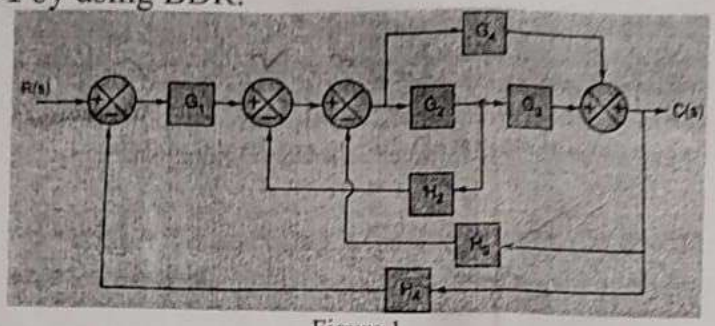
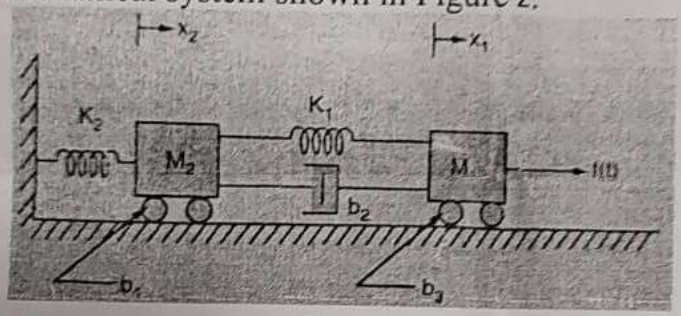
B.Tech (E&C) Vth Semester **September 2022**

ECS-503: Control Systems

Time: 1Hr **Sessional Test-1** **M. Marks: 16**

Attempt all questions

Questions	Marks	
Q1(a). Determine the overall transfer function for the system shown in Figure 1 by using BDR.  Figure 1	4	CO1
Q1(b). Using force-current analogy, determine the transfer function for the mechanical system shown in Figure 2.  Figure 2	4	CO1
Q2(a).Determine the overall system transfer function for the system shown in Figure 1, using SFG.	4	CO2
Q2(b).Comment on the closed loop stability of a unity feedback system characterized by .	4	CO2

$G(s) = \frac{5}{s(s^4+s^3+2s^2+2s+3)+5}$ $G_1(G_2G_3+G_4)$