Examination Conventions 2021–22
Preliminary Examination in Mathematics and Philosophy

1   Introduction

This document sets out the examination conventions for the **Preliminary Examination** in Mathematics and Philosophy. Examination conventions are the formal record of the specific assessment standards for the course or courses to which they apply. This document explains how your work will be marked and how these marks will be used to derive your overall year outcome for Prelims.

The formal procedures for the conduct of University examinations are established by the University's Education Committee. The Proctors have responsibility for the conduct of examinations in accordance with those procedures. The Proctors may be consulted by chairs of examiners, or by senior tutors on behalf of examination candidates in their college, on matters arising in the conduct of exams.

The examination conventions applying to examinations in Mathematics & Philosophy in any given academic year are reviewed in Michaelmas Term of that year by the Joint Committee for Mathematics and Philosophy, and must then be approved by the Mathematical, Physical and Life Sciences Division, and by the Humanities Division, following consideration by the Mathematics Teaching Committee, and by the Philosophy Undergraduate Studies Committee.

The Board of Examiners may only make deviations from these conventions in exceptional circumstances, subject to the direction of Mathematics Teaching Committee, Philosophy Undergraduate Studies Committee, and the Proctors. This document is in all ways subsidiary to the current:

- *Examination Regulations, in particular "Regulations for the Preliminary Examination in Mathematics and Philosophy"*

- *Examinations and Assessment Framework.*

Further information set out for examiners can be found in the appendices of the Preliminary Examination in Mathematics conventions:
`https://www.maths.ox.ac.uk/system/files/attachments/Prelims_7.pdf`

2   Progression through University Examinations

To qualify for your BA or MMathPhil in Mathematics and Philosophy you must pass a First and Second Public Examination. The First Public Examination in Mathematics and Philosophy is currently called the Preliminary Examination and is taken at the end of the first year. There is also a resit Preliminary Examination in Mathematics and Philosophy (Resits), which may be taken by candidates who fail to satisfy the Preliminary examiners (known as moderators). Candidates who are prevented from sitting the first Preliminary Examination by illness or other exceptional circumstances may seek permission from the Proctors instead to sit the Preliminary Examination in Mathematics and Philosophy (Resits). You must pass the Preliminary Examination before you

can be admitted to the Second Public Examination, unless you already have a degree from another university and have been granted Senior Status.

The Second Public Examination has three parts: Part A taken at the end of the second year, Part B taken at the end of the third year and Part C taken at the end of the fourth year. You cannot enter for Part B until you have completed Part A of the examination, and in order to proceed to Part C, a candidate must be awarded an Upper Second Class or higher in the combined classification of Parts A and B. Candidates who satisfy the examiners in Part A and Part B only, qualify for the award of BA in Mathematics and Philosophy; candidates who satisfy the examiners for all three parts qualify for the award of MMathPhil in Mathematics and Philosophy, with the associated classifications.

3   Prelims Examination Papers

All Mathematics and Philosophy candidates take five examination papers, as follows:

1. Mathematics I

2. Mathematics II

3. Mathematics III(P)

4. Elements of Deductive Logic

5. Introduction to Philosophy

Mathematics I is 2.5 hours in duration. The paper is divided into two sections. There are four questions on Section A of which candidates should submit three answers. There are three questions on Section B of which candidates should submit two answers. Therefore candidates should submit 5 answers in total.

Mathematics II is 2.5 hours in duration. The paper is divided into three sections. There are three questions in each of Section A and Section B and one question in Section C. Candidates should submit two answers from both Sections A and B. They should also submit an answer for the question in Section C. Therefore candidates should submit 5 answers in total.

Mathematics III(P) is 2 hours in duration and the paper is divided into two sections. There are three questions on each section and candidates should submit two answers from each section. Therefore candidates should submit 4 answers in total.

Each question on the mathematics papers will be marked out of 20 and should be divided into two to four parts. An indication of the raw marks available for each part of each question should be given on the question paper.

