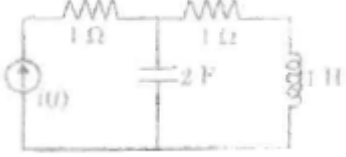


MODULE IV

Topic	Question	mark	Month & Year	Regulation
State space model-controllable, observable, diagonal canonical forms	Define and explain the following terms with respect to state space representation i) State ii) State variables iii) State vector iv) State space	5 7 5	Dec 08 Jun 09 Jun 11	2004 2004 2004
	What state space variable?	2	May 12	2009
	Explain about SISO system in detail	8	Jun 09	2004
	Define controllability	2	May 13	2009
	Write technical notes on i) State transition matrix ii) State space model			
	Define and explain State space analysis	5	Jun 09	2004
	Discuss in detail about the state space representation of Linear time Invariant system	10	May 12	2009
	State the advantages of state space techniques	5 5	Jun 08 Jun 07	2004 2004
	Explain diagonalisation in detail	7	Dec 10	2004
	Discuss in detail about Linear transformation and diagonalisation	10	May 12	2009
Modeling, time response, SS from TF and TF from SS	Obtain the state space representation for the system having differential equation $\frac{d^3y}{dt^3} + 5\frac{d^2y}{dt^2} + 6\frac{dy}{dt} + 3y = 6u(t)$	5	Dec 08	2004
	With a suitable example explain the method of deriving the transfer function from state model	10	May 13	2009
	Obtain the relation between transfer function and transfer matrix	7	Jun 09	2004
	Write the state equations for the circuit shown below 	5	Jun 08	2004
Modeling, time response, SS from TF and TF from SS	Consider the state equation of a system given below $\dot{x}(t) = \begin{bmatrix} 0 & 1 \\ -2 & -3 \end{bmatrix} x(t) + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u(t)$ $x(0) = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$ $y(t) = [1 \ 0]x(t)$ i) Determine the stability of the system ii) Find out the response of the system to unit step input			

	<p>Find the time response of the system described by the equation</p> $\dot{x}(t) = \begin{bmatrix} -1 & 1 \\ 0 & -2 \end{bmatrix} x(t) + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u(t)$ $x(0) = \begin{bmatrix} -1 \\ 0 \end{bmatrix}$ <p>Where $u(t) = -1 \quad t \geq 0$ $= 0 \quad t < 0$</p>	15	Jun 08	2004
	<p>A system is described by the following equations</p> $\dot{x}(t) = \begin{bmatrix} -1 & 1 \\ 0 & -2 \end{bmatrix} x(t) + \begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix} u(t)$ $y(t) = \begin{bmatrix} 1 & 2 \\ 1 & 0 \\ 1 & 1 \end{bmatrix} x(t)$ <p>find the transfer function of the system</p>	15	Jun 08	2004
	Write the state space model for a series RLC circuit in terms of charges and fluxes	5	May 12	2009
Solution of LTI equation and State transition matrix	With a suitable example explain the method of deriving the solution of non homogeneous state equation using Laplace transform method	10	May 13	2009
	Derive the solution of homogenous state equations	8	Dec 10	2004
	Derive the solution of homogenous and non homogenous state equations	15	Jun 07	2004
	Write any two properties of state transition matrix	2	May 13	2009
	Explain the properties of state transition matrix	5	Dec 10	2004
	Find the state transition matrix for $A = \begin{bmatrix} 0 & -1 \\ 2 & -3 \end{bmatrix}$	5	May 13	2009
	What is state transition matrix? Explain its properties	5	Jun 07	2004
State space representation of Discrete time systems	Derive the properties of state transition matrix	7 8	Dec 10 Jun 09	2004 2004
	Explain the state space models for continuous and discrete cases	8	Dec 10	2004
	Explain the state space representation of Discrete time systems	15	Jun 11	2004