

To: Students taking the in-person classed Part II Examinations, 8th-11th September 2020

This document contains an explanation of the examination rubric and, in particular, of some **important changes to the cover sheets and to the way that you should arrange your answers at the end of each exam.**

Please read the following carefully, noting the differences from what you did in Parts IA and IB.

It is important that you follow **ALL** the instructions in the rubric. This will ensure that nothing goes astray during the automated scanning and sorting of scripts (introduced because of Covid-19). If you make a mistake, there are a number of cross-checks and fail-safes intended to spot and correct it, but it would be very much better to follow the rubric exactly.

Writing Your Answers

As usual, **write on one side of the paper only**. Use the **front** of the script paper, with the **punched hole in the top left corner**. As usual, **begin each answer on a separate sheet**. These instructions are essential for the way your answers will be put in a bundle and scanned.

There are no restrictions on what you write with, provided it is legible, but black or blue ink are recommended. Please do not write in either red or green, because these colours are used for marking and checking.

Cover Sheets

The coloured cover sheets are crucial for the automated script sorting: in the sorting algorithm, a **green master cover sheet** marks the beginning of your script and **gold question cover sheets** mark the beginning of each answer. The cover sheets also collect information that allows each answer to be unambiguously identified as yours and to be sent to the right examiner. Copies of the cover sheets are provided at the end of this document.

You will be given time to complete the cover sheets after the examination finishes.

You must complete a **gold question** cover sheet **for each question** that you have attempted. (**This is different** from what you did in Parts IA and IB, when you only needed one sheet for each examiner letter.)

At the top of each **gold question** cover sheet write your **blind grade id (candidate number)**, e.g. 2617U, and your desk number, e.g. 045, in the boxes provided.

Then **put a cross** in the box by the particular question you have attempted, e.g.



32E Dynamical Systems

and put the cover sheet at the front of that answer, for identification by the computer. If you make a mistake, fully shade the incorrect box and then cross the correct box as above.

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In addition to the gold cover sheets for each question, you must also complete a single **green master** cover sheet. The information you provide on the green master cover sheet allows a cross-check on the gold question cover sheets.

On the front of the green master cover sheet you must provide the information that identifies the script as yours, i.e. your blind grade id and your desk number, in both machine-readable and human-readable form. On the back you should indicate **all the questions** that you have attempted by putting crosses in the relevant boxes. If you make a mistake, fully shade the incorrect box and then cross the correct box.

Bundling the Script

Unlike what you did in Parts IA and IB, collect your answers and coversheets into a **single bundle**, and secure it by passing the “treasury tag” **once** through the punched holes in the top left corner. You should not include rough paper.

Within the bundle, the green master cover sheet should be on top, then the gold cover sheet and answer for the first question attempted, then the gold cover sheet and answer for the second question attempted, etc. Please tie up the questions you have attempted in numerical order.

The Rest of the Rubric

The first part of the rubric gives the usual description of Section I and II questions, and the limit on the number of Section I questions you may attempt. The format of the examination papers is exactly the same as usual, and as described in the Schedules. **The rubric is reproduced in full below** on the next page (followed by example coversheets).

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MATHEMATICAL TRIPOS Part II

Tuesday, 8 September, 2020 9:00 am to 12:00 pm

PAPER 1

Before you begin read these instructions carefully.

The examination paper is divided into two sections. Each question in Section II carries twice the number of marks of each question in Section I. Section II questions also carry an alpha or beta quality mark and Section I questions carry a beta quality mark.

*Candidates may obtain credit from attempts on **at most six questions** from Section I and from any number of questions from Section II.*

*Write on **one side** of the paper only and begin each answer on a separate sheet.*

Write legibly; otherwise you place yourself at a grave disadvantage.

At the end of the examination:

Separate your answers to each question.

*Complete a gold cover sheet **for each question** that you have attempted, and place it at the front of your answer to that question.*

*Complete a green master cover sheet listing **all the questions** that you have attempted.*

Every cover sheet must also show your Blind Grade ID and desk number.

