Estd.: 2001
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MID-II Examination, Febraury-2019-20
Course: B.Tech, Branch- EEE, Year-II, Sem-II (A&B)
Subject:
Faculty Name: G.SRIDHAR
Duration: 60 minutes, Max marks: 10

Q.No	Question	Marks	Level of Bloom's Taxonomy	CO
	UNIT-III			
1.	list the rules to construct the root locus and also Explain the steps for the construction of root locus?	5	Understanding	3
3.	Given the open loop transfer function $G(s) = \frac{20}{s(1+3s)(1+4s)}$ draw the Bode plot and hence find the phase and gain margins	5	Analyzing	3
4.	Write the fundamentals of Root locus and What the advantages are of bode plot	5	Applying	3
5.	For the unity feedback control system has an open loop transfer function given below sketch the root locus $G(s) = \frac{K}{s(S+2)(S+6)}$	5	Analyzing	3
6.	Sketch the root locus for the OLTF G(s)=$\frac{K}{(s+1)(s+3)(s+6)}$ and determine the range of K for stability	5	Analyzing	3
	UNIT-IV			
1.	What is compensation? Obtain transfer function of Lead compensator and sketch its pole zero diagram and also find Maximum Lead angle Øm	5	Analyzing	4
2.	What is compensation? Obtain transfer function of Lag compensator and sketch its pole zero diagram and also find Maximum Lead angle Øm4	5	Analyzing	4

3.	Explain lead, lag, lad-lead, lead - lag compensator in detail.	5	Applying	4
	UNIT-V			
1.	Define state, state variables, state vector and state space. List the advantages of state space analysis over transfer function approach	5	Remembering	5
2.	Define state transition matrix and Write Properties of State Transition Matrix, and Compute e^{At} for the matrix $A = \begin{bmatrix} 0 & 1 \\ -2 & -3 \end{bmatrix}$	5	Analyzing	5
3.	Develop a state model in the canonical form by diagonalising Matrix A $\begin{bmatrix} \dot{x_1} \\ \dot{x_2} \\ \dot{x_3} \end{bmatrix} = \begin{bmatrix} 0 & 1 & -1 \\ -6 & -11 & 6 \\ -6 & -11 & 5 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} + \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix} u$ $Y = \begin{bmatrix} 1 & 0 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}$	5	Analyzing	5