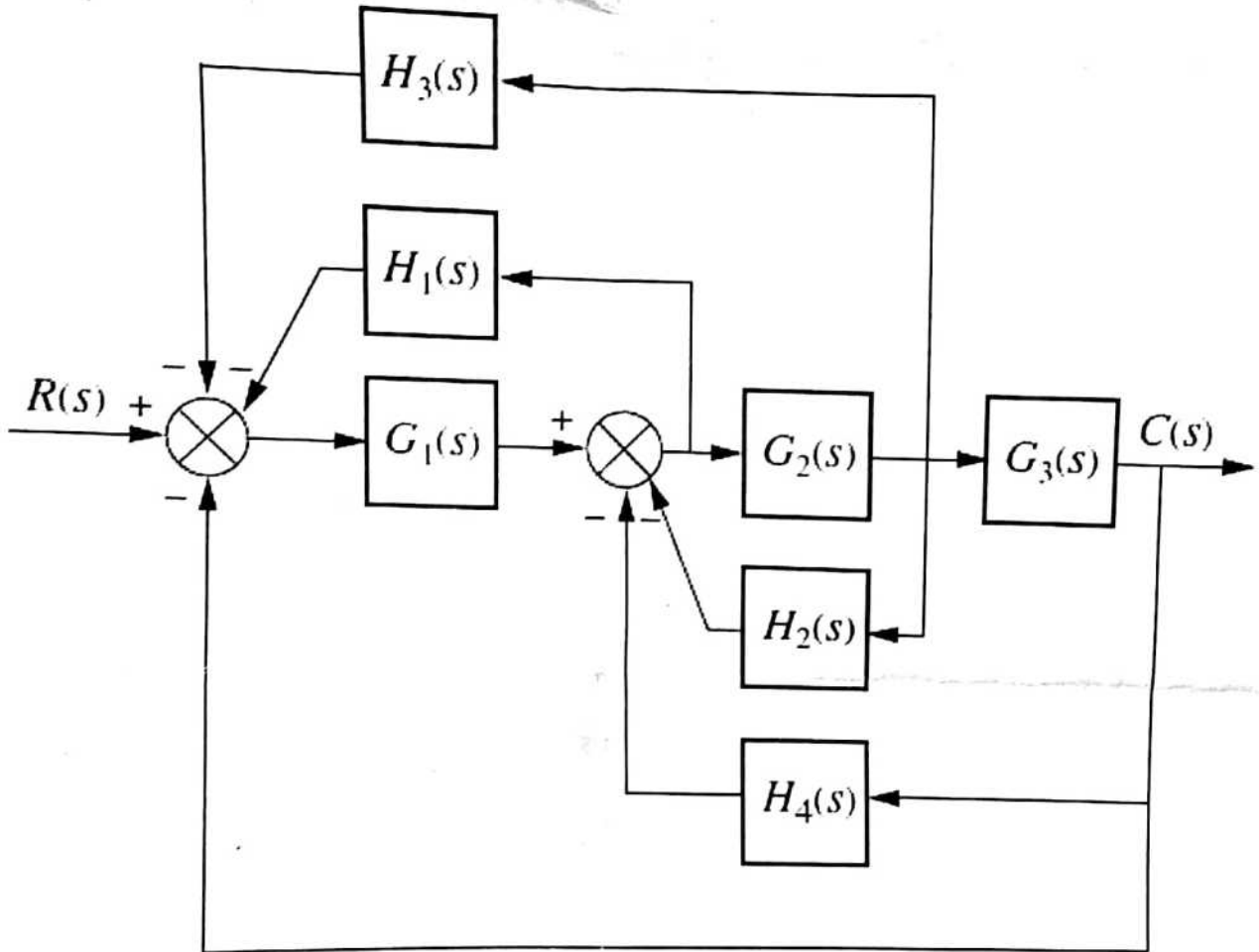


1. Solve using Laplace transforms

$$y'' + y = \begin{cases} \sin t & 0 \leq t \leq \pi \\ 0 & t > \pi \end{cases} \quad y(0) = y'(0) = 0.$$

2. Find the transfer function $C(s)/R(s)$ by block diagram reduction techniques.



3. Find the transfer function $Y(s)/R(s)$ using Mason's gain rule

