John's exam advice

- ▶ IME, biggest cause of lost marks is not attempting questions! When students try, they usually pick up some marks.

- ▶ Consider approaching the exam 'breadth-first': get the low-hanging fruit, then return to the harder parts. (But do ensure answers are in right part of the booklet!)

- ▶ Don't waste time copying out info from the question. No marks given for this!   E.g. if the question is

  (b) Which of the following three statements are true and which are false? You need not justify your answers.

  $$n + 1 = o(n + 1000) \qquad n = o(1000n) \qquad n = o(n^{1000})$$

  it's enough to write

  (b) False, false, true

For more mathematical questions . . .

- Use English words to show logical structure of argument. E.g. suppose the question is:

  Show formally from the definition of o that $100n^3 = o(n^4)$.

  Don't just write math formulae . . . Instead, write . . .

  Given any $c > 0$, pick $N > 100/c$. Then for any $n \geq N$,

  $$100n^3 = c(100/c)n^3 < c.n.n^3 = cn^4.$$

- As computer scientists, you're well aware that:
  - Variables must be in scope, i.e. declared/created before use,
  - Expressions and formulae must typecheck.

  These apply when writing maths as well! E.g. don't write:
  - $\exists c > 0. \, \forall n \geq N. \, \exists N \geq 0. \cdots$.
  - Let $G = (V, E)$ be a graph. Given $x, y \in V, \ldots x \in E \ldots$

Remember . . .

We're basically looking for reasons to give you marks.

We're not basically looking for reasons to withhold them.

Good luck!!