Mathematics and Statistics Parts A, B and C: Examination Conventions 2014–15

Department of Statistics
Academic Committee
Michaelmas Term 2014

1 Introduction

This document establishes the examining conventions for Parts A, B and C of the Honour School of Mathematics and Statistics. Although the main part of this document is written explicitly for candidates, it provides, in one place, information for candidates, assessors and examiners. The appendices contain additional information, primarily for examiners.

Nothing in this document supersedes the University’s regulations and policy set out in the current Examination Regulations and the Policy and Guidance for Examiners and others involved in University Examinations.

The Academic Committee of the Department of Statistics directs that examinations for which it is responsible are conducted in accordance with these conventions. The Board of Examiners may make minor deviations from these conventions in exceptional circumstances, ideally after reference to the Academic Committee or the Proctors.

2 Information from the Course Handbook

Mathematics and Statistics students take the Preliminary Examination in Mathematics at the end of their first year. Full details of this examination are in the Handbook for the Undergraduate Mathematics Courses and Examination Conventions published by the Mathematical Institute.

Sections 2.1–2.6 below are taken unchanged from the Mathematics and Statistics Undergraduate Handbook.

2.1 Examinations

It is by passing the University’s ‘public’ examinations that you qualify for your degree.

The first public examination is called the Preliminary Examination (or ‘Prelims’). You have to pass Prelims at the end of the first year, or via a re-sit in September, to enter the second year of the course.

The second public examination is the Final Honour School (or ‘Finals’). In contrast to Prelims, there is a separate Final Honour School for Mathematics and Statistics students (i.e. it is different to that for single subject Mathematics). If you take the three year BA course, you will take Part A of the examination at the end of your second year and Part B at the end of your third year. If you take the MMath course, the second and third year will be the same as the BA, and you will also take Part C at the end of your fourth year.

In order to proceed to Part C, you must have achieved at least Upper Second Class Honours standard in Parts A and B together, that is, in the classification at the end of Part B described in Section 2.6.
2.2 Prelims

Prelims is not a classified examination. The pass mark will be 40. The Examiners may also award distinctions.

2.3 Classification: Parts A, B and C

The possible classes are: First (I), Upper Second (IIi), Lower Second (IIii), Third (III), Pass, Fail.

Following the Part B examination you will be awarded a classification based on your performance in Parts A and B together. So if you take the three year course, your classification for the BA is the one that you are awarded after Part B.

If you continue to Part C, following the Part C examination you will be awarded a second classification based on your performance in Part C only. So if you take the four year course, you have two classifications for the MMath: one classification for your performance in Parts A and B together, and a second classification for your performance in Part C.

A Pass will not be awarded in Part C. If you do not achieve at least Third Class in Part C, then you are not eligible for an MMath but instead you should be eligible for a BA with the appropriate class as determined by your performance on Parts A and B.

Note that your Prelims performance does not contribute to your classification after Parts A and B, or Part C.

2.3.1 Qualitative descriptors

The qualitative descriptions of the classes are as follows:

Class I The candidate shows excellent skills in reasoning, deductive logic and problem-solving. He/she demonstrates an excellent knowledge of the material, and is able to use that in unfamiliar contexts.

Class IIi The candidate shows good or very-good skills in reasoning, deductive logic and problem-solving. He/she demonstrates a good or very good knowledge of much of the material.

Class IIii The candidate shows adequate basic skills in reasoning, deductive logic and problem-solving. He/she demonstrates a sound knowledge of much of the material.

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

Pass The candidate shows some limited grasp of at least part of the basic material.

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

[Note that the aggregation rules in some circumstances allow a stronger performance on some papers to compensate for a weaker performance on others.]

2.3.2 Standardised marks

For each examination paper you take, and each mini-project/dissertation, your performance will be reported in the form of a university standardised mark in the range 0–100. The object of the USMs is to allow direct comparison between the results of examinations in different subjects.
Raw marks may be turned into USMs by scaling, sometimes necessary to ensure that all papers are fairly and equally rewarded. The correspondence between the standardised mark ranges and classes is as follows:

- 70–100: First Class
- 60–69: Upper Second Class
- 50–59: Lower Second Class
- 40–49: Third Class
- 30–39: Pass
- 0–29: Fail.

In order to arrive at such standardised marks for each paper, the examiners will mark and assess papers in the way described in Section 3. (Marks for formally assessed course work will be similarly standardised.)

