Write your name here

| Surname | Other names |
|---|---|
| | |

**Pearson Edexcel**
**International Advanced Level**

Centre Number | | | | | |

Candidate Number | | | | |

# Psychology

## International Advanced Level
## Paper 3: Applications of Psychology

Monday 23 January 2017 – Afternoon
**Time: 1 hour 30 minutes**

Paper Reference
**WPS03/01**

**You do not need any other materials.**

Total Marks

## Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **ALL** questions in Section A, and all questions from **EITHER** Option 1 criminological psychology **OR** Option 2 health psychology.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

## Information

- The total mark for this paper is 64.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- The list of formulae and critical value tables are printed at the start of this paper.
- Candidates may use a calculator.

## Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

*Turn over* ▶

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P 5 2 1 9 2 R A 0 1 3 6

Pearson

## FORMULAE AND STATISTICAL TABLES

**Standard deviation (sample estimate)**

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

**Spearman's rank correlation coefficient**

$$1-\frac{6\sum d^2}{n(n^2-1)}$$

**Critical values for Spearman's rank**

| | Level of significance for a one-tailed test | | | | |
|---|---|---|---|---|---|
| | **0.05** | **0.025** | **0.01** | **0.005** | **0.0025** |
| | **Level of significance for a two-tailed test** | | | | |
| *n* | **0.10** | **0.05** | **0.025** | **0.01** | **0.005** |
| **4** | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| **5** | 0.700 | 0.900 | 0.900 | 1.000 | 1.000 |
| **6** | 0.657 | 0.771 | 0.829 | 0.943 | 0.943 |
| **7** | 0.571 | 0.679 | 0.786 | 0.857 | 0.893 |
| **8** | 0.548 | 0.643 | 0.738 | 0.810 | 0.857 |
| **9** | 0.483 | 0.600 | 0.683 | 0.767 | 0.817 |
| **10** | 0.442 | 0.564 | 0.649 | 0.733 | 0.782 |
| **11** | 0.418 | 0.527 | 0.609 | 0.700 | 0.755 |
| **12** | 0.399 | 0.504 | 0.587 | 0.671 | 0.727 |
| **13** | 0.379 | 0.478 | 0.560 | 0.648 | 0.698 |
| **14** | 0.367 | 0.459 | 0.539 | 0.622 | 0.675 |
| **15** | 0.350 | 0.443 | 0.518 | 0.600 | 0.654 |
| **16** | 0.338 | 0.427 | 0.503 | 0.582 | 0.632 |
| **17** | 0.327 | 0.412 | 0.482 | 0.558 | 0.606 |
| **18** | 0.317 | 0.400 | 0.468 | 0.543 | 0.590 |
| **19** | 0.308 | 0.389 | 0.456 | 0.529 | 0.575 |
| **20** | 0.299 | 0.378 | 0.444 | 0.516 | 0.561 |
| **21** | 0.291 | 0.369 | 0.433 | 0.503 | 0.549 |
| **22** | 0.284 | 0.360 | 0.423 | 0.492 | 0.537 |
| **23** | 0.277 | 0.352 | 0.413 | 0.482 | 0.526 |
| **24** | 0.271 | 0.344 | 0.404 | 0.472 | 0.515 |
| **25** | 0.265 | 0.337 | 0.396 | 0.462 | 0.505 |
| **26** | 0.260 | 0.330 | 0.388 | 0.453 | 0.496 |
| **27** | 0.255 | 0.323 | 0.381 | 0.445 | 0.487 |
| **28** | 0.250 | 0.317 | 0.374 | 0.437 | 0.479 |
| **29** | 0.245 | 0.312 | 0.367 | 0.430 | 0.471 |
| **30** | 0.241 | 0.306 | 0.361 | 0.423 | 0.463 |

