GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Engineering

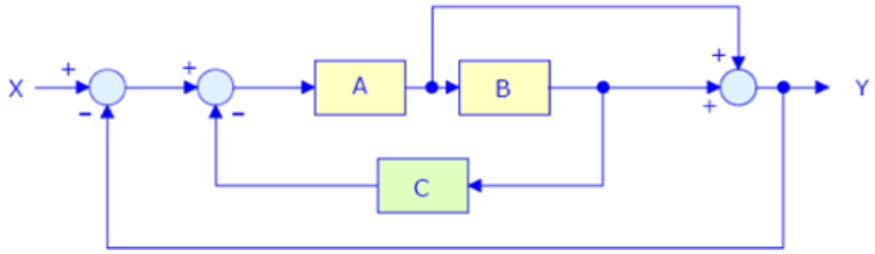
B.TECH Electronics and Communication Engineering in Artificial Intelligence and Machine
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem VI - G2UC601T - Control System

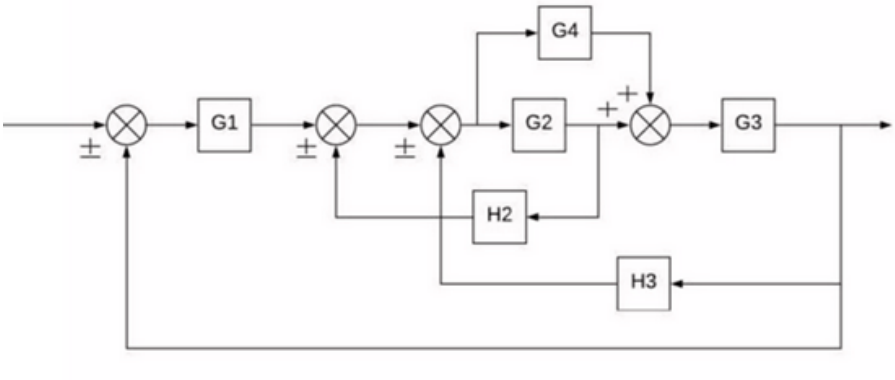
General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Define block reduction in control systems and explain its significance in simplifying complex systems.	K1	(2)
2)	Discuss the construction of bode plots.	K2	(4)
3)	Analyze the control system with noise signal in open loop and close loop system respectively.	K2	(6)
4)	Using Mason's formula evaluate the transfer function of the given control system.	K3	(9)



5)	Describe the steps involved in block reduction for a control system with multiple interconnected blocks.	K3	(9)
6)	Describe the Routh-Hurwitz stability criterion and its application in determining system stability.	K5	(10)
7)	Compare and contrast the time responses of first-order and second-order control systems. How does the number of poles affect the time response?	K4	(12)

8) Reduce the given block diagram using block reduction technique and find the open loop transfer functioin, feed forward gain and error ratio. K5 (15)



9) Explain the effects of damping ratio on the time response of a second-order control system. K5 (15)

10) Considering the series RC filter circuit, design the block diagram representation and estimate the transfer function. K6 (18)