

MODEL IDENTIFICATION AND ADAPTIVE SYSTEMS

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Answer the following questions:

- 1) Illustrate the gain scheduling method for adaptive control, discussing its strengths and weaknesses.
- 2) Illustrate the simplifications to Newton's method that are employed in the development of the LMS algorithm.
- 3) Explain the relationship between the Difference Riccati Equation (DRE) and the Algebraic Riccati Equation (ARE) in the Kalman filter.
- 4) What is a basis function? Illustrate some commonly used basis functions.

Instructions:

- Report your name and identification number on the top right corner of the first page.
- Use separate pages for answers to different questions (one page for each question).
- Books, course slides, notes are not allowed, as well as the use of communication devices (e.g. smartphones).