The examination syllabus for each Mathematics paper can be found at

`https://courses.maths.ox.ac.uk/course/index.php?categoryid=2`.

Elements of Deductive Logic & Introduction to Philosophy are 3 hours in duration. Candidates are required to answer four questions on each paper.

Further details and the examination syllabus for each Philosophy paper can be found in the Examination Regulations for the 'Preliminary Examination in Mathematics and Philosophy' at

`https://examregs.admin.ox.ac.uk/`

4   Examination Conduct

You will receive advice from the moderators before your examinations. These notices provide information on the conduct of the examinations including the use of calculators, when to arrive and

what to take with you and how to complete and submit answer booklets.

Notices from moderators from previous years can be found on the Mathematical Institute's website at `https://www.maths.ox.ac.uk/members/students/undergraduate-courses/examinations-assessments/examination-conventions`, past notices will be superseded by this year's notices.

5 Penalties for Non-attendance

Rules governing non-attendance at examinations and any consequent penalties are set out in full in the Examination Regulations (Regulations for the Conduct of University Examinations, Part 14). If you will be prevented by ilness or other urgent cause from attending one of your examinations you should contact your college office or college tutor as soon as possible. In cases where the Proctors do not believe there are satisfactory reasons for non-attendance or an application to the Proctors has not been submitted, this will result in the technical failure of that exam paper. The examiners will award a mark of 0 for that paper.

Failure to attend an examination, without an accepted reason, will result in failure of the assessment. The mark for any resit of the assessment will be capped at a pass.

6 Marking conventions

Examination scripts and essays are marked by examiners and assessors. Their marks result ultimately in a University Standardised Mark (USM), in the range from 0 to 100, for each script and submitted piece of work, which are then used in the process of classifying candidates. USMs in the classification process are always whole numbers.

Plagiarism

You are reminded of the importance of avoiding any plagiarism, please see `http://www.ox.ac.uk/students/academic/guidance/skills/plagiarism` for further guidance. Depending on their severity, cases of suspected plagiarism may be referred to the Proctors for investigation or may be dealt with by the board of examiners. If dealt with by the board of examiners as a case of poor academic practice, the examiners may deduct marks (for lack of adequate referencing, poor use of citation conventions etc.) of up to 10% of the marks available for the assessment. Where the consequence of the marks deduction would result in both the failure of the assessment and of the programme the case must be referred to the Proctors.

The scale of USMs

The correspondence between the USM ranges and classes in a *classified examination* is according to the following rules:

- 70-100: First Class
- 60-69: Upper Second Class
- 50-59: Lower Second Class
- 40-49: Third Class
- 0-39: Fail

The processes by which they are arrived at are as follows:

6.1 How USMs are determined in Mathematics

Analysis of Marks

In Mathematics the moderators may scale the raw marks when translating them into USMs. The scaling algorithm used by the mathematics examiners is explained in detail in the 2021 moderators' report which can be found at `http://www.maths.ox.ac.uk/members/students/undergraduate-courses/examinations-assessments/examiners-reports`.

The moderators may choose to scale marks where in their academic judgement:

- a paper was more difficult or easier than in previous years, and/or

- an optional paper was more or less difficult than other optional papers taken by students in a particular year, and/or

- a paper has generated a spread of marks which are not a fair reflection of student performance on the University's standard scale for the expression of agreed final marks, i.e. the marks do not reflect the qualitative marks descriptors.

Such scaling is used to ensure that all papers are fairly and equally rewarded. Scaling may be also used to mitigate against the difficulties with setting an alternative format of assessment required in response to the COVID-19 pandemic and any related difficulties faced by candidates.

When scaling the raw marks on a paper the moderators will consider the following:

- the total sum of the marks for all questions on the paper, subject to the rules above on numbers of questions answered;

- the relative difficulty of the paper compared to the other Prelims papers;

- the report submitted by the moderator/assessor who set and marked the paper.