**The calculated value must be equal to or exceed the critical value in this table for significance to be shown.**

**Chi-squared distribution formula**

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

**Critical values for chi-squared distribution**

| | Level of significance for a one-tailed test | | | | | |
|---|---|---|---|---|---|---|
| | **0.10** | **0.05** | **0.025** | **0.01** | **0.005** | **0.0005** |
| | **Level of significance for a two-tailed test** | | | | | |
| **df** | **0.20** | **0.10** | **0.05** | **0.025** | **0.01** | **0.001** |
| **1** | 1.64 | 2.71 | 3.84 | 5.02 | 6.64 | 10.83 |
| **2** | 3.22 | 4.61 | 5.99 | 7.38 | 9.21 | 13.82 |
| **3** | 4.64 | 6.25 | 7.82 | 9.35 | 11.35 | 16.27 |
| **4** | 5.99 | 7.78 | 9.49 | 11.14 | 13.28 | 18.47 |
| **5** | 7.29 | 9.24 | 11.07 | 12.83 | 15.09 | 20.52 |
| **6** | 8.56 | 10.65 | 12.59 | 14.45 | 16.81 | 22.46 |
| **7** | 9.80 | 12.02 | 14.07 | 16.01 | 18.48 | 24.32 |
| **8** | 11.03 | 13.36 | 15.51 | 17.54 | 20.09 | 26.12 |
| **9** | 12.24 | 14.68 | 16.92 | 19.02 | 21.67 | 27.88 |
| **10** | 13.44 | 15.99 | 18.31 | 20.48 | 23.21 | 29.59 |
| **11** | 14.63 | 17.28 | 19.68 | 21.92 | 24.73 | 31.26 |
| **12** | 15.81 | 18.55 | 21.03 | 23.34 | 26.22 | 32.91 |
| **13** | 16.99 | 19.81 | 22.36 | 24.74 | 27.69 | 34.53 |
| **14** | 18.15 | 21.06 | 23.69 | 26.12 | 29.14 | 36.12 |
| **15** | 19.31 | 22.31 | 25.00 | 27.49 | 30.58 | 37.70 |
| **16** | 20.47 | 23.54 | 26.30 | 28.85 | 32.00 | 39.25 |
| **17** | 21.62 | 24.77 | 27.59 | 30.19 | 33.41 | 40.79 |
| **18** | 22.76 | 25.99 | 28.87 | 31.53 | 34.81 | 42.31 |
| **19** | 23.90 | 27.20 | 30.14 | 32.85 | 36.19 | 43.82 |
| **20** | 25.04 | 28.41 | 31.41 | 34.17 | 37.57 | 45.32 |
| **21** | 26.17 | 29.62 | 32.67 | 35.48 | 38.93 | 46.80 |
| **22** | 27.30 | 30.81 | 33.92 | 36.78 | 40.29 | 48.27 |
| **23** | 28.43 | 32.01 | 35.17 | 38.08 | 41.64 | 49.73 |
| **24** | 29.55 | 33.20 | 36.42 | 39.36 | 42.98 | 51.18 |
| **25** | 30.68 | 34.38 | 37.65 | 40.65 | 44.31 | 52.62 |
| **26** | 31.80 | 35.56 | 38.89 | 41.92 | 45.64 | 54.05 |
| **27** | 32.91 | 36.74 | 40.11 | 43.20 | 46.96 | 55.48 |
| **28** | 34.03 | 37.92 | 41.34 | 44.46 | 48.28 | 56.89 |
| **29** | 35.14 | 39.09 | 42.56 | 45.72 | 49.59 | 58.30 |
| **30** | 36.25 | 40.26 | 43.77 | 46.98 | 50.89 | 59.70 |
| **40** | 47.27 | 51.81 | 55.76 | 59.34 | 63.69 | 73.40 |
| **50** | 58.16 | 63.17 | 67.51 | 71.42 | 76.15 | 86.66 |
| **60** | 68.97 | 74.40 | 79.08 | 83.30 | 88.38 | 99.61 |
| **70** | 79.72 | 85.53 | 90.53 | 95.02 | 100.43 | 112.32 |

**The calculated value must be equal to or exceed the critical value in this table for significance to be shown.**

**Wilcoxon Signed Ranks test process**

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

**Critical values for the Wilcoxon Signed Ranks test**

| | **Level of significance for a one-tailed test** | | |
|---|---|---|---|
| | 0.05 | 0.025 | 0.01 |
| | **Level of significance for a two-tailed test** | | |
| n | 0.1 | 0.05 | 0.02 |
| N=5 | 0 | – | – |
| 6 | 2 | 0 | – |
| 7 | 3 | 2 | 0 |
| 8 | 5 | 3 | 1 |
| 9 | 8 | 5 | 3 |
| 10 | 11 | 8 | 5 |
| 11 | 13 | 10 | 7 |
| 12 | 17 | 13 | 9 |

**The calculated value must be equal to or less than the critical value in this table for significance to be shown.**

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**SECTION A BEGINS ON THE NEXT PAGE.**

## SECTION A

**Answer ALL questions in this section. Write your answers in the spaces provided.**

**1** A researcher replicated Ainsworth's Strange Situation on two 12-month-old infants, Amelia and Hannah. In the presence of their primary care giver, Hannah did not explore the room, but Amelia did.