2.4 Double marking

For the mathematics and statistics examination papers that you take, there is a precise model solution and marking scheme approved by the examiners for every question. Your answers will be marked by an examiner or assessor. Your answers will also be checked independently (not necessarily by an examiner or assessor) to ensure that all parts have been marked and the marks and part-marks have been correctly totalled and recorded.

Dissertations are not covered by the above paragraph: these will be marked independently by two examiners or assessors. If a mini-project has a precise model solution, it will be marked by an examiner or assessor and also checked independently (as for examination papers); otherwise it will be marked independently by two examiners or assessors.

2.5 Classification after Part B

Your classification after Part B is based on your Part A results and your Part B results. Each candidate must offer

- 10 units at Part A (counting A1 and A2 as double-units)
- 8 units (or the equivalent) at Part B

and the relative weights of the Parts is as follows:

- the weight of Part A is 40%
- the weight of Part B is 60%.

Your weighted average university standardised mark, $AvUSM$, is computed using these weights and your standardised marks on each unit.
2.5.1 Classification conventions

The classification after Part B is not determined solely by your $AvUSM$: there is also a Strong Paper rule as follows. To satisfy the $n$th class strong paper rule:

- you need at least 6 units (or the equivalent) to have a mark of the $n$th class standard or above,
- and you also need at least 2 of these units (or the equivalent) to be in Part B.

For example, to satisfy the First class strong paper rule you need at least 6 units (or the equivalent) with marks of 70 or above, with at least 2 of these units (or the equivalent) being in Part B.

Classifications are determined as follows:

- First Class: $AvUSM \geq 70$ and the first class strong paper rule is satisfied.
- Upper Second Class: EITHER $AvUSM \geq 70$ and the first class strong paper rule is not satisfied
  OR $60 \leq AvUSM < 70$ and the upper second strong paper rule is satisfied.
- Lower Second Class: EITHER $60 \leq AvUSM < 70$ and the upper second strong paper rule is not satisfied
  OR $50 \leq AvUSM < 60$ and the lower second strong paper rule is satisfied.
- Third Class: EITHER $40 \leq AvUSM < 50$
  OR $50 \leq AvUSM < 60$ and the lower second strong paper rule is not satisfied.
- Pass: $30 \leq AvUSM < 40$.
- Fail: $AvUSM < 30$.

2.6 Part C classification

Your Part C classification is based on Part C alone.

2.6.1 Weight given to each paper

The dissertation has a weight of 3 and each unit has a weight of 1. If $C_D$ is your dissertation standardised mark and $C_1, \ldots, C_5$ are your standardised marks on your five further units (all of $C_D, C_1, \ldots, C_5$ being in the range 0–100), then your average university standardised mark in Part C is

$$AvUSMC = \frac{3C_D + C_1 + C_2 + C_3 + C_4 + C_5}{8}.$$

2.6.2 Classification conventions

Classifications are determined as follows:

- First Class: $AvUSMC \geq 70$.
- Upper Second Class: $60 \leq AvUSMC < 70$.
- Lower Second Class: $50 \leq AvUSMC < 60$.
- Third Class: $40 \leq AvUSMC < 50$. 

A Pass will not be awarded in Part C. If you achieve $AvUSMC < 40$ then you are not eligible for an MMath but instead you should be eligible for a BA with the appropriate class as determined by your performance on Parts A and B.

3 Further details

3.1 Structure of papers and marking criteria

A mark of zero will be awarded for any part or parts of questions that have not been answered.

3.1.1 Part A

In Part A, all candidates take 8 examination papers. These 8 papers are made up of 5 compulsory papers:

- A1 Algebra 1 and Differential Equations 1 (3 hours)
- A2 Metric Spaces and Complex Analysis (3 hours)
- A8 Probability (1.5 hours)
- A9 Statistics (1.5 hours)
- ASO Short Options (1.5 hours)

and 3 further papers (each 1.5 hours long) chosen from the Long Options: A3 Algebra 2, A4 Integration, A5 Topology, A6 Differential Equations 2, A7 Numerical Analysis, A10 Waves and Fluids, A11 Quantum Theory, A12 Simulation and Statistical Programming.

Paper A1 comprises two sections containing 3 questions on Algebra 1 and 3 questions on Differential Equations 1. The best two questions from each section count towards a candidate’s total mark for the paper.

