

**University of Oxford**  
**Final Honour School of Mathematics and Statistics 2008**  
**Part C**  
**First Notice to Candidates**

This circular contains information about:

1. examination procedures
2. standardized marks (USMs) and classification;
3. the format of papers in Part C;
4. the use of calculators and tables.

The full Regulations for the Part C examination are contained in the Examination Decrees and Regulations (the Grey Book).

The timetable for the examination will be set by the Examination Schools and they will send it to you. Timetabling is an extremely complicated process and once the timetable is published it cannot be changed. If you are unable to take a paper at the stipulated time for a religious or other compelling reason, you should ask your college to make the appropriate application on your behalf. Please do not ask the Examiners who are powerless in such matters.

A Second Notice with information about the submission and assessment of dissertations accompanies this First Notice.

A Third Notice will be sent out later with information about practical arrangements in the Examination Schools, including examination numbers, handing in of scripts and so on.

**Jotun Hein**  
Chairman of Examiners  
Department of Statistics  
February 2008

## **FHS Mathematics and Statistics 2008 Part C**

### **Introduction**

The formal procedures determining the conduct of examinations are established and enforced by the University Proctors. For the Department of Statistics such examination conventions are set out in the course handbook and in additional supplements. These conventions are a guide to the examiners and candidates but the regulations set out in the Examination Regulations have precedence. The examiners are nominated by the Nominating Committee in the Department of Statistics and those nominations are submitted for approval by the Vice-Chancellor and the Proctors. Formally, examiners are independent of the Department and of those who lecture courses. However, for written papers in Mathematics and Statistics, examiners are expected to consult with course lecturers in the process of setting questions.

The paragraphs below give an indication of the conventions to which the examiners usually adhere, subject to the guidance of the appointed external examiners, and other bodies such as the Academic Committee in the Department of Statistics, the Mathematical, Physical and Life Sciences Division, the EPSC and the Proctors who may offer advice or make recommendations to examiners. It must be stressed that to preserve the independence of the examiners, candidates are not allowed to make contact directly about matters relating to the content or marking of papers. Any communication must be via the Senior Tutor of your college, who will, if he or she deems the matter of importance, contact the Proctors. The Proctors in turn communicate with the Chairman of Examiners.

### **Standardized Marks**

The University instructs all examiners to adopt a uniform system of reporting marks. This means that each candidate will receive a numerical mark (USM) on each paper in the range 0-100, such that

- First Class performance (on that paper) is indicated by a mark of 70 or over;
- an Upper Second Class performance (on that paper) is indicated by a mark of 60 to 69;
- a Lower Second Class performance (on that paper) is indicated by a mark of 50 to 59;
- a Third Class performance (on that paper) is indicated by a mark of 40 to 49;
- a Pass performance (on that paper) is indicated by a mark of 30 to 39;
- a performance at the level of a Fail (on that paper) is indicated by a mark below 30.

In order to arrive at such standardized marks for each paper, the examiners will mark and assess papers in the way described below.

The Board of Examiners in Part C will assign USMs for full unit and half unit papers taken in Part C and they may recalibrate the raw marks to arrive at university standardized marks reported to candidates. The papers are designed so that the raw marks on a full unit sum to 100 and the raw marks on a half unit sum to 50. The USMs on both full units and half unit will be out of 100. However, Examiners will take into account the relative difficulty of papers when assigning USMs; in order to achieve this, Examiners may use information on candidates' performances on earlier Parts of the examination when recalibrating the raw marks. They may also use other statistics to check that the USMs assigned fairly reflect the students' performances on a paper.

The USMs awarded to a candidate for papers in Part C will be used to arrive at a classification for Part C of the MMath.

### **Classification**

For the first year in 2008, successful candidates for the 4-year degree will receive a classification for Part C of the MMath degree based on Part C alone. Denoting by  $\text{AvUSM-Part C}$ , the mean USM for the papers at Part C, rounded up to the nearest integer, then the formulae for classification for candidates taking Part C are as follows:

- **First Class:**  $\text{AvUSM-Part C} \geq 70$ ;
- **Upper Second Class:**  $70 > \text{AvUSM-Part C} \geq 60$ ;
- **Lower Second Class:**  $60 > \text{AvUSM-Part C} \geq 50$ ;
- **Third Class:**  $50 > \text{AvUSM-Part C} \geq 40$ .

A 'Pass' will not be awarded for Part C. Candidates achieving:  $\text{AvUSM-Part C} < 40$  may supplicate for a BA.

[Note: Half unit papers count as half a paper when determining the average  $\text{AvUSM-Part C}$ .]

