

Summary of Examiner's Reports for NST maths 1A and 1B

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1 NST maths 1A

The format differed from that of previous years because of the introduction on each paper of a section A comprising short questions to test skills; section A1 (on paper 1) tests school-based skills and section A2 (on paper 2) tests skills acquired at Cambridge. The following section B each consists of 10 questions, two of which are starred requiring knowledge of B-course material. It was gratifying that no reports of misconduct were received nor were there any reported errors in the exam papers. The sorting was undertaken by the Board of Exams and was speedily and accurately done. In order to avoid some minor confusion it is recommended that sections A conclude with the line "End of Section A". Even though the exam is not comparable with last year, this year's median mark was 137/240 compared with 136 last year, thus showing a pleasing consistency.

A significant fact is that the median on Paper 1 (62) was lower than that on Paper 2 (75) partly because the score on Section A1 (mean 12.3/20) was lower than that on Section A2 (15.3/20) showing that school-acquired skills based on core material had evidently been forgotten. Paper 1 is still 10 marks adrift compared with Paper 2 but the Examiners could find no obvious reason for this. It may be that the relative lack of skills shown in A1 has been reflected to some extent in A2. The least popular of the unstarred questions were on polar coordinates, probability and vectors. These topics are taught in Mathematics 1 which is now being lectured by DAMTP lectures and I look forward to an improvement here.

We should emphasize that students should be very familiar with the skills material and they should have attempted all the questions in the NST maths workbook before coming up. It is not unreasonable to expect the first supervision(s) to concentrate on this material using past papers and specimen questions.

The per candidate scores on sections A1 and A2 are available but seemingly are not automated according to the report and so the exam program should be changed to collect this data automatically.

The Examiner's hope that one examiner be provided by the Computer Laboratory in view of the number of CST students.

2 NST maths 1B

There were no student queries during the examination. The class boundaries were made consistent with agreed NST1B policy giving 60% of candidates a II.1 or better and the II.1/I border was determined by detailed scrutiny of performance. There were no failures.

The question of Fourier transforms (Paper 1, 3A) was surprisingly poorly done and although the performance on linear algebra has slightly improved from last year, the performance on some questions indicates a lack of understanding of basic concepts. Whilst few people attempted the Paper 2 question on representation theory it was well done by those that did. Whilst there was some argument in the discussion over change of syllabus that this topic should be dropped, I think this justifies its inclusion.