For candidates applying for Mathematics, Computer Science, or one of their joint degrees at the UNIVERSITY OF OXFORD and/or degrees at IMPERIAL COLLEGE LONDON and/or degrees at the UNIVERSITY OF WARWICK.

October 2023
Time allowed: 2\frac{1}{2} hours

You must use a pen throughout the test. Calculators are not permitted. Please complete the following details in BLOCK CAPITALS.

<table>
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<th>Surname</th>
<th>Other name(s)</th>
<th>Candidate Number</th>
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During the test, please write your Candidate Number at the top of each page as indicated.

The test contains 6 questions of which you should attempt 5.

If you are applying to Oxford for the degree course:

- Mathematics / Mathematics & Statistics, or Mathematics & Philosophy, you should attempt Questions 1, 2, 3, 4, 5.
- Computer Science, or Mathematics & Computer Science, or Computer Science & Philosophy, you should attempt Questions 1, 2, 3, 5, 6.

If you are not an Oxford applicant, you should attempt Questions 1, 2, 3, 4, 5.

Further credit cannot be obtained by attempting extra questions.

Question 1 is a multiple-choice question with ten parts. Marks are given solely for correct answers, but any rough working should be shown in the pages in this booklet. Answer Question 1 on the grid on the next page. Each part is worth 4 marks.

Answers to Questions 2–6 should be written in the space provided in this booklet, continuing onto the blank pages at the end of this booklet if necessary. Each of Questions 2–6 is worth 15 marks.
For each part of the question you will be given five possible answers, just one of which is correct. Indicate for each part A-J which answer (a), (b), (c), (d), or (e) you think is correct with a tick (✓) in the corresponding column in the table below. Please show any rough working on the following pages.

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Question 1
Continued.

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Candidate Number: M
Question 2

Continued.

Candidate Number: M
Continued.

Candidate Number: M
For ALL APPLICANTS.  Candidate Number: M
Question 3

Continued.

Candidate Number: M
Continued.

Candidate Number: M
Question 4
Oxford applicants for Computer Science, Mathematics & Computer Science, or Computer Science & Philosophy, should go to question 5.
Question 4

Continued.

Candidate Number: M
Question 5
For ALL APPLICANTS.

Candidate Number: M
Question 5
Continued.

Candidate Number: M
Question 6

For Oxford applicants in Computer Science, Mathematics & Computer Science, or Computer Science & Philosophy ONLY.

Candidate Number: M
Question 6
Continued.

Candidate Number: M
Question 6
Continued.

Candidate Number: M
Continuation of work for Question: Candidate Number: M
Continuation of work for Question:  

Candidate Number: M