The examiners aim to ensure that all papers are fairly and equally rewarded, but if in any case a paper appears to have been problematical, then the examiners, in their classification, will give special consideration to candidates taking that paper. The examiners will take particular care in assigning classes to those candidates whose marks fall near each Class boundary.

Candidates leaving after four years who satisfy the Examiners may supplicate for an MMath in Mathematics, with two associated classifications; one for Years 2 and 3 together, and one for Year 4.

### **Format of Examination Papers**

#### **Statistical Units and Half units**

All papers will be subject papers. Half-unit papers are available in all cases. However, for some, the first half of a paper may be a recommended prerequisite for the second (see the synopses for details).

Where a candidate is taking both halves they will sit a single 3 hour examination. Where they are taking a half-unit only, it will be examined in an examination paper of 1 ¾ hours.

For a 3 hour examination, candidates may answer as many questions as they wish. The best two answers on each half will count. For a 1 ¾ hour examination, candidates may answer as many questions as they wish. The best two answers will count.

Statistics Papers are:

- MS1a: Graphical Models and Inference
- MS1b: Statistical Data Mining
- MS1: MS1a and MS1b combined
- MS2a: Bioinformatics and Computational Biology
- MS2b: Stochastic Models in Mathematical Genetics
- MS2: MS2a and MS2b combined
- MS3b Lévy Processes and Finance
- MS4b/C11.1b Probabilistic Combinatorics

Each half paper MS1a, MS1b, MS2a, MS2b, MS3b, MS4b/C11.1b will contain four questions. Each question is marked out of 25.

### **Dissertations on Statistical Topic (whole unit)**

USM marks will be assigned to Dissertations with the same meaning as regards class boundaries as in the examination papers. In arriving at these marks, the relative weights attached to content, mathematics/statistics (or data analysis/simulation) and presentation will be 25%, 50% and 25%, respectively.

The attention of candidates is drawn to the requirement to submit their own original work and to complete a Declaration of Authorship when submitting their essays. Passages quoted or closely paraphrased from another person's work must be identified as quotations or paraphrases, and the source of the quoted or paraphrased material must be clearly acknowledged. Failure to set a high standard in this respect could lead to a charge of plagiarism, with serious disciplinary consequences. Equally, if a student summarises another person's ideas, judgements, figures, software or diagrams, a reference to that person or the source should be made in the text and the source included in the bibliography. Candidates should consult the Notice relating to dissertations for further details.

### **Mathematics papers C1.1- C12.2 (excluding C7.4)**

These are whole unit papers, and each contains four questions on Michaelmas Term work and four questions on Hilary Term work. Each question is marked out of 25. Most of these papers may also be taken as half unit papers either on Michaelmas Term work (four questions) or on Hilary Term work (four questions).

The whole unit papers last for 3 hours, and the rubric states "You may submit answers to as many questions as you wish. The best two answers in each section will count". The whole unit papers are C1.1, C2.1, C3.1, ..., C12.1; also C1.2, C6.3 and C12.2.

The half unit papers last for 1 3/4 hours, and the rubric states “You may submit answers to as many questions as you wish. The best two answers will be counted”. The half unit papers are labelled C1.1a, C1.1b, ..., C12.1a, C12.1b, where the suffix ‘a’ denotes the MT course and ‘b’ the HT course.

Note that C7.1b and C7.2b are available as half-units only.

### **Calculators and tables**

**Candidates’ attention is drawn to the type of calculator we now permit. Only calculators on the list below may be taken into the examination hall.**

For the papers **C6.2, C8.1, C9.1, MS1a, MS1b, MS2a, MS2b, MS3b**, basic scientific calculators which have features such as exp and log, but which are NON programmable, will be allowed. For these papers **any** of the following will be permitted:

CASIO fx-82;  
CASIO fx-83 (with any suffix, such as ES, MS) ;  
CASIO fx-85 (with any suffix, such as ES, MS) or  
CASIO fx\_992 S.

HEWLETT-PACKARD hp 9s;  
HEWLETT-PACKARD hp 10s;  
HEWLETT-PACKARD hp 30 s.

SHARP EL-530 LB ;  
SHARP EL-520;  
SHARP EL-531 (with any suffix).

TEXAS INSTRUMENTS TI 30X (and any suffix);  
TEXAS INSTRUMENTS TI 36X (and any suffix).

**Candidates should note that no calculators will be made available in the examination room.**

**Calculators will not be permitted on the Mathematics papers except for C6.2, C8.1, and C9.1.**

New Cambridge Elementary Statistical Tables will be provided for use with papers MS1a, MS1b, MS2a, MS2b and MS3b. These tables may be inspected in the Seminar Room, Department of Statistics, between 9 am and 12 noon on any weekday in Week 5 of Trinity Term.

### **Part C Examiners**

February 2008