

UNIT-V

CONTROL SYSTEM (23EE503)

S.No	Questions	BT	CO	PO
Part-A(ShortAnswerQuestions)				
1	Define a state variable.	L1	CO5	PO1
2	What is a state-space model?	L1	CO5	PO1
3	What is meant by the state vector?	L1	CO5	PO1
4	Define the state matrix.	L1	CO5	PO1
5	What is diagonalization of a state matrix?	L2	CO5	PO1
6	What are eigenvalues of a system matrix?	L1	CO5	PO1
7	How are eigenvalues related to system stability?	L1	CO5	PO1
8	Define controllability of a system.	L1	CO5	PO1
9	Define observability of a system.	L1	CO5	PO1
10	What is pole placement by state feedback?	L1	CO5	PO1
Part-B(LongAnswerQuestions)				
11	a) Define state variables and explain the concept of state-space representation of a control system.	L2	CO5	PO2
	b) Derive the state-space model for a given transfer function and explain the significance of state variables.	L3	CO5	PO3
12	a) Explain the diagonalization of a state matrix and discuss its importance in system analysis.	L2	CO5	PO2
	b) Describe the procedure for solving state equations using the state transition matrix.	L3	CO5	PO4



13	a)	Define eigenvalues and explain their role in the stability analysis of dynamic systems.	L2	CO5	PO2
	b)	Discuss the relationship between eigenvalues and the stability of continuous-time and discrete-time systems.	L2	CO5	PO2



your roots to success...