Paper A2 contains 6 questions. The best 4 questions count towards a candidate’s total mark to the paper.

Papers A3–A12 each contain 3 questions, with the best two questions counting towards a candidate’s total mark for the paper.

Paper ASO contains a single question on each of the Short Options: Number Theory, Algebra 3, Projective Geometry, Introduction to Manifolds, Integral Transforms, Calculus of Variations, Graph Theory, Special Relativity. The best two questions count towards a candidate’s total mark for the paper.

In all papers, each question is worth 25 marks and candidates may submit answers to as many questions as they wish. An indication of the raw marks available for each part of each question should be given on the question paper. Marking schemes for the questions will aim to ensure that the following qualitative criteria hold:

20–25 marks: A completely, or almost completely, correct answer, showing excellent understanding of the concepts and skill in carrying through arguments and/or calculations; minor slips or omissions only.

13–19 marks: A good though not complete answer, showing understanding of the concepts and competence in handling the arguments and/or calculations. 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.
7–12 marks: Standard material has been substantially and correctly answered with some possible minor progress on to other parts of the question.

0–6 marks: Some progress has been made with elementary, accessible material.

3.1.2 Part B

Each paper that examines one unit will last 1\(\frac{1}{2}\) hours and consist of 3 questions. You may hand in as many answers as you wish and your best 2 answers will count for your total mark. Questions will be marked out of 25. Marking schemes will aim to ensure that the qualitative criteria given in Section 3.1.1 hold.

BS1 (a double-unit) will be examined via a 2-hour paper plus assessed practical assignments. The paper will consist of 3 questions on BS1a and 2 questions on BS1b. You may hand in as many answers as you wish. Your best 2 answers from BS1a and your best answer from BS1b will count for your total mark. Each question will be marked out of 22 and the assessed practical component will be marked out of 34.

An indication of the raw marks available for each part of each question should be given on the question paper.

3.1.3 Part C

Each paper will last 1\(\frac{1}{2}\) hours and consist of 3 questions. You may hand in as many answers as you wish and your best 2 answers will count for your total mark. Questions will be marked out of 25. Marking schemes will aim to ensure that qualitative criteria given in Section 3.1.1 hold.

An indication of the raw marks available for each part of each question should be given on the question paper.

Mini-projects

Some courses may be examined by mini-project. This will normally be prescribed in the Course Handbook (including the Syllabus and Synopses). Where a topic is assessed by a mini-project, the mini-project should be designed to take a typical student about three days. You are not permitted to withdraw from being examined on a topic once you have submitted your mini-project to the Examination Schools.

Mini-projects should not exceed 7,000 words in length. However, 4,000 words would be a typical length and would be perfectly acceptable.

3.1.4 Part C dissertations

The length of a dissertation should not exceed the equivalent of 10,000 words (excluding diagrams, tables, references and computer code). Unnecessarily lengthy dissertations may be penalised.

Dissertations will be marked according to the same principles as examination papers. Marks will be awarded in the following proportions:

- Mathematics/Statistics or Data analysis/simulation 50%
- Content 25%
- Presentation 25%.

Mathematics/Statistics: Proofs and assertions should all be correct, written in your own words, and illustrated using your own worked examples. In applied topics, the derivation of the model should be properly justified.
Data analysis/simulation: The data analysis has to be correctly and suitably done, including the choice of model. Similar comments apply to simulation.

Content: You must do more than rehash text books and lecture notes. You should use multiple original sources, and present the material in your own words with your own critical overview. The Examiners are looking for your thoughts and contributions.

Presentation: The mathematics must be clear and well laid out; formulae must be clearly presented, tables and graphs properly referenced in the text; an abstract and a bibliography must be provided; the English should be clear and grammatically correct. Give some thought to notation, choice of typeface, and numbering of equations and sections. Do not fail to number the pages. Finally, be sure to supply complete and accurate references for all the sources used in completing the project, and be sure to cite them properly in the text.

[The Course Handbook, and especially the supplement *Part C Dissertations in Statistics: Guidance Notes*, gives detailed advice on correct referencing, and the seriousness of plagiarism.]

Programming and code

Where projects contain a substantial amount of programming, candidates are encouraged to include key elements of their commented code in an appendix to the dissertation. This appendix will not contribute towards the word-count.

