Surname	StemUp Model Solution	Centre Number	Candidate Number
Other Names			2

GCE A LEVEL

1290U40-1

S19-1290U40-1

PSYCHOLOGY – A2 unit 4
Applied Research Methods

FRIDAY, 7 JUNE 2019 – AFTERNOON

1 hour 30 minutes

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**19**	
2.	**11**	
3.	**10**	
4.	**10**	
5.	**10**	
Total	**60**	

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01

INSTRUCTIONS TO CANDIDATES

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

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 you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

You may require a calculator and a ruler.

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:

Experiment on the Chameleon effect.

1. *(a)* (i) State the alternative/experimental hypothesis for your experiment. [3]

Participants will touch their face more often during a 5 minute conversation with a same sex confederate who repeatedly touches their own face than during a 5 minute conversation with an opposite sex confederate who repeatedly touches their own face.

(ii) Identify the independent variable (IV) from your alternative/experimental hypothesis. [1]

The sex of the confederate: same sex or opposite sex to the participant.

(iii) Identify the dependent variable (DV) from your alternative/experimental hypothesis. [1]

The number of times the participant touched their face during the 5 minute conversation.

(b) Discuss the ethical issues you faced when planning your experiment. Explain how you ensured the participants were treated ethically. [10]

Deception and consent: I could not gain fully informed consent, as telling participants the aim (mimicry) would cause demand characteristics. Like Chartrand and Bargh, I told them it was a study of describing photographs with a partner. To deal with this I gained consent for the photograph task, gave them the right to withdraw at any time, and used only mild deception that my teacher judged would not upset them.

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Debrief: straight after the conversation I fully debriefed each participant, explaining the true aim, that the 'partner' was a confederate, and that copying body language is normal and unconscious, so they would not feel embarrassed. I reminded them they could withdraw their data, which I would then destroy.

Choice of participants: to avoid vulnerable individuals I only used sixth form students aged 16 to 18 who could consent for themselves, so no parental consent was needed.

Harm and confidentiality: being secretly observed could cause psychological harm, so I used a relaxed setting, kept data anonymous using participant numbers rather than names, and stored tally sheets securely, following the BPS Code of Ethics and Conduct (respect, competence, responsibility, integrity) throughout.

My teacher checked and approved my plan before I started, so the benefits of the study outweighed the small risks to participants.

(c) Discuss how you assessed reliability in your experiment. [4]

I assessed inter-rater reliability. Two observers, myself and a trained friend, independently tallied how many times each participant touched their face using the same operationalised behaviour checklist. I correlated our tallies using Spearman's rho and found a correlation above +0.8, so the observations were consistent and reliable.

I also used a standardised procedure: the same photographs, instructions, room and confederates for everyone, and the confederates practised touching their face every 30 seconds, so the experiment could be replicated.

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INVESTIGATION TWO:

Questionnaire on relationships.

2. *(a)* State **one** finding from your investigation. [2]

My aim was to see if males and females differ in what they look for in a partner. One finding was that females rated 'sense of humour' as more important than males did (mean 8.2 v 6.4 on a 1 to 10 rating scale).

(b) State the sampling method you used and explain how you collected your participants. [3]

I used opportunity sampling. I went into the sixth form common room during a free period and asked the students who were there and available at that time (aged 16 to 18) if they would complete my questionnaire on relationships, until I had 10 males and 10 females who agreed to take part.

(c) Suggest **two** ways you could improve your investigation. [3+3]

Firstly, I could use random sampling: put the names of all sixth form students into a computer randomiser to select 20. Every student would have an equal chance of selection, reducing researcher bias in who I approached and making the sample more representative of all sixth formers, so the findings would generalise better and be more reliable if the questionnaire was repeated.

Secondly, I could add open questions, e.g. 'Describe the qualities you look for in a partner and why'. My closed rating scales only gave quantitative data; open questions give rich qualitative data explaining why males and females differ, increasing validity. I would pilot the questions first to remove unclear wording, and make answers anonymous to reduce socially desirable answers.

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SECTION B – Application of research methods to novel scenarios

Answer **all** *questions.*

3. A psychologist investigated the number of words correctly recalled by an individual recovering from a brain injury. The individual was selected using an opportunity sample of patients admitted to a local hospital with a brain injury. Using a case study, the researcher recorded the number of words the individual could correctly remember from a list of ten words presented one month after the brain injury and presented again six months after the brain injury. The psychologist recorded the results in the table below.

Table with the words correctly recalled one month after brain injury and six months after brain injury.

Words correctly recalled one month after brain injury.	Words correctly recalled six months after brain injury.	
Dog	Dog	Pencil
Ball	Ball	Hospital
Door	Door	Cardigan
	Desk	
	Apple	

(a) State and explain **three** changes that could be made to improve this research. [2+2+2]

In your answer you could include:

- Choice of sample.
- Research method.
- Any other appropriate improvement.

