

THE UNIVERSITY OF BIRMINGHAM

Sample Exam Questions

**06 06995**

Fundamentals of Computer Science Part i2

3 hours

[Answer ALL Questions]

## Part i2

1. Name the main components of the von Neumann computer design and briefly explain their function. [3%]
2. Describe how each of the following is represented in computer memory: [4%]
  - (a) an integer number, e.g. 10 and -3;
  - (b) a real number, e.g. 1.05.
3. What is the function of a **NAND** gate? [2%]
4. Translate the pseudocode instruction:  
$$X = (Y+10)*2$$
into machine code, assuming the first instruction is placed at address 100 and integer variables X and Y are placed at address 200 and 201 respectively. [4%]
5. Describe the main phases of a compiler. [2%]