

The Fourth Asian Physics Olympiad

Mahidol University, Bangkok-Salaya, Thailand

Theoretical Competition
Wednesday 23 April 2003
9.00 –14.00 hrs.

Please read this first:

1. The time available is 5 hours for the theoretical questions.
2. Use only the pen given in your pack.
3. Use only the front side of the sheets of paper provided.
4. Each question should be answered on separate sheets of paper.
5. For each question, in addition to the *blank writing sheets* where you may write, there is an *answer sheet* where you *must* summarize the results you have obtained. Numerical results should be written with as many digits as are appropriate to the given data. Do not forget to state the units.
6. Write on the blank sheets of paper whatever else you consider is required for the solution of the question and that you wish to be marked. However you should use mainly equations, numbers, symbols, graphs and diagrams. Please use *as little text as possible*.
7. *It is absolutely essential* that you enter in the boxes at the top of each sheet of paper used your student number (*Student No.*). In addition, on the blank sheets of paper used for each question, you should enter the number of the question (*Question No.*), the progressive number of each sheet (*Page No.*) and the total number of blank sheets that you have used and wish to be marked for each question (*Total No. of pages*). It is also helpful to write the question number and the section label of the part you are answering at the beginning of each sheet of writing paper. If you use some blank sheets of paper for notes that you do not wish to be marked, put a large cross through the whole sheet and do not include it in your numbering.
8. When you have finished, arrange all sheets *in proper order* (for *each* question put answer sheets first, then used sheets in order, followed by the printed question, the sheets you do not wish to be marked and unused sheets at the bottom). Clip all of your papers and leave everything on your desk. You are not allowed to take *any* sheets of paper out of the room.