The researcher observed that when the primary care giver left the room Amelia was not distressed and Hannah was extremely distressed.

(a) Identify the type of attachment demonstrated by Amelia and Hannah.

**(2)**

**Amelia's** type of attachment

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.....

**Hannah's** type of attachment

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.....

(b) Describe the reunion behaviour you would expect Hannah to show on the primary care giver's return.

**(2)**

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**(Total for Question 1 = 4 marks)**

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**QUESTION 2 BEGINS ON THE NEXT PAGE.**

**2** Anton investigated the zone of proximal development (ZPD). Five year olds were either paired with another child of the same age or with a seven year old.

The children were given a mathematical problem and the time taken to solve it was recorded.

**Table 1** shows the mean score for time taken in seconds by children in each condition, A and B, to solve the problem.

| | **Condition A**<br><br>**Five year old paired with a child of the same age** | **Condition B**<br><br>**Five year old paired with a seven year old** |
|---|---|---|
| Mean score for time taken in seconds | 15.5 | 10.6 |

**Table 1**

(a) Give **one** conclusion that can be drawn from the data in **Table 1**.

**(2)**

(b) Define what is meant by a zone of proximal development (ZPD).

**(1)**

Anton's investigation gathered quantitative data. This is where the data gathered is expressed numerically.

(c) Justify the use of quantitative data in research.

**(1)**

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.....

(d) Explain **one** weakness of Anton's investigation.

**(2)**

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**(Total for Question 2 = 6 marks)**

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**3** Pawel and David carried out a structured observation to test conservation with children aged five to eight years old. Pawel altered the presentation of items and the children were then asked to estimate number, mass and volume.

David observed the children's responses and recorded the data.

**Table 2** represents the percentage of conservation errors made by the children.

| Age | Percentage % of conservation errors in mass | Percentage % of conservation errors in number | Percentage % of conservation errors in volume |
|---|---|---|---|
| Five year olds | 85 | 73 | 83 |
| Six year olds | 57 | 43 | 64 |
| Seven year olds | 32 | 25 | 45 |
| Eight year olds | 16 | 13 | 26 |

**Table 2**

**Space for calculations**

(a) Calculate the mean percentage score for all conservation errors made by the six year olds.

You must express your answer to two decimal places.

**(1)**

Total mean percentage score .....

(b) Predict the percentage of conservation errors in volume for nine-year-old children based on the current trend in the data.

**(1)**

Percentage of conservation errors in volume .....

(c) Explain **one** weakness of using a structured observation.

**(2)**

(d) Explain **one** alternative research method used in developmental psychology.

**(2)**

**(Total for Question 3 = 6 marks)**

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**4** Evaluate learning theories as an explanation of attachment.

**(8)**

**(Total for Question 4 = 8 marks)**

**5** Assess the generalisability of cross-cultural research into the development of children.

**(8)**

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**(Total for Question 5 = 8 marks)**

**TOTAL FOR SECTION A = 32 MARKS**

## SECTION B

**Answer ALL questions from EITHER OPTION 1: CRIMINOLOGICAL PSYCHOLOGY OR OPTION 2: HEALTH PSYCHOLOGY.**

**Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.**

**If you answer the questions in Option 1 put a cross in the box ☒ .**

## OPTION 1: CRIMINOLOGICAL PSYCHOLOGY

**Write your answers in the spaces provided.**

**6** Some psychologists have suggested a link between the level of stress and the ability of an eyewitness to recall accurate information.

(a) State what is meant by the term stress in relation to eyewitnesses.

**(1)**

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(b) Give **one** reason why the stress experienced by eyewitnesses affects the reliability of their recall.

**(1)**

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**(Total for Question 6 = 2 marks)**

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**QUESTION 7 BEGINS ON THE NEXT PAGE.**

**7** Remi and Aram conducted research to explore whether the race of a jury and defendant affects jury decision making. They reviewed five trials by jury that recorded guilty verdicts.

