

## **CMC1, Exam Questions, January 2021**

- 1) Give an overview of programming language specification and the compilation process using your compiler project as an example.
- 2) Describe the structure of your compiler. Describe the role of the individual phases in a compiler.
- 3) Describe context-free grammars and their usage. Describe left factorization and removal of left recursion in grammars. Use the grammar from your project as an example.
- 4) Describe regular expressions and how you have used them to describe the tokens of your language and in the construction of your scanner.
- 5) Describe recursive descent parsing and how to construct a recursive descent parser from a grammar using your compiler as an example.
- 6) Describe the abstract syntax tree of your compiler and abstract syntax trees in general.
- 7) Give examples of semantic rules in your programming language. Describe how to make a contextual analyzer for an abstract syntax tree.
- 8) Describe the runtime organization for your programming language, including (but not limited to) data representation, storage allocation, and routine calls.
- 9) Illustrate how you have described the code generation of your compiler. Describe how to make a code generator for a compiler.