



Assume any missing data....Exam is two pages.

Attempt the following questions:

Max. Marks (50)

(Q1) Find the transfer function $V_L(s)/V(s)$ for the electrical network shown in fig.1.

(10marks)

(Q2) Find the transfer function, $G(s) = E_o(s)/E_i(s)$ for the circuit given in Fig.2.

(8marks)

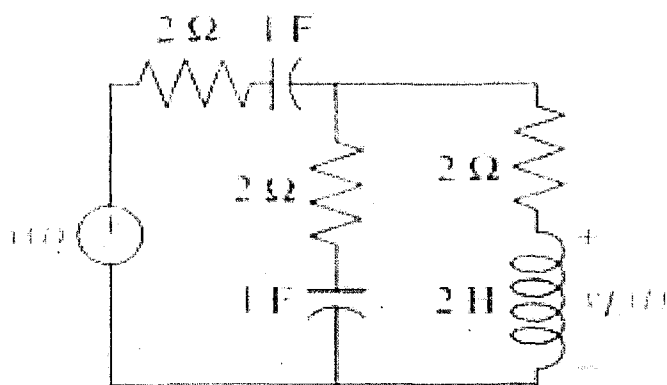


fig.1

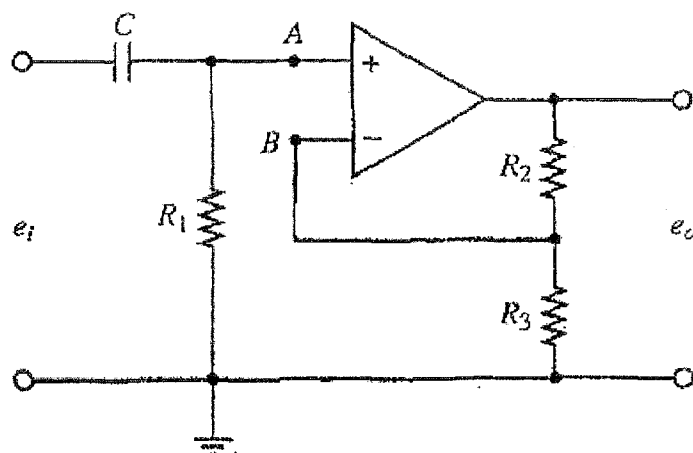


fig.2

(Q3) Find the T.F of an armature controlled D.C motor then constructs its block diagram.

(10marks)

(Q4) Simplify the block diagram shown in fig.3. Then, obtain the closed-loop transfer function $C(s)/R(s)$.

(12marks)

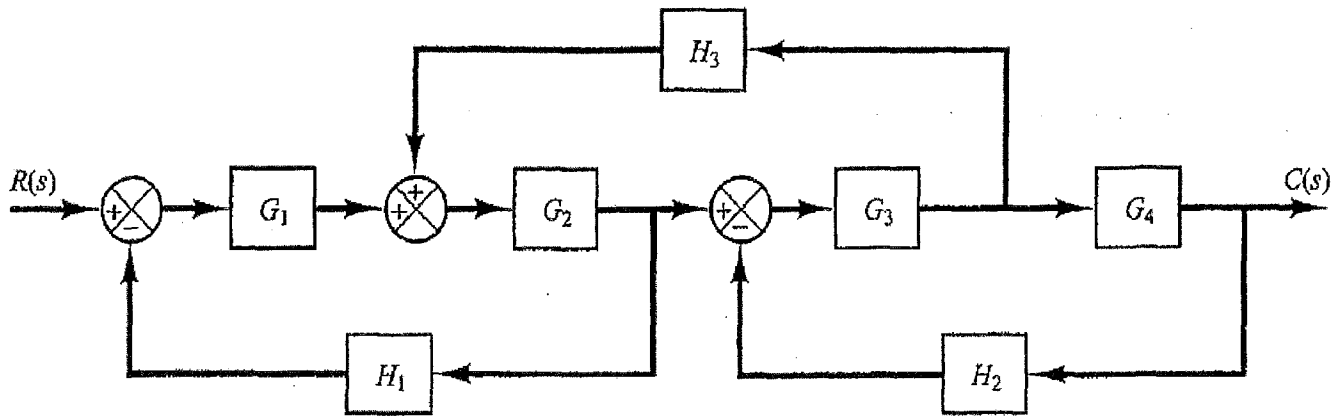


fig.3

(Q5) for the system shown in fig.4. Find K_1 , K_2 , t_r , t_s for 2% error, w_n , and w_d .

Then, draw the output response where, $M_p=20\%$ and $t_p=1\text{sec}$. (13marks)

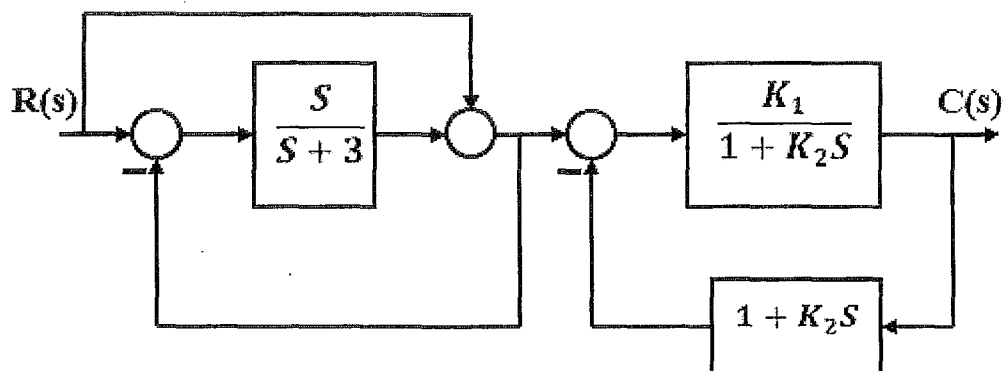


fig.4

With my best wishes.
Dr. Mahmoud M. Saafan
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