3.2 Reconciliation procedures when work is double-marked

Each dissertation will be marked independently by two examiners or assessors (neither of who will be the dissertation supervisor). When the two marks for a dissertation are less than 10 USMs apart, the two marks will be averaged. In the other cases, there will be a discussion between the two examiners or assessors concerned, after which it will normally be possible for a mark to be agreed. In any exceptional cases a third examiner or assessor will normally read the dissertation before the Examiners agree a mark. The same reconciliation procedure will be used when mini-projects are double-marked.

3.3 Penalties for late submission

Late submission of Part C dissertations (or mini-projects) will normally result in the following penalties.

- Where permission for late submission has been granted by the Proctors, no penalty will be imposed.
- Where permission for late submission has not been granted by the Proctors, the normal penalties based on a submission deadline of Monday 12 noon are as follows:

<table>
<thead>
<tr>
<th>Lateness</th>
<th>Cumulative mark penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4 hours, i.e. up to Monday 4pm</td>
<td>1</td>
</tr>
<tr>
<td>4–24 hours, i.e. up to Tues 12 noon</td>
<td>10</td>
</tr>
<tr>
<td>24–48 hours, i.e. up to Weds 12 noon</td>
<td>20</td>
</tr>
<tr>
<td>48–72 hours, i.e. up to Thurs 12 noon</td>
<td>30</td>
</tr>
<tr>
<td>72–96 hours, i.e. up to Fri 12 noon</td>
<td>40</td>
</tr>
<tr>
<td>96–101 hours, i.e. up to Fri 5pm</td>
<td>50</td>
</tr>
</tbody>
</table>

The final mark cannot be negative, it is truncated at zero if necessary.
The cumulative penalty above would be deducted from the dissertation mark, when the dissertation mark is expressed out of 100. For example, if a student submits a dissertation 20 hours late, and that dissertation in itself is worth 65 marks, then the penalty above means that s/he loses 10 marks and so the final mark is 55.

- Where permission for late submission has not been granted by the Proctors and the dissertation is over 101 hours late, the Examiners would refer the case to the Proctors for guidance as to what penalty to impose.

### 3.4 Analysis of marks

As in Section 2.3.2, for each examination paper you take, your performance on the paper will be reported in the form of a University Standardised Mark (USM) in the range 0–100.

The Examiners may scale the raw marks to arrive at the USMs reported to candidates. The scaling algorithm used by the examiners is explained in detail in the 2014 examiners’ reports which can be found at [http://www.stats.ox.ac.uk/current_students/bammath/examinations/examiners_reports](http://www.stats.ox.ac.uk/current_students/bammath/examinations/examiners_reports). When considering whether to scale the raw marks on a paper the examiners will take into account candidates’ total raw marks on each paper (subject to the rubric of each paper). The examiners will also consider the relative difficulty of the paper compared to the other papers in that Part of the examination, and the report submitted by the assessor who set and marked the paper. In Parts B and C the examiners will consider information on candidates’ performances on the earlier Part(s) of the examination.

Examiners 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.

### 3.5 Examiners

The Statistics examiners 2014–15 are as follows:

- **Part A:**
  - Dr Neil Laws
  - Dr Matthias Winkel
  - Prof John Aston (external examiner, University of Cambridge)

- **Part B:**
  - Dr Neil Laws
  - Prof Geoff Nicholls
  - Prof Julian Faraway (external examiner, University of Bath)

- **Part C:**
  - Prof Colin McDiarmid
  - Prof David Steinsaltz
  - Prof Sujit Sahu (external examiner, University of Southampton).

It must be stressed that to preserve the independence of the examiners, 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 s/he deems the matter of importance, contact the Proctors. The Proctors in turn communicate with the Chairman of Examiners.
A Additional information for examiners

A.1 Documentation

The MPLS Division has agreed a list of documents that, as standard, should be sent to external examiners on their appointment. Chairmen of Examiners should ensure that these documents are sent to external examiners by the departmental administration. Chairmen of Examiners will need to help with the second item on the list. The Internal Examiners should also ensure that they have access to these documents. The list is:

- The Statement on the Role of External Examiners in the MPLS Division.
- An outline timetable of the examination board, indicating when the External Examiners would receive draft papers, etc.
- The examination regulations for the exam concerned.
- The examination conventions for the examination in question, and associated conventions for previous or subsequent examinations.
- The Policy and Guidance for Examiners and others involved in University Examinations.
- The Course Handbook, including the syllabus for each lecture course.
- The examination papers from the preceding two years.
- The Examiners’ reports on these examinations (internal and external).
- The responses made to those examination reports, from the departmental academic committee and in particular the letters from the Division to the external examiners.
- The published tables of class percentage figures for the last two years (as published in the Examiners’ reports).

