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Vice Chancellor c/o Catherine Whalley University Offices Wellington Square Oxford OX1 2JD

Dear Vice Chancellor,

I am writing to give you my report as external examiner for Part A of the Honours School of Mathematics and Honours School of Mathematics and Philosophy in 2015.

I would like to start by thanking the chairman of the examination board, Dr Richard Earl, the other examiners, markers and assessors, and the support team (especially Nia Roderick and Charlotte Turner-Smith) for dealing very efficiently with all my comments and queries.

Overall the Part A Examination was well organized and well conducted. The new examination system is now in its second year and is working well. My report identifies no major issues.

I have not used the supplied template, but all the requested information is contained in my report below. For **Part A**, I am happy to confirm that the answers to questions A1, A2, A3, A4, A5 and A6 are all 'Yes'. The remainder of my report deals with **Part B**.

1. Academic standards

The examiners have rightly set the highest academic standards. I am confident these standards were maintained throughout the examination process.

2. Assessment procedures

Undergraduates sit two core papers, one paper on short optional courses, and five single-subject optional papers. Detailed marking schemes help to ensure that parity of assessment is maintained across a large number of scripts. The marking was careful and all marks were thoroughly checked. I had ample opportunity to comment on papers.

The questions had a good mixture of standard bookwork parts accessible to all candidates and more challenging problem parts that separated out the better candidates. I have suggested below that in some cases there could be slightly more material accessible to candidates at the 2:2/2:1 borderline. Coverage of the syllabi of the Part A courses on pure mathematics was in all cases good and in most cases excellent.

I found a small number of significant mathematical errors while checking the papers. A few minor errors were not noticed either by me or by any of the assessors or examiners: these were corrected during the examinations, and should not have adversely affected candidates.

A provisional scaling of raw marks to USMs (given by the statistical model specified in previous examiners' reports) was provided to me before the Final Examiners' Meeting. It was then modified in the light of candidates' performances on individual papers around the class borderlines. I had ample time to look at individual scripts of borderline candidates and am satisfied that the scaling process was conducted in a fair and rigorous way.

3. Standards of student performances

As one would expect there were many lucid and convincing answers that were clearly of a high first class standard. It is particularly welcome that even the weaker Oxford candidates show knowledge of a wide breadth of material and demonstrate some skills in problem solving. It is commendable that the examination allows candidates of a wide range of abilities to show what they can do.

While numbers are small in Mathematics & Philosophy, it appears that performances were similar across the two schools.

4. Comparison with other HE institutions

The syllabus for Part A is comparable with those offered by other leading UK universities. Overall standards are as high or higher than other such institutions.

5. Issues for further consideration

The A1 core paper seems to have been slightly on the easy side. In particular, Q5(b) was probably too similar to a question on last year's paper. I pointed this out in my comments on the paper, and I am a little surprised that nothing was done. However the effect on the marks was addressed by scaling.

The A2 core paper, the pure mathematics options papers A3, A4, A5, and

the short options paper ASO all created a reasonable spread of marks. I note however that the proposed scaling from 'raw' marks to USMs was very flat between USMs 60 and 70 on A2, A3, A4. This suggests that a little more material accessible to weaker candidates should be examined, so that candidates at the 2:2, 2:1 borderline have a higher raw mark. The topology paper A5 was notable for the especially high standard of candidates' answers; the proposed scaling was also a little closer to linear. Clearly this course is working very well.

I recommended in 2014 that an independent external examiner be appointed to look at the applied mathematics papers. This recommendation was adopted and has bought in some needed expertise. I recommend that the present system of one pure, one applied, and one statistics external examiner be continued.

6. Good practice

There are many examples of good practice. In particular, I note the detailed scrutiny of examination questions, the reports on individual papers made available to the examiners, and the careful consideration given to the scaling maps. For the latter, the outstanding administrative support available during the examiners' meeting was vital. Several markers took the time to indicate the source of lost marks: this was very helpful to me.

I should have noted last year that considerable efforts were made to set specimen examination papers in the change over to the new examination structure in 2014. This is clearly good practice and I am sure helped the change to go smoothly.

Yours sincerely,

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