Total number of printed pages: **Programme(D)/V-Semester/DECE-513B**

2022

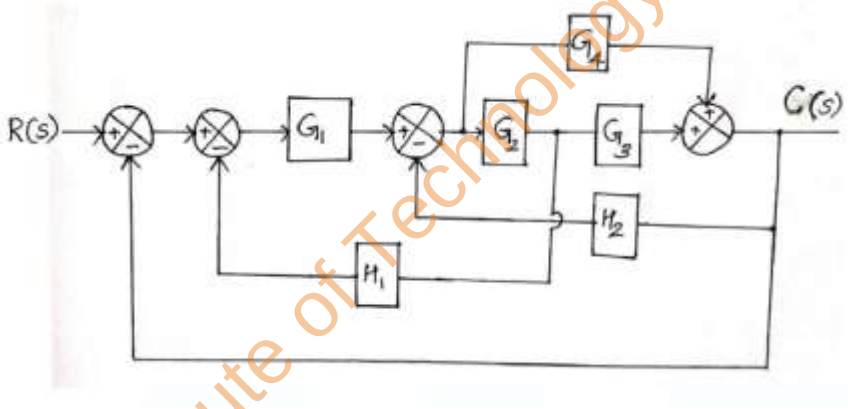
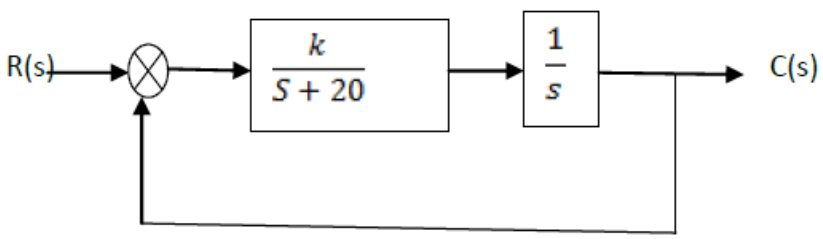
Control Systems

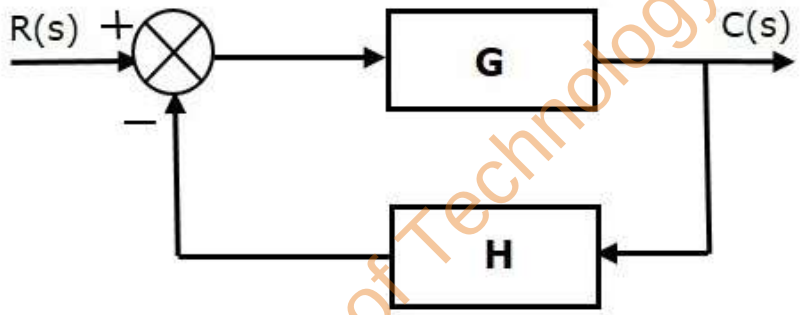
Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.		Using the block diagram reduction find the *C(s)/R(s)* of the following 	20
2.		Derive an expression for time response of a first order under damped system to impulse input.	20
3.		Write a short note on the following: 1) RAM and ROM 2.) Central processing unit 3) Time varying and Time invariant system 4) Linear and nonlinear system.	20
4.		For k=5, write the characteristic polynomial of a system is 	20

		Determine the location of roots on s-plane and hence comment on the stability of the system using Routh-Hurwitz criterion	
5.		Using the Laplace transform method derive the current in series RC circuit when the input x(t) is 1) Impulse signal (2) Unit step signal	10+10
6.		Write a short note on the 1) Phase lead compensator 2) Phase lag compensator	20
7.		For the system shown in figure  Find the steady state error when G=1/sT and H=1 and R is a) Unit impulse input b) Unit step input c) Ramp input	20