Moderators will use their academic judgement to ensure that appropriate USMs are awarded and may use further statistics to check that the marks assigned fairly reflect the students' performances on a paper. Moderators will also review a sample of papers either side of the classification borderlines to ensure that the outcome of scaling is consistent with the qualitative marks descriptors.

Marking of Mathematics Examinations

All mathematics examinations are marked by a single assessor or moderator according to a pre-agreed mark scheme which is strictly adhered to. The examination scripts are then checked by an independent checker to ensure that all work has been marked, and that the marks have been correctly totalled and recorded. Please see the qualitative descriptors of the bands of marks awarded to examination answers.

Further information on the setting and marking of mathematics papers is given in the appendices to the Examination Conventions in Mathematics available online `https://www.maths.ox.ac.uk/members/students/undergraduate-courses/examinations-assessments/examination-conventions`

Marking schemes and Model Solutions

Those setting questions are asked to provide complete model solutions, annotated so as to indicate what is considered bookwork and standard material, what has been seen before on problem sheets and what is considered to be new and unseen, and with a draft marking scheme for the approval of

the moderators; the solution, with additional comments, should also make clear how much of the question is accessible to less strong candidates.

Marking schemes for the questions should aim to ensure that the following qualitative criteria hold:

16–20 marks A completely, or almost completely, correct answer, showing excellent understanding of the concepts and skill in carrying through the arguments and/or calculations; minor slips or omissions only.

11–15 marks A good though not complete answer, showing understanding of the concepts and competence in handling the arguments and/or calculations, and some evidence of problem-solving ability. Such an answer might consist of an excellent answer to a substantial part of the question, or a good answer to the whole question which nevertheless shows some flaws in calculation or in understanding or in both.

6–10 marks Standard material has been substantially and correctly answered with some possible minor progress on to other parts of the question.

0–5 marks Some progress has been made with elementary, accessible material.

Qualitative description of examination performance in Mathematics

Whilst the Preliminary Examination is not classified, the average USM ranges reflect the following general **Qualitative Class Descriptors** agreed by the Teaching Committee:

First Class: the candidate shows excellent skills in reasoning, deductive logic and problem-solving. They demonstrate an excellent knowledge of the material, and can use that in unfamiliar contexts.

Upper Second Class: the candidate shows good or very good skills in reasoning, deductive logic and problem-solving. They demonstrate a good or very good knowledge of much of the material.

Lower Second Class: the candidate shows adequate basic skills in reasoning, deductive logic and problem-solving. They demonstrate a sound knowledge of much of the material.

Third Class: the candidate shows reasonable understanding of at least part of the basic material and some skills in reasoning, deductive logic and problem-solving.

Fail: little evidence of competence in many of the topics examined; the work is likely to show major misunderstanding and confusion, coupled with inaccurate calculations; the answers to questions attempted are likely to be fragmentary only.

6.2   How USMs are determined in Philosophy

Marking of Preliminary Examinations in Philosophy

All Philosophy scripts at Prelims are marked by a single marker, in line with the University's standard practice for the First Public Examination. In the event of a candidate being on the borderline for distinction or failure in the examination, the examiners will collectively arrange for a second reading where necessary, and in all cases for borderline fails.

Qualitative description of examination performance in the First Public Examination in Philosophy

- Distinction 100-70:

    100-80
    > + Answer displaying rigorous and independent thinking, a keen critical understanding of relevant material, transparent organisation and presentation, clear and precise expression, effective use of examples.

    79-70
    > + Answer demonstrating critical understanding of relevant material, transparent organisation and presentation, clear and precise expression, effective use of examples.

- Pass 69-40:

    69 -65
    > + Generally effective analysis and argumentation, demonstrating a good grasp of relevant material; transparent organisation and presentation of material; general clarity of expression.
    > - Some infelicity in argumentation; analysis slightly lacking in depth or focus; or minor shortcomings in choice, organisation or presentation of material.

