Surname	Centre Number	Candidate Number
First name(s)		2

GCE A LEVEL

S25-1290U40-1

1290U40-1

MONDAY, 9 JUNE 2025 – MORNING

PSYCHOLOGY – A2 unit 4
Applied Research Methods

1 hour 30 minutes

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**16**	
2.	**14**	
3.	**17**	
4.	**13**	
Total	**60**	

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ADDITIONAL MATERIALS

You may require a calculator and a ruler.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If further space is required for any question, you should use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

You are reminded of the necessity for good English and orderly presentation in your answers.

Assessment will take into account the quality of written communication used in your answers.

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SECTION A – Personal Investigations

You should answer **all** the questions in this section with reference to the personal investigations carried out in your study of psychology.

INVESTIGATION ONE:

A quasi-experiment on age and sleep.

1. (a) (i) Explain how the independent variable was operationalised in your quasi-experiment. [2]

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(ii) Explain how the dependent variable was operationalised in your quasi-experiment. [2]

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(b) Explain **one** ethical issue you faced during your quasi-experiment and explain how you dealt with it. [4]

(c) (i) Explain **one** issue of validity you considered before conducting your quasi-experiment. [2]

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(ii) Explain **one** way validity could be assessed in your quasi-experiment. [2]

(d) Evaluate **one** strength and **one** weakness of using a quasi-experiment. [2+2]

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INVESTIGATION TWO:

A correlational study involving a Stroop test.

2. (a) State the operationalised alternative hypothesis for your correlational study. [2]

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(b) (i) Identify the graphical representation you used to represent the data for your correlational study. [1]

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(ii) Justify your choice of the graphical representation identified in **2**(b)(i). [2]

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(c) (i) Identify the inferential statistical test you used when analysing the data collected in your correlational study. [1]

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(ii) Fully justify your choice of the inferential statistical test identified in **2**(c)(i) for your investigation. [3]

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(iii) With reference to your observed (calculated) value and critical value, explain which hypothesis you accepted. [2]

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(d) Discuss how **one** change to your correlational study could improve the investigation. [3]

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SECTION B – Application of research methods to novel scenarios

Answer **all** questions.

3. Research has shown that colour can affect mood.

To investigate this, an experiment was conducted in a laboratory using two groups of participants. The hypothesis was 'participants exposed to the colour blue will have a higher mood rating on a scale of 1–5 than participants exposed to the colour red'.

There were 10 participants in Group 1 and 10 participants in Group 2. Group 1 were taken to a room painted blue and were shown 10 images with a blue theme, for example, a picture of the sea. Group 2 were taken to a room painted red and were shown 10 images with a red theme, for example, a picture of a fire engine.

After the participants were shown the images, they were asked to rate their mood on a scale of 1–5 (1 = very bad mood and 5 = very good mood). The results are shown in the table below.

Figure 1: Table of results to show the mood rating of participants.

Participant	Group 1 (blue condition)	Participant	Group 2 (red condition)
A	4	K	2
B	5	L	2
C	4	M	3
D	3	N	1
E	3	O	3
F	5	P	4
G	2	Q	2
H	5	R	2
I	4	S	1
J	3	T	3

(a) The following definition can be used to describe the data collected:

'Data can be placed into ascending or descending order, but the intervals between data are not necessarily equal.'

Identify this level of measurement. [1]

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(b) Evaluate independent groups experimental design. [3]

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(c) (i) Calculate the mean mood rating for the participants in Group 1 (blue condition). Show your workings. [2]

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(ii) Explain why the mean would be an appropriate measure of central tendency of the data in this research. [2]

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(d) The researcher analysed the data using the Mann Whitney U test using a 0.05 probability value. The observed (calculated) value of U was 15. The critical value of U was 27.

Explain which hypothesis the researcher should accept and which hypothesis the researcher should reject. [3]

(e) Explain how **one** confounding variable could affect this investigation. [2]

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(f) Evaluate **one** strength and **one** weakness of conducting research in a laboratory environment. [2+2]

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4. Researchers conducted a questionnaire study to investigate happiness in A Level students. They used a random sample of 50 A Level students from a local Sixth Form College.

An example of one of the questions from the questionnaire study was:
'Describe how studying A Levels affects your happiness levels'.

(a) (i) State whether the example question would generate qualitative or quantitative data. [1]

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(ii) Explain why the example question would produce quantitative or qualitative data. [2]

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(b) Explain how the reliability of this research could be assessed. [2]

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(c) Explain how social desirability could affect the validity of this research. [2]

(d) One of the students, when answering the questionnaire, asked the researchers why they hadn't used an interview to collect the information.

Explain **one** advantage of using an interview rather than a questionnaire. [2]

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(e) Evaluate **one** strength and **one** weakness of using random sampling. [2+2]

END OF PAPER

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