The results of their study are shown in **Table 3**.

| Trial | % Caucasian jurors | % Afro-Caribbean jurors | % other ethnic background jurors | Nature of crime |
|---|---|---|---|---|
| A | 67 | 23 | 10 | Fraud |
| B | 42 | 15 | 43 | Drugs |
| C | 56 | 28 | 16 | Violence |
| D | 25 | 24 | 51 | Drugs |
| E | 46 | 36 | 18 | Property |

**Table 3**

**Space for calculations**

(a) Calculate the **range** for jurors from other ethnic backgrounds.

**(1)**

Range .....

(b) Calculate the **modal** crime from **Table 3**.

**(1)**

Modal .....

Remi and Aram decided to research the effects of the defendants' race on jury decision making.

(c) State **two** effects of the defendants' race on jury decision making that Remi and Aram may have found in their research.

**(2)**

1 .....

.....

.....

.....

2 .....

.....

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.....

(d) Explain **two** ethical considerations that Remi and Aram may have considered in their research to study the effect of race on jury decision making.

**(4)**

1 .....

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.....

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2 .....

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**(Total for Question 7 = 8 marks)**

**8** Loftus and Palmer (1974) carried out research into the influence of verb use in leading questions following a traffic accident.

**Table 4** shows the mean speed estimates for each verb used.

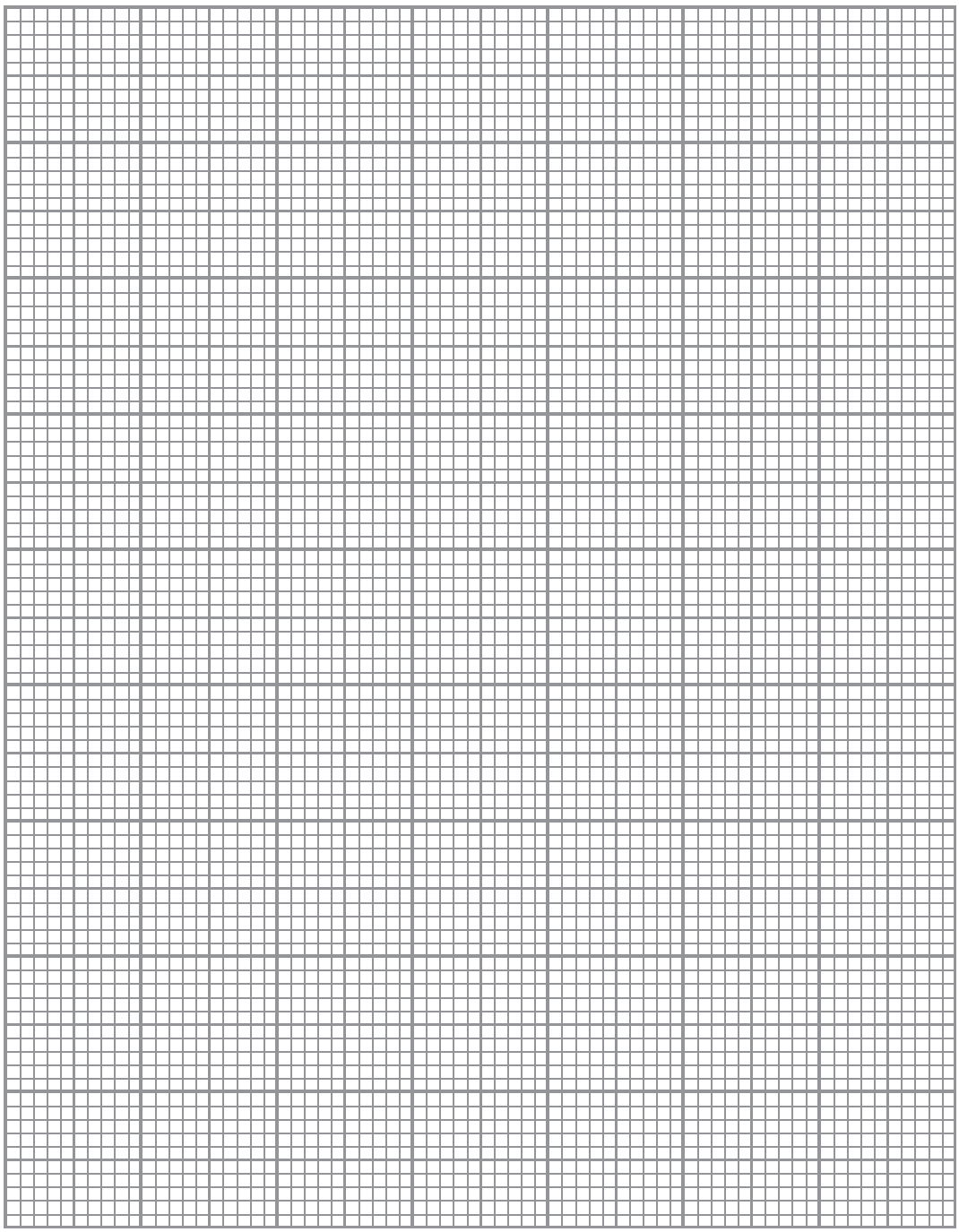
| Verb used in leading questions | Mean speed estimate to nearest whole number (mph) |
|---|---|
| Smashed | 40 |
| Collided | 39 |
| Bumped | 38 |
| Hit | 34 |
| Contacted | 32 |