*Tie up your answers and cover sheets into a **single bundle**, with the master cover sheet on the top, and then the cover sheet and answer for each question, in the numerical order of the questions.*

STATIONERY REQUIREMENTS

Gold cover sheets

Green master cover sheet

Script paper

Rough paper

<p>You may not start to read the questions printed on the subsequent pages until instructed to do so by the Invigilator.</p>

MASTER COVER SHEET

COMPLETE BOTH SIDES OF THIS SHEET BY
CROSSING THE APPROPRIATE BOXES LIKE THIS: ☒

BLIND GRADE ID/CANDIDATE NUMBER					DESK NUMBER (on desk ticket - include any zeros)											
e.g.	2	6	1	7	U			↓	↓	↓						
↓	↓	↓	↓	↓				↓	↓	↓						
0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	A	<input checked="" type="checkbox"/>	J	<input type="checkbox"/>	S	<input type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	B	<input type="checkbox"/>	K	<input type="checkbox"/>	T	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	C	<input type="checkbox"/>	L	<input type="checkbox"/>	U	<input type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	D	<input type="checkbox"/>	M	<input type="checkbox"/>	V	<input type="checkbox"/>	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4	E	<input type="checkbox"/>	N	<input type="checkbox"/>	W	<input type="checkbox"/>	4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	F	<input type="checkbox"/>	O	<input type="checkbox"/>	X	<input type="checkbox"/>	5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6	G	<input type="checkbox"/>	P	<input type="checkbox"/>	Y	<input type="checkbox"/>	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7	H	<input type="checkbox"/>	Q	<input type="checkbox"/>	Z	<input type="checkbox"/>	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8	I	<input type="checkbox"/>	R	<input type="checkbox"/>		<input type="checkbox"/>	8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9							9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9

Please also write clearly your Blind Grade ID

.....

and Desk Number

↓	↓	↓	↓
1	2	3	4

↓
A

↓	↓	↓
0	4	5

The Blind Grade ID and desk number **must include** any leading and/or trailing zeros.

Make sure you cross the boxes like this: ☒

If you make a mistake, fully shade the incorrect box and cross the correct box as above.

Cross the boxes overleaf for all of the questions that you have attempted.

For each question you must also complete a separate question cover sheet. Place it at the front of your answer to that question.

Place this master cover sheet at the front of your bundle of answers.

It is forbidden to remove any writing-paper, whether written on or not, or rough paper, from the examination-room.

Please Turn Over

MASTER COVER SHEET

PAPER 1

Cross the boxes for all the questions that you attempted

- | | | | | | |
|-------------------------------------|------------|-------------------------------------|-------------------------------------|------------|-----------------------------------|
| <input checked="" type="checkbox"/> | 1H | Number Theory | <input type="checkbox"/> | 27K | Probability and Measure |
| <input type="checkbox"/> | 2H | Topics in Analysis | <input type="checkbox"/> | 28K | Applied Probability |
| <input checked="" type="checkbox"/> | 3I | Coding and Cryptography | <input type="checkbox"/> | 29J | Principles of Statistics |
| <input type="checkbox"/> | 4F | Automata and Formal Languages | <input type="checkbox"/> | 30K | Stochastic Financial Models |
| <input type="checkbox"/> | 5J | Statistical Modelling | <input type="checkbox"/> | 31J | Mathematics of Machine Learning |
| <input type="checkbox"/> | 6B | Mathematical Biology | <input type="checkbox"/> | 32E | Dynamical Systems |
| <input type="checkbox"/> | 7E | Further Complex Methods | <input type="checkbox"/> | 33C | Integrable Systems |
| <input type="checkbox"/> | 8B | Classical Dynamics | <input type="checkbox"/> | 34A | Principles of Quantum Mechanics |
| <input type="checkbox"/> | 9D | Cosmology | <input checked="" type="checkbox"/> | 35C | Applications of Quantum Mechanics |
| <input type="checkbox"/> | 10C | Quantum Information and Computation | <input type="checkbox"/> | 36A | Statistical Physics |
| <input checked="" type="checkbox"/> | 11I | Coding and Cryptography | <input type="checkbox"/> | 37D | Electrodynamics |
| <input type="checkbox"/> | 12F | Automata and Formal Languages | <input type="checkbox"/> | 38D | General Relativity |
| <input type="checkbox"/> | 13J | Statistical Modelling | <input checked="" type="checkbox"/> | 39B | Fluid Dynamics II |
| <input type="checkbox"/> | 14E | Further Complex Methods | <input type="checkbox"/> | 40B | Waves |
| <input type="checkbox"/> | 15D | Cosmology | <input type="checkbox"/> | 41E | Numerical Analysis |
| <input checked="" type="checkbox"/> | 16H | Logic and Set Theory | | | |
| <input checked="" type="checkbox"/> | 17G | Graph Theory | | | |
| <input type="checkbox"/> | 18G | Galois Theory | | | |
| <input type="checkbox"/> | 19F | Representation Theory | | | |
| <input type="checkbox"/> | 20G | Number Fields | | | |
| <input type="checkbox"/> | 21F | Algebraic Topology | | | |
| <input type="checkbox"/> | 22I | Linear Analysis | | | |
| <input type="checkbox"/> | 23I | Analysis of Functions | | | |
| <input type="checkbox"/> | 24F | Riemann Surfaces | | | |
| <input type="checkbox"/> | 25F | Algebraic Geometry | | | |
| <input type="checkbox"/> | 26I | Differential Geometry | | | |



