

## Comments Section A (Questions 1 and 2)

## Question 1

In line with the previous years, a minority of the students selected this question. Although there were some good answers, the average mark was reasonably low (this is also in line with previous years). The main source of errors was the problem of translating the real decimal numbers into the floating point format and perform the rounding of the mantissa. The remainder of the question was mainly done wrong as a result of this.

## Question 2

This question was answered by a majority of students. There was a number of excellent answers. Most of the mistakes were related to the stability and consistency of the method. There were some mistakes in calculating the numerical values (mainly from swapping degrees and radians when calculating a trigonometric function). Overall, the quality of work was more than satisfactory and in line with previous years.

## Section B (Questions 3 and 4)

More students answered Q3 than Q4 (23/15 respectively). Overall Q3 had much better scores, with half of the exams earning a score equal or larger than 80%; while for Q4 only 13% of marks reached that score.

Unfortunately there were a few exams which showed some very fundamental errors, such as completely confusing an algorithm for something else (in some cases for fictional algorithms); it seems this is the outcome of not attending lectures and possibly also not listening to podcasts. On the other hand, I am happy to see that several perfect scores (100%).

There was no particular recurring error on any question.

## Section C (Questions 5 and 6)

## General comments and statistics

1.38 students presented the exam on the 1st June, 2016.

2. Section C was marked with a maximum of 25 marks.

3. The average mark of section C has been 14.82/25 which represents a 59.3% of performance.

4. There have been very good marks (36.8% of students) and some very bad marks. There is probably a correlation of attendance to classes with obtaining an excellent mark. The results are:

a) Number of students with 25/25 (100%): 2 students (5.3% of 38)

b) Number of students with a mark between 17.5/25 and 25/25 (70%-100%), including the ones with 25/25: 14 students (36.8% of 38).

c) Number of students with a mark between 17.5/25 and 12.5/25 (70%-50%): 11 students (28.9% of 38).

d) Number of students with a mark between 12.5/25 and 0 (50%-0%): 13 students (34.2% of 38).

e) No student had 0/25. The lowest mark was 1/25.

5. All the students answered Question 5. It is clear why most of the students answered this question. Question 5 was about complex network models and topological properties. It was the first part of this module. Question 6 is related to the second part of this module, and is about synchronisation and self-organisation in dynamical networks. Students in computer science are not used to this topic, indeed, most of them admitted in class that they have never seen a dynamical system or a differential equation before this course. I am surprised indeed that nobody answered Question 6, since this year, I made a lot of emphasis on this topic in the coursework and in the class than in previous years. I am sure some of you will make use of these concepts in the near future.

## Specific comments on Question 5

1) Connectivity in complex networks is related to the degree distribution, which is not the average degree of a network.

2) Now, all of you know what a scale-free network is. In general, most of you have a clear idea what a complex network is and how you can measure its topological properties.

## Final comment

It has been really a pleasure to teach you this exciting topic. I have learnt a lot from you and I have enjoyed a lot the lectures thanks to your questions and thoughts. I hope that you can use this in the future. Do not lose the enthusiasm and passion for this fascinating topic. Good luck!