

**Aids Allowed:** ONLY your *own notes* taken during lectures and office hours, the lecture *slides and recordings* (for all sections), and the *Course Notes* (textbook).

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### Submission Instructions

- Submit your work directly on **MarkUs**—even if you are late!
  - You may type your answers or hand-write them *legibly*, on paper or using a tablet and stylus.
  - You may write your answers directly on the question paper, or on another piece of paper/document.
  - You may submit your answers as a single file/document or as multiple files/documents. Each document may contain answers for only part of one question, an entire question, or multiple questions, but *please label each part of your answers* to make it clear what you are answering.
  - There is no “required file”, *but please give short names to your file(s)*, like “Q2.png” or “TT4.pdf”.
  - You **must** submit your answers in PDF or as photos (JPEG/JPG/GIF/PNG/HEIC/HEIF). **Other formats** (e.g., Word documents, L<sup>A</sup>T<sub>E</sub>X source files, ZIP files) **are NOT accepted**—you must **export** or **compile** documents to PDF, **convert** images into a supported format, and upload each file **individually**.
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For all questions in this test, write your proofs *formally*, including a header and a proof body with justifications for each deduction. Remember that we are looking for evidence that you understand the conventions for writing correct proofs, so pay attention to the *structure* of your answers, in addition to their content!

### 0. [0 marks] Academic Integrity Statement.

By signing this Statement, I attest to the fact that I have abided fully by the *Code of Behaviour on Academic Matters*. I have not committed academic misconduct and I am aware of the penalties that may be imposed if I have committed an academic offence.

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(student number)

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(sign or print your name)

**Please take 2 minutes to submit your answer to this question RIGHT NOW, before you look at other questions and forget!**

*Reminder: this test contains **five (5)** separate questions, plus the Academic Integrity statement!*