OCR
Oxford Cambridge and RSA

Wednesday 6 October 2021 – Afternoon

A Level Mathematics B (MEI)

H640/01 Pure Mathematics and Mechanics

Printed Answer Booklet

Time allowed: 2 hours

8979420703

You must have:
- Question Paper H640/01 (inside this document)
- a scientific or graphical calculator

H64001

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | | | | | | Candidate number | | | | |

First name(s) _____

Last name _____

INSTRUCTIONS
- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the **Printed Answer Booklet**. If you need extra space use the lined pages at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Give your final answers to a degree of accuracy that is appropriate to the context.
- The acceleration due to gravity is denoted by $g\,\mathrm{m\,s^{-2}}$. When a numerical value is needed use $g = 9.8$ unless a different value is specified in the question.

INFORMATION
- This document has **16** pages.

ADVICE
- Read each question carefully before you start your answer.

Section A (21 marks)

1	
2	
3(a)	

3(b)	
4(a)(i)	
4(a)(ii)	

4(b)(i)	
4(b)(ii)	
5(a)	
	$F =$
	$x =$
5(b)	

Section B (79 marks)

6(a)

6(b)

7(a)

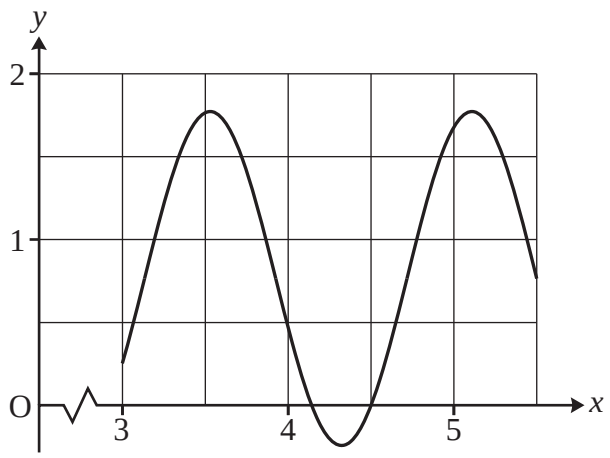
7(b)

7(c)	
8(a)	
8(b)	

8(c)(i)

8(c)(ii)

8(d)(i)



8(d)(ii)

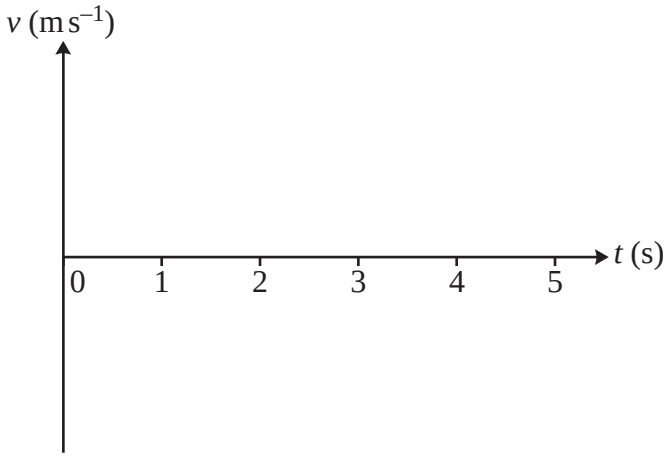
8(d)(iii)

9(a)(i)	
9(a)(ii)	
9(b)	
9(c)	

10

10(a)

10(b)



10(c)

10(d)

Vertical component of the second ball's initial velocity =

Time taken for the second ball to reach its greatest height =

10(e)

$u =$

$\alpha =$

11(a)

11(b)

11(c)

12

13(a)

13(b)

13(c)

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).