Sample: study several patients with the same type of brain injury (e.g. hippocampal damage) instead of one individual selected by opportunity, chosen randomly from hospital admission records. Results would be less influenced by one person's characteristics (e.g. age or intelligence), so findings would be more generalisable to all brain injuries.

Research method: use a quasi experiment comparing the patient(s) with a control group of matched people with no brain injury, so it is clear whether recall is low because of the injury rather than normal memory ability.

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Other: use a different but matched list of ten words at six months. Using the same list both times may have caused practice effects, so improvement (3 to 8 words) may be due to learning, not recovery. Also present the list in a standardised way (same speed, same room) each time.

(b) Suggest another task that could be completed by the individual recovering from a brain injury and explain how this would increase the validity of the results. [4]

The individual could complete a digit span test, recalling sequences of numbers that get longer, at 3 months and at 12 months after the injury. This measures a different type of material and memory capacity, so it checks whether recovery applies to memory in general and not just to the word list. Testing at more points with new number sequences avoids practice effects, so any improvement more validly reflects recovery from the brain injury.

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4. It has been argued by academics that males are more aggressive than females. Research on human aggression, however, can lead to many ethical issues.

(a) (i) Suggest and explain a way to investigate the above argument and operationalise aggression. [4]

A naturalistic observation of 20 boys and 20 girls aged 7 to 8 in a school playground at lunchtime. Aggression is operationalised in a behavioural schedule as hitting, kicking, pushing (physical) and name calling or threats (verbal). Two observers would use time sampling, ticking any aggressive act every 30 seconds for 10 minutes per child, and compare the total aggression scores of males and females to test whether males are more aggressive.

(ii) With reference to the above argument and your suggestion from *(a)* (i), explain **two** ways you could ensure that the research is ethical. [3+3]

Protection from harm: no aggression would be provoked or modelled (unlike Bandura's Bobo doll study); we would only observe behaviour that happens naturally in the playground. If a child was hurt or the hitting or pushing became serious, observers would stop recording and alert the supervising staff straight away, so no child is harmed.

Consent: the children are under 16, so I would get informed consent from the head teacher and the parents of the 40 children, explaining that aggressive behaviour will be observed and compared between boys and girls. Parents could withdraw their child at any time, and data would be anonymous (Child 1, Child 2), not named.

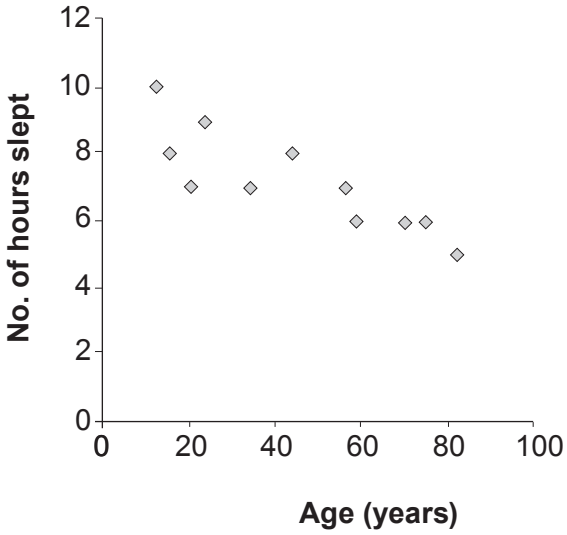
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5. A psychologist conducted a correlation between age and the amount of sleep. The psychologist asked an opportunity sample of friends and family members to estimate the amount of sleep they had during the previous night, to the nearest hour. The psychologist also noted their age in years. The data was plotted on the scatter diagram below.

Scatter diagram to demonstrate the correlation between age and the amount of sleep



(a) Justify the psychologist's use of a scatter diagram to display these results. [2]

A scatter diagram shows the relationship between two co-variables, age and hours slept. It lets the psychologist see the direction and strength of the correlation: a negative correlation, as age increases sleep decreases.

(b) (i) Give **one** reason why a Wilcoxon matched pairs signed ranks test would be an incorrect choice of test to analyse the data in this piece of research. [1]

Wilcoxon is a test of difference for related data, but this research is a correlation.

(ii) State which test would be more appropriate for this data. [1]

Spearman's rho (rank order correlation coefficient).

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(c) Identify an extraneous variable that could affect this piece of research. [2]

Estimation of sleep: participants only estimated their sleep to the nearest hour, so their answers may be inaccurate (e.g. an older person over or under estimating), affecting the hours of sleep recorded.

(d) Identify and explain **one** issue of validity that could affect this study. Suggest a way to improve this. [4]

Content validity: the measure of sleep is a self reported estimate of one night, which may not accurately measure how much people normally sleep. Friends and family may also give socially desirable answers. One night may be untypical (e.g. a late party), so the correlation with age may not be valid.

To improve this, each participant could wear a sleep tracker (or keep a sleep diary) for one week, giving an objective, more accurate average of hours slept to correlate with age.

END OF PAPER

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