R18

ANURAG Engineering College
(An Autonomous Institution)
II B.Tech I Semester Supplementary Examinations, Jan/Feb–2024
CONTROL SYSTEMS
(ELECTRICAL AND ELECTRONICS ENGINEERING)

Time: 3 Hours   **Max. Marks: 75**

Section – A (Short Answer type questions)   (25 Marks)
Answer All Questions

		Course Outcome	B.T Level	Marks
1.	List different examples of control systems.	CO1	L2	2M
2.	Write the transfer function of AC servomotor and DC servomotor.	CO1	L1	3M
3.	Define Steady state response.	CO2	L2	2M
4.	Define Transient response.	CO2	L1	3M
5.	Define poles and zeros.	CO3	L2	2M
6.	Define Gain margin and Phase margin	CO3	L1	3M
7.	What are PID controllers.	CO4	L2	2M
8.	What are lag/lead/ lag-lead compensators?	CO4	L1	3M
9.	What are the state variables and state model.	CO5	L1	2M
10.	Define State transition matrix?	CO5	L1	3M

Section B (Essay Questions)
Answer all questions, each question carries equal marks.   (5 X 10M = 50M)

11.	A)	Write the procedure for Block diagram reduction technique to obtain the transfer function.	CO1	L3	10M
		OR			
	B)	Explain in detail about i) Signal flow graph ii) Mason's gain formula	CO1	L3	10M
12.	A)	Explain about the Standard test signals	CO2	L3	10M
		OR			
	B)	Differentiate between steady state response and transient state response.	CO2	L3	10M
13.	A)	Write the procedure for obtaining Root Locus Technique	CO3	L3	10M
		OR			
	B)	Write the procedure for drawing Bode Plots.	CO3	L3	10M
14.	A)	Compare Polar Plots and Nyquist Plots	CO4	L3	10M
		OR			
	B)	Define Lag, Lead and Lead-Lag compensators and PID Controllers.	CO4	L3	10M
15.	A)	Define state variables, state model and State Transition Matrix.	CO5	L3	10M
		OR			
	B)	Write the procedure to obtain state transition matrix for the system	CO5	L3	10M