**Table 4**

(a) Draw a bar chart to illustrate the data in Table 4.

**(3)**

Title



(b) Loftus and Palmer (1974) concluded from their data in **Table 4** that a change of verb in leading questions could affect eyewitness recall of a car accident.

Explain why Loftus and Palmer (1974) came to this conclusion.

**(3)**

**(Total for Question 8 = 6 marks)**

**9** Evaluate Penrod and Cutler's (1989) research of eyewitness expert testimony.

**(8)**

**(Total for Question 9 = 8 marks)**

**10** Assess the role of the media as the main influence on antisocial behaviour.

**(8)**

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**(Total for Question 10 = 8 marks)**

**TOTAL FOR SECTION B OPTION 1 = 32 MARKS**

## SECTION B

**If you answer the questions in Option 2 put a cross in the box ☒ .**

## OPTION 2: HEALTH PSYCHOLOGY

**Write your answers in the spaces provided.**

**11** Malcolm is 28 years old and was explaining to his girlfriend that he had recently lost his job and was now struggling to find new employment.

(a) State what is meant by the term life event in relation to Malcom.

**(1)**

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.....

.....

(b) State **one** other life event that Malcolm may experience in the future.

**(1)**

.....

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.....

**(Total for Question 11 = 2 marks)**

**12** Andrew and Samira conducted research to investigate the role of religion in the everyday lives of people living away from their friends and family. They gave five people a structured questionnaire, asking them to anonymously record how many times they used religion as a source of support during one month.

**Table 5** shows the results of Andrew and Samira's research.

| Participant | Number of times in one month that religion is used as a source of support | | |
|---|---|---|---|
| | When feeling sad | When feeling worried | When feeling frustrated |
| A | 7 | 4 | 4 |
| B | 5 | 5 | 1 |
| C | 6 | 3 | 3 |
| D | 3 | 4 | 7 |
| E | 10 | 6 | 9 |

**Table 5**

**Space for calculations**

(a) Calculate the **range** for people who use religion as a source of support when feeling frustrated.

**(1)**

Range .....

(b) Calculate the **modal** score for people who use religion as a source of support when feeling worried.

**(1)**

Modal .....

Andrew and Samira decided to research the effects of social support.

(c) State **two** effects of social support that Andrew and Samira may have found in their research.

**(2)**

1 .....

.....

.....

2 .....

.....

.....

(d) Explain **two** ethical considerations that Andrew and Samira may have considered in their research to study the effect of religion as a source of social support.

**(4)**

1 .....

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2 .....

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**(Total for Question 12 = 8 marks)**

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**13** Research has shown that there is a relationship between stress and illness.

