

Write your name here

Surname	Other names
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Pearson Edexcel
International
Advanced Level

Centre Number

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Candidate Number

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Statistics S3
Advanced/Advanced Subsidiary

Sample Assessment Material
Time: 1 hour 30 minutes

Paper Reference
WST03/01

You must have:
Mathematical Formulae and Statistical Tables (Blue)

Total Marks

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Candidates may use any calculator allowed by the regulations of the Joint Council for Qualifications. 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). Coloured pencils and highlighter pens must not be used.
- **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.
- Values from the statistical tables should be quoted in full. When a calculator is used, the answer should be given to an appropriate degree of accuracy.

Information

- 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.

Turn over ►

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PEARSON

7. A large company surveyed its staff to investigate the awareness of company policy. The company employs 6000 full-time staff and 4000 part-time staff.

(a) Describe how a stratified sample of 200 staff could be taken. (3)

(b) Explain an advantage of using a stratified sample rather than a simple random sample. (1)

A random sample of 80 full-time staff and an independent random sample of 80 part-time staff were given a test of policy awareness. The results are summarised in the table below.

	Mean score (\bar{x})	Variance of scores (s^2)
Full-time staff	52	21
Part-time staff	50	19

(c) Stating your hypotheses clearly, test, at the 1% level of significance, whether or not the mean policy awareness scores for full-time and part-time staff are different. (7)

(d) Explain the significance of the Central Limit Theorem to the test in part (c). (2)

(e) State an assumption you have made in carrying out the test in part (c). (1)

After all the staff had completed a training course the 80 full-time staff and the 80 part-time staff were given another test of policy awareness. The value of the test statistic z was 2.53

(f) Comment on the awareness of company policy for the full-time and part-time staff in light of this result. Use a 1% level of significance. (2)

(g) Interpret your answers to part (c) and part (f). (1)