    64-60
    > + Well-structured and generally satisfactory discussion, offering a mostly correct analysis of the central arguments and themes.
    > - Some lapses in argumentation; somewhat pedestrian, unclear or imprecise writing; or deficiencies in choice or organisation of material.

    59-50
    > + A structured answer offering analysis of some key aspects of the question; evidence of a good basic knowledge of relevant material.
    > - Incomplete answer to the question; significant lapses in argumentation or structure; poor presentation; significant gaps in knowledge of relevant material; and/or minor irrelevance.

    49-40
    > + Some evidence of knowledge of material relevant to question and of analytical or argumentative ability.
    > - Very limited answer; muddled argumentation; significant degree of irrelevance; and/or seriously flawed presentation.

- Fail: 39-0

    Generally, very poor quality work, showing little, if any, evidence of effective study or of analytical or argumentative skills; mostly, or wholly, irrelevant answer.

    39-30
    > + Some attempt to answer question; occasionally relevant material.
    > - Extremely limited and inadequate answer, for instance in note form; discussion largely (but not entirely) irrelevant.

    29-0
    > Completely or almost completely irrelevant or ignorant answer; nothing or almost nothing written.

NB! Candidates should note that one of the commonest reasons for answers receiving poor marks is irrelevance. It is very important to direct your answer at the question which has actually been asked.

Short weight

If a candidate answers fewer than the required number of questions, the overall mark will be

$(n/N)A$

where A is the mean average of the marks assigned to attempted questions, n is the number of questions attempted, and N is the number of questions required.

Rubric failure

If a candidate fails to obey a rubric expressing a condition stipulated in the Examination Regulations, the examiners may reduce the overall mark. In cases where the maximum number of questions that may be attempted in a given section, or on a given author, is N, and the candidate answers more than N questions in that section, or on that author, only the highest-scoring N answers attempted in that section, or on that author, will contribute to the overall mark.

7   How outcomes in Prelims are determined

After marks for each examination script have been determined (in accordance with section 6 above), outcomes in Prelims are determined from each candidate's weighted overall average mark, average mark in Mathematics and average mark in Philosophy, according to conventions (see below) for each examination.

7.1   Decimal points and rounding of averaged marks in the determination of outcomes in Prelims

Averages of marks are calculated to two decimal points, which the examiners need in order to recognize candidates very close to a class borderline, in which case their marks profile needs to be given particular attention, and also for ranking candidates when awarding prizes. However, at the stage of applying the classification rules to determine a candidate's outcome from their average marks, the averages are then symmetrically rounded to a whole number, so that e.g. 69.50 is rounded to 70 (which, if this is as an overall average, gives that candidate a Distinction), and 69.49 is rounded to 69 (in which case the candidate receives a Pass, subject to the determination of outcomes below, but only in that case after the examiners have carefully gone over the candidate's marks, being so close to a borderline).

7.2   Determination of outcomes in the Preliminary Examination

Marks for each individual examination paper will be reported as University Standardised Marks (USMs). The object of the USMs is to allow direct comparison between the results of examinations in different subjects. Raw marks are turned into USMs by recalibration, sometimes necessary to ensure that all papers are fairly and equally rewarded. The correspondence between the USM ranges and classes is as previously stated in section 6. These marks reflect the qualitative descriptors given in the previous section.

The Preliminary Examination is an unclassified examination in which candidates are awarded a Distinction, Pass, or Fail. **Candidates shall be deemed to have passed the examination if they have satisfied the Moderators in all five papers.**

Candidate outcomes in Mathematics and Philosophy Prelims are determined by the following conventions:

Denote by

- M the weighted average of the Mathematics USMs

$$M = \frac{5}{14}MI + \frac{5}{14}MII + \frac{4}{14}MIII(P)$$

- P the average of the two Philosophy USMs and

- A the average of M and P.

