# 國立屏東科技大學　九十五　學年度　碩士班暨碩士在職專班招生考試

## 自動控制(生物機電工程系 試題)

【每題 25 分，共計 100 分】

1. Find the transfer function of the system via Masson's Rule (Fig1.)

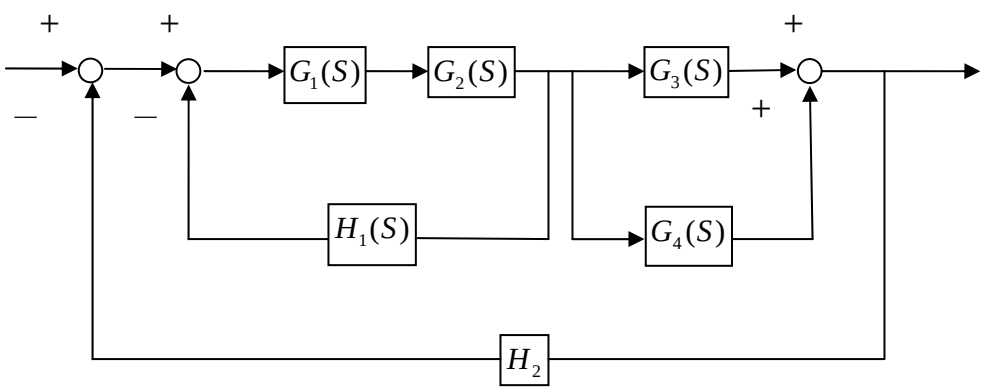
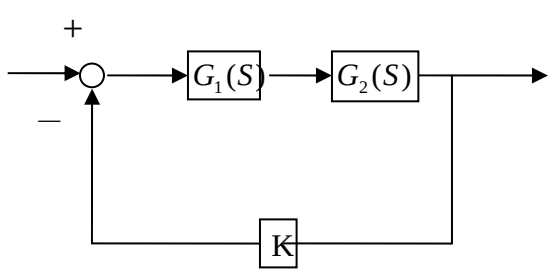



Fig1.

2. Find the range of gain ,K**,** for the system of Fig. 2 that will cause the system to be stable.

$G_1(s) = \frac{1}{(s+4)}, G_2(s) = \frac{10}{s(s+1)}$




. Fig.2

3. The characteristic equation of linear control system is given as follows, construct the root loci for positive K. Eq. : $s(s+4)(s^2+4s+20)+K=0$.

4. Find out the steady state solution of the below physical system with the initial condition of

$X(0)=2, \dot{X}(0)=-2$, $f(t)=6u(t)$, $u(t)=1$ for $t \geq 0$, $u(t)=0$ for $t<0$. $M=1, C=3, K=2$.

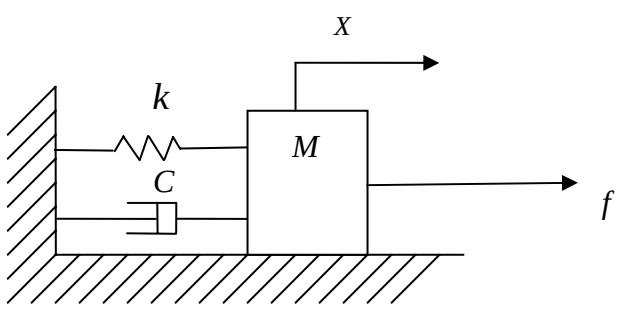



Fig. 3