A.2 Setting the papers

Questions on each subject within a paper will normally be set and marked by the course lecturer, who should be appointed as an Assessor.

Protocol

The following protocol should be followed for the setting of each paper.

1. Questions on each subject within the paper will be set by the Assessor.
2. These will then be checked by an examiner, or another suitably competent member of academic staff.
3. The final draft of the paper will be reviewed and approved by the whole examining board.

A checklist that may be given to assessors is attached as Annexe B.

The External Examiner should be consulted according to the agreed timetable and provided with draft papers, annotated solutions and marking schemes. The Examiners should not finalise any paper without taking into account the comments of the External Examiner. The External Examiner’s advice should either be followed in whole or in part, or explicitly rejected, and in all cases the External should be informed in writing what has been done in response to his/her advice.
Model solutions and marking schemes

Assessors must be asked to provide complete model solutions, annotated so as to indicate what is considered bookwork, what has been seen before on problem sheets, and what is considered to be new and unseen, together with a draft marking scheme for the approval of the Examiners. Each solution, with additional comments, should also make clear how much of the question is accessible to less strong candidates.

The marking schemes should be approved by the Examiners alongside the papers. Examiners should check that questions are of a consistent difficulty within each paper and between papers, bearing in mind the standard criteria in 2.3.1 and 2.3.2.

Signing off the papers

The versions of the questions on the finalised versions of the papers should be signed off as being suitable by the Chairman of Examiners, in consultation with assessors as appropriate, before the final papers are delivered to the Examination Schools.

A.3 Marking and checking scripts

Marking

The Marker for each subject will normally be the Assessor appointed to set that subject. Otherwise the marker should be an examiner or assessor. The Examiners should provide each marker with the approved marking scheme for the paper. Markers should be instructed to follow the approved marking scheme consistently, and to carry out procedures for avoiding errors in transcription of the marks. A suitable checklist is attached as Annexe C.

Where a topic is assessed by mini-project, the anonymised assignments are marked by the course lecturer and moderated by the Examiners. Moderation is intended to ensure consistency and fairness across courses, and the Examiners may adjust marks, or take any other necessary steps, to achieve this goal.

The Chairman must ensure that those appointed as assessors are informed of the Examiners’ timetables, and are made aware that they must be available for consultation by the Examiners until the signing of the Class/Pass Lists, and in particular during the input and checking of the marks.

Checking

The Examiners should ensure that their procedures allow for:

- an independent arithmetic check of the correctness of the addition of the partial marks for each question
- an independent check of the marks entered into the database for each candidate
- an audit trail for these checks.

In recent years graduate students have been employed to carry out such checks, overseen by the Examiners.

A.4 Recalibration of marks

Examination marks will be reported to candidates in the form of University Standardised Marks. The object of the USM is to allow direct comparison between the results of examination in different subjects. Examiners may recalibrate raw marks to arrive at the USMs reported to
candidates. On each paper, any recalibration of marks should be done without disturbing the order of candidates. In order to ensure fair treatment examiners are reminded that they may exercise individual consideration in assigning USMs for candidates whose marks lie outside the standard pattern.

The USMs reported to candidates for each paper should be symmetrically rounded.

Examiners are reminded that recalibration of marks should never be a solely mechanistic process. Academic judgement is central, and qualitative checks, particularly at classification borderlines, should always be carried out to ensure that, in the judgement of the examiners, appropriate classifications are awarded.

A quantitative description of the procedure, for each paper, for translating raw marks into USMs should be included in the Examiners’ Report.

A.5 Medical certificates

The University’s policy on the use of medical certificates is available at [http://www.admin.ox.ac.uk/edc/policiesandguidance/pgexaminers/annexeb/](http://www.admin.ox.ac.uk/edc/policiesandguidance/pgexaminers/annexeb/).

Proctorial guidance is that medical certificates should be kept if students are taking an examination with different Parts in different years, in case the final Board of Examiners wants to refer to them at classification stage.

For Mathematics and Statistics, this guidance is relevant to Part A and Part B examiners.

