UNIVERSITY
OF SKÖVDE

School of Informatics

WRITTEN EXAMINATION

Course: advanced programming

Sub-course

Course code: IT712A

Credits for written examination: 5,5 hp

Date: 2015-12-16

Examination time: 1415-1730 (3 h)

Examination responsible

Teachers concerned: Vicenc Torra

Aid at the exam/appendices

Other

Instructions

- ☐ Take a new sheet of paper for each teacher.
- ☐ Take a new sheet of paper when starting a new question.
- ☒ Write only on one side of the paper.
- ☒ Write your name and personal ID No. on all pages you hand in.
- ☒ Use page numbering.
- ☒ Don´t use a red pen.
- ☒ Mark answered questions with a cross on the cover sheet.

Grade points

Examination results should be made public within 18 working days

Good luck!

Total number of pages

Exam. Advanced Programming (Course code: IT712A)
The exam consists of 5 exercises.

Exercise 1. (20 points) Define a recursive version of the function `from(n,m)` with n and m integers. The function returns the list of integers from n to m. Assume $n \leq m$.

Exercise 2. (25 points) Given a row of Pascal's triangle (or Tartaglia's triangle) build a new row. Recall that given the row

$$[a_1, a_2, a_3, \ldots a_{n-1}, a_n]$$

the new row will be

$$[1, (a_1 + a_2), (a_2 + a_3), (a_3 + a_4), \ldots (a_{n-1} + a_n), 1].$$

Exercise 3. (25 points) Define the function `interleave` that given two streams s1 and s2 returns another stream with the elements of s1 and s2 interleaved. E.g., if we call

```
interleave(Stream(1,2,3,4),Stream(10,20,30,40))
```

we should get the stream (1,10,2,20,3,30,4,40).

Exercise 4. (20 points) Define the function append that given two lists of integers returns their concatenation.

Exercise 5. (10 points) Discuss briefly (maximum 5-10 lines) currification. Discuss if any of the functions you have defined is currified, and compare a currified version and a non-currified version of the function `from(n,m)`.