



THEORETICAL COMPETITION

Tuesday, July 23rd, 2002

Please read this first:

1. The time available is 5 hours for the theoretical competition.
2. Use only the pen provided.
3. Use only the front side of the paper.
4. Begin each part of the problem on a separate sheet.
5. For each question, in addition to the *answer sheets* where you will write your solutions, there is some scrap paper for rough work.
6. Numerical results should be written with as many digits as are appropriate for the given data.
7. Write on the *answer sheets* whatever you consider is required for the solution of the question. Please use *as little text as possible*; express yourself primarily in equations, numbers, figures, and plots, and use the symbols that are given in the text to express physical quantities.
8. Fill in the boxes at the top of each sheet of paper used by writing your *Country*, your student number (*Student No.*), the number of the question (*Question No.*), the progressive number of each sheet (*Page No.*), and the total number of blank sheets used for each question (*Total Pages*). Write the question number and the section letter of the part you are answering at the top of each sheet. If you use some blank sheets of paper for notes that you do not wish to be marked, put a large X across the entire sheet and do not include it in your numbering.
9. At the end of the exam, arrange all sheets for each problem *in the following order*:
 - Used Answer Sheets in order
 - Scrap papers
 - The sheets you do not wish to be marked
 - Unused sheets and the printed question

Place the papers inside the envelope and leave everything on your desk. You are not allowed to take *any* sheets of paper out of the room.