

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Pearson Edexcel
International
Advanced Level

Centre Number

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Candidate Number

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Monday 24 June 2019

Morning (Time: 1 hour 30 minutes)

Paper Reference **WST02/01**

Mathematics

International Advanced Subsidiary/Advanced Level
Statistics S2

You must have:

Mathematical Formulae and Statistical Tables (Blue), calculator

Total Marks

Candidates may use any calculator permitted by Pearson regulations. Calculators must not have the facility for symbolic algebra manipulation, differentiation and integration, or have retrievable mathematical formulae stored in them.

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions and ensure that your answers to parts of questions are clearly labelled.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You should show sufficient working to make your methods clear. Answers without working may not gain full credit.
- Inexact answers should be given to three significant figures unless otherwise stated.

Information

- A booklet 'Mathematical Formulae and Statistical Tables' is provided.
- There are 7 questions in this question paper. The total mark for this paper is 75.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.
- If you change your mind about an answer, cross it out and put your new answer and any working underneath.

Turn over ►

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Question 1 continued

Lined area for writing the answer to Question 1.



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Question 1 continued

Lined area for writing the answer to Question 1.

(Total 15 marks)

Q1



Question 2 continued

Handwriting practice area with 30 horizontal lines.

(Total 6 marks)

Q2

Marking box for Q2



(2)

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Question 3 continued

Lined area for writing the answer to Question 3.

Q3

(Total 7 marks)



- (3)

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Question 4 continued

Lined area for writing the answer to Question 4.



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Question 4 continued

Lined area for writing the answer to Question 4.

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Q4

(Total 8 marks)





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Question 5 continued

Lined area for writing the answer to Question 5.



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Question 5 continued

Handwriting practice area with 30 horizontal lines.

(Total 19 marks)

Q5	
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6. Sarah makes clay pots in batches of size n . The clay pots need to be fired in a kiln. Sarah finds that 30% of the clay pots crack when they are fired. The remainder do not crack.

- (a) Explain what assumptions need to be made to model with a binomial distribution the number of clay pots in a batch that crack when fired.

(2)

Sarah makes and fires a batch of 8 clay pots.

- (b) Write down the expected number of clay pots that crack.

(1)

- (c) Find the probability that exactly 2 clay pots crack.

(2)

The probability that at least k clay pots crack is 0.0113

- (d) Find the value of k .

(2)

Sarah attends a course to improve her pottery skills. She claims that the course will reduce the proportion of clay pots that crack when fired.

After completing the course Sarah makes a batch of 20 clay pots to assess her claim.

- (e) Stating your hypotheses clearly, determine the critical region for the hypothesis test she must use to assess her claim using a 5% significance level.

(3)

- (f) Write down the actual significance level of this test.

(1)



Question 6 continued

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Question 6 continued

Handwriting practice area with 30 horizontal lines.

(Total 11 marks)

Q6



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Question 7 continued

Handwriting practice area with 25 horizontal lines.



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TOTAL FOR PAPER: 75 MARKS

24