MATHSIIP1



1989689956 0002

QUESTION COVER SHEET

BLIND GRADE ID e.g. 1234A

6	7	8	9	4
---	---	---	---	---

DESK NUMBER

0	1	2
---	---	---

For **each** question attempted, complete a separate copy of this coversheet.

Cross the box by the relevant question number like this: and place the coversheet at the front of your answer to that question.

- | | | | | | |
|-------------------------------------|------------|-------------------------------------|--------------------------|------------|-----------------------------------|
| <input type="checkbox"/> | 1H | Number Theory | <input type="checkbox"/> | 23I | Analysis of Functions |
| <input type="checkbox"/> | 2H | Topics in Analysis | <input type="checkbox"/> | 24F | Riemann Surfaces |
| <input type="checkbox"/> | 3I | Coding and Cryptography | <input type="checkbox"/> | 25F | Algebraic Geometry |
| <input type="checkbox"/> | 4F | Automata and Formal Languages | <input type="checkbox"/> | 26I | Differential Geometry |
| <input type="checkbox"/> | 5J | Statistical Modelling | <input type="checkbox"/> | 27K | Probability and Measure |
| <input type="checkbox"/> | 6B | Mathematical Biology | <input type="checkbox"/> | 28K | Applied Probability |
| <input type="checkbox"/> | 7E | Further Complex Methods | <input type="checkbox"/> | 29J | Principles of Statistics |
| <input type="checkbox"/> | 8B | Classical Dynamics | <input type="checkbox"/> | 30K | Stochastic Financial Models |
| <input type="checkbox"/> | 9D | Cosmology | <input type="checkbox"/> | 31J | Mathematics of Machine Learning |
| <input type="checkbox"/> | 10C | Quantum Information and Computation | <input type="checkbox"/> | 32E | Dynamical Systems |
| <input checked="" type="checkbox"/> | 11I | Coding and Cryptography | <input type="checkbox"/> | 33C | Integrable Systems |
| <input type="checkbox"/> | 12F | Automata and Formal Languages | <input type="checkbox"/> | 34A | Principles of Quantum Mechanics |
| <input type="checkbox"/> | 13J | Statistical Modelling | <input type="checkbox"/> | 35C | Applications of Quantum Mechanics |
| <input type="checkbox"/> | 14E | Further Complex Methods | <input type="checkbox"/> | 36A | Statistical Physics |
| <input type="checkbox"/> | 15D | Cosmology | <input type="checkbox"/> | 37D | Electrodynamics |
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| <input type="checkbox"/> | 21F | Algebraic Topology | | | |
| <input type="checkbox"/> | 22I | Linear Analysis | | | |