

1. 言式各等 - 實例說明零階系統, 一階系統, 與二階系統。
 (15%)

2. 言式說明高階動態系統降階建模之原理及法則。
 (10%)

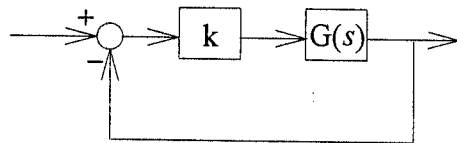
3. 若有一二階動態系統, 請問如何以步階測試求得系統
 (25%) 之特性。

(8%) 4. For a linear SISO system, how do you find out if the system is time-varying or time-invariant?

(8%) 5. For a linear time-invariant system, is the stability of the system related to the inputs or initial conditions?

(18%) 6. There are two L.T.I. systems. You are asked to compare their "relative stability" by using Routh-Hurwitz criterion and Nyquist stability criterion. Please explain both procedures in detail, respectively.

(16%) 7. Consider a feedback control system sketched below.



$$G(s) = \frac{(s+a+jb)(s+a-jb)}{s^4 + 16s^3 + 128s^2 + 512s + 624} \quad (a, b \in \mathbb{R})$$

Find conditions to guarantee the stability of the feedback system for $k \rightarrow \infty$.