.	L2	CO4	PO2
	b) Design a controller using the Root-Locus technique to meet given transient-response specifications.	L3	CO4	PO2
13	a) Explain the frequency-domain design specifications such as gain margin, phase margin, bandwidth, and crossover frequencies.	L2	CO4	PO2
	b) Discuss frequency-domain methods used for controller design.	L3	CO4	PO2
	a) Explain the working principles, advantages, and disadvantages of Proportional (P), Integral (I), and Derivative (D) controllers.	L2	CO4	PO2

14	b)	Discuss the application of PID controllers in improving system performance.	L2	CO4	PO2
15	a)	Explain Lead and Lag compensators with their transfer functions and frequency-response characteristics.	L2	CO4	PO2
	b)	Compare analog and digital implementation of controllers and discuss their practical applications.	L2	CO4	PO2