When M, P, and A have been symmetrically rounded to the nearest integer, as stipulated in section 7.1, year outcomes will be awarded according to the following conventions:

Distinction: Both $A \geqslant 67$ and either $M \geqslant 70$ and $P \geqslant 60$, or $P \geqslant 70$ and $M \geqslant 60$, and a mark of at least 40 on each paper.

Pass: A candidate not meriting a distinction but with a mark of at least 40 on each paper.

Fail: A candidate achieving a USM of less than 40 on three of more papers, unless the three papers are papers I, II, III(P).

Partial Pass: A partial pass is awarded to candidates who obtain a standardised mark of less than 40 on one or two papers, or each of papers I, II, III(P) and no other paper. Such candidates will be required to resit the failed paper(s) before being awarded their final year outcome (see section 9 below).

8 Alternative Examination Arrangements and Mitigating Circumstances Notices to Examiners

A candidate in any University Examination with specific learning difficulties or disability/illness may apply through the Senior Tutor of their college for alternative examination arrangements relating to their condition. Please see `http://www.ox.ac.uk/students/academic/exams/arrangements` for further information on the process.

Candidates who would like the examiners to be aware of any mitigating circumstances that may have affected their performance before or during an examination are advised to discuss their circumstances with their college and consult the Examination Regulations (Part 13). The candidate's college will submit the Mitigating Circumstances Notice to Examiners for forwarding to the relevant chair of examiners.

Where a candidate or candidates have made a submission, under Part 13 of the Examination Regulations, that unforeseen circumstances may have had an impact on their performance in an examination, a subset of the board will meet to discuss the individual applications and band the seriousness of each application on a scale of 1–3 with 1 indicating minor impact, 2 indicating moderate impact, and 3 indicating very serious impact. When reaching this decision, examiners will take into consideration the severity and relevance of the circumstances, and the strength of the evidence. Examiners will also note whether all or a subset of papers were affected, being aware that it is possible for circumstances to have different levels of impact on different papers. The banding information will be used at the final board of examiners to adjudicate on the merits of candidates. Further information on the procedure is provided in the *Examinations and Assessment Framework* and information for students is provided at `www.ox.ac.uk/students/academic/exams/guidance`.

9 Preliminary Examination (Resits)

The 'Preliminary Examination', held at the end of the long vacation, is intended for candidates who clearly need to do more work before proceeding to the second year, as well as candidates who, for some good reason, are unable to sit the Preliminary Examinations in Trinity Term.

A candidate who failed to satisfy the moderators in one or two of the five papers at their first attempt may offer those papers on one subsequent occasion. A candidate who failed to satisfy the moderators in three or more papers at their first attempt may resit all five papers on one subsequent occasion, *with the exception that* a candidate who failed to satisfy the Moderators in each of papers I, II, III(P) and no other paper, may offer those papers on one subsequent occasion. The Preliminary Examination (Resits) held at the end of the long vacation will be of the same format as the Preliminary Examination in Trinity Term (see section 3).

Where a candidate has failed an assessment unit as a result of poor academic performance the mark for the resit of the assessment unit will be awarded on the merits of the work.

Where a candidate has failed an assessment unit as a result of non-submission of an assessment item or as a result of non-attendance at a timed examination the mark for the resit of the assessment unit will be capped at a pass (USM of 40).

Candidates who have failed an assessment unit will not be eligible to be considered for a distinction.

10   Moderators for 2021–22

The moderators are:
Prof. Tom Sanders (Chair)
Prof. Dan Ciubotaru
Prof. Andrew Dancer
Prof. Cath Wilkins

Prof. James Read Prof. Bernhard Salow

It must be stressed that to preserve the independence of the moderators, you should not make contact directly with them about matters relating to the content or marking of papers. Any communication must be via the Senior Tutor of your college, who will, if they deem the matter of importance, contact the Proctors. The Proctors in turn communicate with the Chair of Moderators.