If Part A examiners are presented with medical evidence affecting one paper then they may take it into account and modify the USM for that paper accordingly.

If Part A examiners are presented with medical evidence affecting more than one paper and feel unable to modify USMs accordingly they should pass this information, along with the medical evidence, to the Board of Examiners in Part B the following year. The Part B examiners may then take this evidence into account before making a classification. Once USMs have been issued to colleges at the end of Part A they cannot be altered, so in order to take such evidence into account Part B examiners may have to suspend the examining conventions in awarding a classification.

A.6 Communication with candidates

The Chairman of Examiners should write to candidates, reminding them of the general form and procedure for the examination. Letters to candidates from recent years are commended as examples to follow.

A.7 After the examination

It will be helpful if Examiners will ensure that:

- Full Marking Schemes are deposited (after the examination is complete) in the Examiners’ files, kept by Academic Administrator.
- LaTeX source files for the papers (incorporating any corrections) are kept for the electronic archive.
B Checklist for setting papers

The examiners should provide those who are asked to supply draft questions with a checklist of important considerations.

1. Is the question on the syllabus (as in the Examination Regulations or Course Handbook including the Lecture Synopses)?

2. Is the mathematics correct?

3. Is the notation and terminology standard/obvious/defined? (Standard usage from the course is acceptable without explanation but phrases such as ‘as in the lectures’ should be avoided.)

4. Is the question unambiguous? Is it clear what may be assumed, what detail is required, and what would constitute a complete answer?

5. Is the form of presentation familiar/inviting/readable?

6. Does each question have an easy start, consisting of some standard bookwork or similar material, worth around 10 marks which might be readily and routinely completed? This should not wholly be testing memory of previous material explicitly seen.

7. Is there material designed to differentiate at the class borderlines.
   (a) For the II(i)/II(ii) borderline is there a part that tests understanding of standard concepts/techniques (whilst still being rather straightforward) which tests whether a candidate can do any more than merely memorise the bookwork?
   (b) For the I/II(i) borderline is there a part for which a full solution requires truly excellent understanding and skill?

8. Would a II(i)/II(ii) borderline candidate on average achieve around 13/25 marks for the question? Is a mark of 20+ unlikely to be achieved by a significant number of candidates who are not of first-class standard?

9. Is each question overall of a straightforward character?

10. Are the questions as a whole fairly spread across the syllabus?

11. Are the questions of comparable difficulty to one another?

12. Is the question formatted using the oxmathexam.cls file?

    For Part A papers: As students will be sitting these papers at the end of the second year of their studies, questions should be significantly more straightforward than those set for Part B.
C Checklist for marking

The Examiners should provide each marker with the approved model solutions, marking scheme and pre-printed mark sheets.

Marking Scheme

Mark schemes should be applied consistently. Should it become clear while marking that the allocation of marks should be changed, this should be done consistently for all candidates, and the Examiners should be advised of the changes made.

Marking

The Examiners will want to review at least some of the scripts during the classification process. They will not re-mark (since they cannot do so consistently across all candidates). They will want to be able to see quickly where marks have been gained. They will also want to be sure that all of a candidate’s work has been taken into consideration. Markers are therefore asked to mark as follows.

- Indicate in fractional notation the number of the available marks awarded for each part of a question (e.g. a score of 3 out of a possible maximum of 5 would be shown as $\frac{3}{5}$).
- Show the total mark for a question in some distinctive way, e.g. $18$.
- Leave some visible trace that each page has been marked - pages on which no marks are shown should not be ticked, but marked “\_”.
- Copy the total mark for each question on to the cover page of the answer booklet.
- Use a colour of ink not used by the candidate.
- Not write comments on the scripts, but if necessary write on the mark sheets provided. (Markers may indicate briefly to the Examiners where errors occur.)

Mark Sheets

When completing the mark sheets, markers are asked to:

- Enter the integral numerical mark for each question, taking care to distinguish between an attempt scoring zero marks (enter “0”) and a non-attempt (enter “-”).
- Compute a check-sum for each candidate, which is the candidate number (mod 100) plus the sum of the raw marks.
- Retain a photocopy of the mark sheets.

Reports

Markers should provide the Examiners with a brief report on the performance of the candidates on the questions they have marked. The Examiners will consider this report in their deliberations on mark rescaling. In particular, markers are invited to suggest where class boundaries could be drawn.