**Table 6** shows data for days absent from work in a year and participant scores on a stress questionnaire.

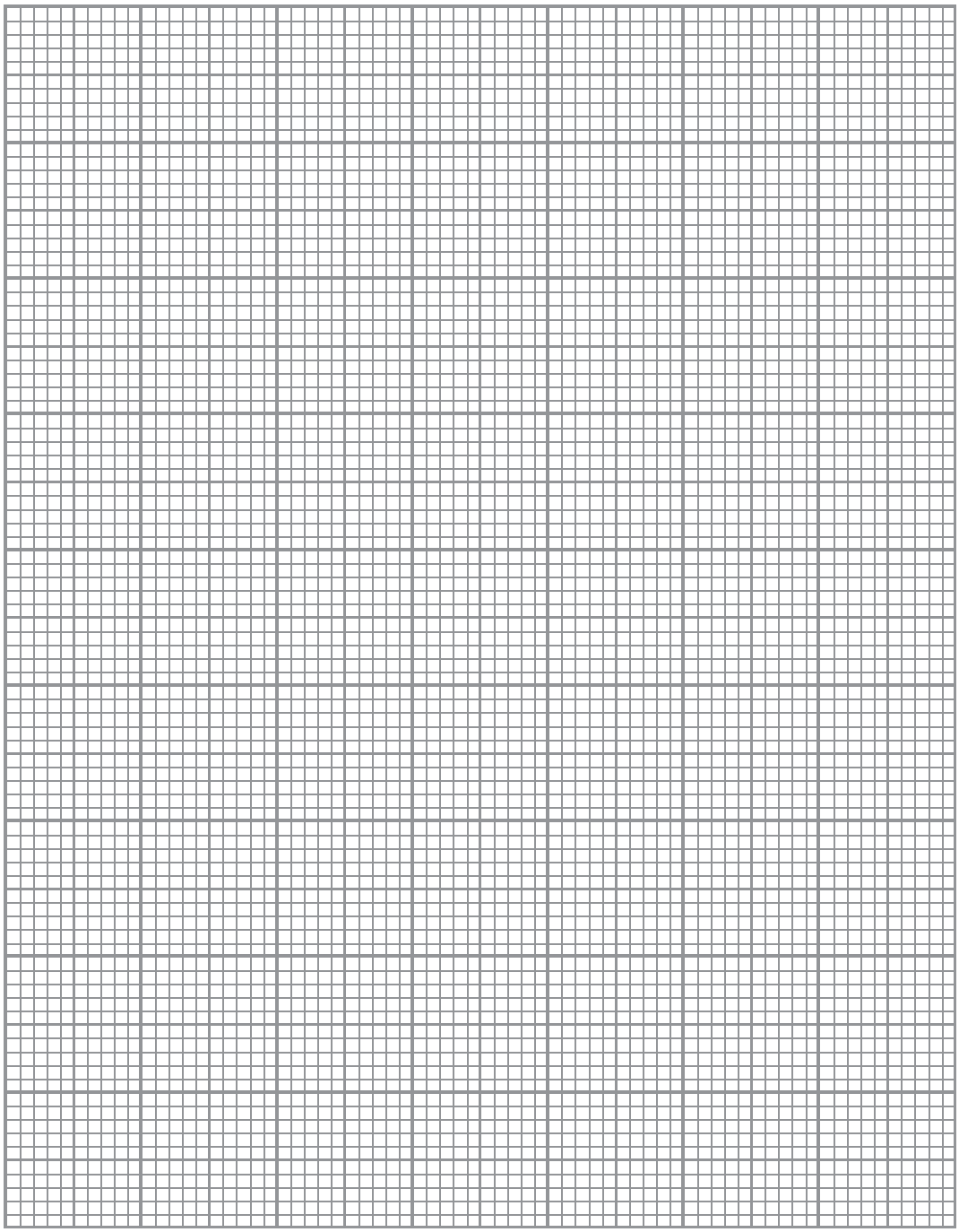
| Number of days absent from work in a year | Stress scores (higher scores indicate more stress) |
|---|---|
| 1 | 25 |
| 2 | 40 |
| 3 | 30 |
| 4 | 50 |
| 5 | 55 |

**Table 6**

(a) Draw a scatter diagram to illustrate the data in **Table 6**.

**(3)**

Title



(b) Andrew and Samira concluded from their data in **Table 6** that the number of days absent from work is related to an individual's stress score.

Explain why Andrew and Samira came to this conclusion.

**(3)**

**(Total for Question 13 = 6 marks)**

**14** Evaluate cognitive behavioural therapy (CBT) as a treatment for anxiety disorders.

**(8)**

**(Total for Question 14 = 8 marks)**

**15** Evaluate Nakonz and Shik's (2009) study.

**(8)**

**(Total for Question 15 = 8 marks)**

**TOTAL FOR SECTION B OPTION 2 = 32 MARKS**
**TOTAL FOR PAPER = 64 MARKS**