MAT4199: Exam guidelines

Format
The exam consists of two parts:

- a set of three questions everyone should complete
- a set of five questions undergrads should choose three problems from and graduate students should choose four problems from.

Not all problems are equally easy (hard) but they are in line with examples done in class and problems practiced in the homework assignments.

The exam is closed book; no notes of any kind are allowed.

Preparation
First of all, you should know the important definitions and theorems. For example, you should know what the definition of a recursive (r.e., m-complete, simple, . . . ) set is, you should be able to state the recursion theorems (Rice’s theorem, Incompleteness theorem, . . . ).

Next, you should understand the relevance of these definitions and results for the material, and you should be able to apply them in standard cases, and to know some of the typical examples. For example, knowing the definition of m-completeness, you should know that the halting set is m-complete, and you should be able to show that certain sets relating to the halting set are m-complete. You don’t need to memorize the more complicated proofs given in the lectures (e.g. I won’t ask you to reproduce the priority construction) but you should understand certain standard proof techniques, such as the diagonal argument. You don’t have to remember all of the details involving, say, the coding of syntax and proofs, but you do need to understand the ideas behind it. You should know how to write register machine programs, either with or without macros.

In class, we had the occasional digression into the history and/or philosophy of the subject. You won’t be asked any questions on that.

Final tips
I really don’t know what to say here, except for that the harder you study, the better.