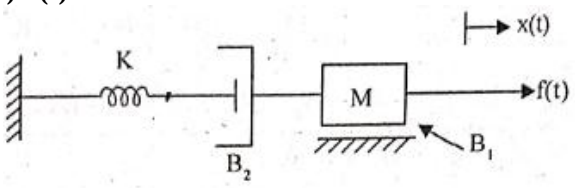
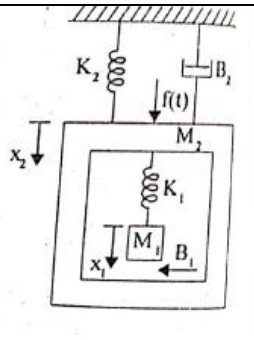
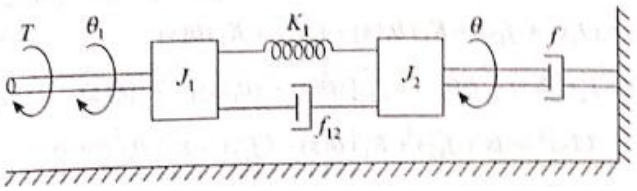
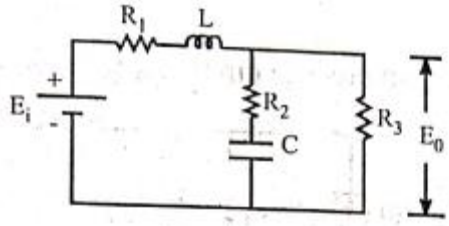
Scheme Of Evaluation
Internal Assessment Test 1 – March 2019

Sub:	CONTROL SYSTEMS							Code:	15EE61
Date:	05/03/2019	Duration:	EEE	Max Marks:	50	Sem:	VI	Branch:	EEE

Note: Answer Any Five Questions

Question #		Description	Marks Distribution		Max Marks
1	a)	**Differentiate open loop and closed loop control system with examples.** • 4 differences , Each difference 1 mark • Example	1 *4=4M 1 M	05 M	10 M
	b)	**What are fundamental components of mechanical rotational systems? Explain with equations** • 3 elements • 3 equations with diagram	2M 3 M	05 M	
2	a)	**For the mechanical system shown in Fig 2 obtain the transfer function X(s)/F(s)**  Fig 2 • Free body diagram • Differential equations • Laplace transformation • Final equations	2M 3M 3M 2M	10M	10M
3	a)	**Write the differential equations governing the following system shown in Fig 3 and obtain the analogous F-V circuit and F-I circuit.**			

		 **Fig 3** • Differential equations in time and frequency domain • Analogous equations • F-V circuit • F-I circuit	4M 2M 2M 2M	10 M	10 M
4	a)	Write the differential equations governing the following system shown in fig 4 and obtain the transfer function Θ(s)/T(s)  Fig 4 • Free body diagram • Differential equations • Laplace transformation • Final equations	2M 3M 3M 2M	10M	1 10 M
5	a)	**Obtain the transfer function of the given network in the Fig 5**  Fig 5 • KVL equations in time and frequency domain • Derivations and final result	6M 4 M	10M	10 M
6	a)	Using relevant equations obtain the mathematical model armature controlled dc motor. • Back emf equation • Torque equation	2M 2M		

		• Load equation • Transfer equation • Block diagram	2M 2M 2M	10M	10 M