Questions MIDA 2

A series of answered questions from past exams of the course MIDA 2 as taught in Politecnico di Milano by Savaresi

Questions MIDA 2

- 1 Briefly explain the concept of minimum variance control for a given plant described by an ARX model, when can this method be used and when not?
- 2 How can we estimate both the state x(t) and the unknown parameter a of the system $\begin{cases} x(t+1)=ax(t)+v_1(t)\\ y(t)=x(t)+v_2(t) \end{cases}$ by means of the extended Kalman filter

1 - Briefly explain the concept of minimum variance control for a given plant described by an ARX model, when can this method be used and when not?	

2 - How can we estimate both the state x(t) and the unknown parameter a of the system $\begin{cases} x(t+1)=ax(t)+v_1(t) \\ y(t)=x(t)+v_2(t) \end{cases}$ by means of the extended Kalman filter