Please note, this is a mock examination to make you familiar with the style of the final exam. There will be 13 questions in the final exam, which is worth 40 marks. Marks are as indicated for each question. You have 120 min to answer the questions (3 min per mark), plus 30 min technical time to upload/download the question/answer papers.

Question 1 **(2 marks)**

Describe the running time (in big-O notation) of the following algorithm in terms of input parameter *n*. The given bound should be as tight and as simple as possible. Briefly explain your answer.

```
Algorithm: getStuffDone(n)
    i ← 1
    m ← 1
    while i < n do
        i ← i + 1
        m ← m + m
        for j ← 1 to m do
            ...    // These statements run in constant time
    return
```

Question 2 **(2 marks)**

a) The Knuth-Morris-Pratt algorithm pre-processes a pattern P to build a failure function F. Compute the table of the failure function F for the pattern P=”KOKKOLA”.