

## Inferential Testing (A2 Only) - Mark Scheme

### Q1.

(a) [AO2 = 2]

**1 mark** – because it is collected from participants directly/first hand

**Plus**

**1 mark** – rather than gathered from reports of previous research

(b) [AO3 = 3]

**3 marks** for clear statement of a strength coherent elaboration

**2 marks** for statement of a strength some elaboration

**1 mark** for vague/muddled strength

**0 marks** for no relevant material

**Possible strengths**

- Data gathered is more likely to be focused on the purpose of the research
- Less peripheral/redundant information
- Control issues – first hand data can be controlled whereas secondary data may have been gathered under differing conditions

Credit other relevant strengths.

(c) [AO3 = 4]

**1 mark** Mann Whitney test

**Plus**

**3 marks** for justification – **1 mark** for **each** of the following:

- Testing for a difference
- Independent design – different participants in each condition
- Data assumed to be ordinal ie not fixed intervals (also credit data is assumed to be non-parametric)

### Q2.

(a) [AO3 = 2]

**1 mark** for a brief explanation

**Plus**

**1 mark** for elaboration

**Possible content:**

Control for individual differences so that the researcher can be more certain that the effect is not due to characteristics such as gender, personality etc.

Credit other relevant advantages.

(b) **[AO2 = 2]**

**1 mark** - Value of 'S' is 2.

**Plus**

**1 mark** for explanation - 'S' is the frequency of the least common difference. There are 8 positive differences, 2 negative differences and 2 ties.

(c) **[AO2 = 2]**

**1 mark** for identifying the correct value of N (N = 10, total number of differences)

**Plus**

**1 mark** for stating that for an N of 10, a value of 'S' = 2 is not significant at the  $p \leq .05$  level.

**Q3.**

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

(a) **AO2 / AO3 = 4**

Up to four marks are awarded for discussing advantage(s) of using a laboratory experiment in this case.

The most likely advantages of the laboratory setting in this experiment include:

- Control over extraneous variables. The lab setting meant that extraneous variables could be minimised. In this experiment, outside factors such as waiting time, noise and stress (which would be difficult to control in a field experiment) were removed.
- Ethical issues. In this case, the testing of memory in a field experiment would have involved ethical issues including deception of patients or withholding of information.

Candidates may also refer to other advantages of the laboratory setting such as replicability. These can receive full credit if they contextualised within the scenario.

Award four marks for an answer which provides accurate and detailed discussion of relevant advantage(s) with a clear link to the scenario.

Award two or three marks for an answer which includes discussion of relevant advantage(s), with some reference to the scenario.

Award one mark only for an answer which merely identifies one or more relevant advantage(s) of a laboratory experiment appropriate to this scenario.

Advantages of laboratory experiments which are not relevant to this study cannot gain any credit eg use of technical equipment.

(b) **AO2 / AO3 = 2**

- One mark for correctly identifying the Mann Whitney U test or independent t test.
- One mark awarded for an accurate reason for choice (for Mann Whitney these are: test of difference, independent groups design / independent data or data which can be treated at an ordinal level).

#### **Q4.**

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

(a) **AO2 / 3 = 1**

1 mark for correct answer – directional (one-tailed is acceptable).

(b) **AO2 / 3 = 3**

1 mark for correctly stating that the result is significant.

2 further marks for an explanation: the calculated value of  $T = 53$  which is less than the value of 60 where  $N = 20$  and  $p \leq 0.05$  for a one-tailed test.

If the candidate states that the result is not significant, no marks can be awarded.

#### **Q5.**

(a) **[AO2 = 2]**

**1 mark** for identifying the type of data as quantitative data.

**Plus**

**1 mark** for either of the explanations below:

- the data is numerical.
- the number of participants who completed the questionnaire in each condition.

**OR**

**1 mark** for explaining the type of data as primary data.

**Plus**

**1 mark** for either of the explanations below:

- the data is collected first hand (directly) from the participants.
- data is collected for the purpose of the investigation.

**OR**

**1 mark** for explaining the type of data as nominal/categorical data.

**Plus**

**1 mark** for either of the explanations below:

- the data is presented in categories/is discrete.
- the number of participants who did and did not complete the questionnaire in each condition.

If students identify more than one type of data, take the first type as the basis for their answer. If the data is not identified or identified incorrectly, no credit can be given for an explanation.

(b) **[AO2 = 3]**

**1 mark** for the likely outcome: more participants in condition 1 will complete the questionnaire than in condition 2/fewer participants in condition 2 will complete the questionnaire than in condition 1.

**Plus**

**2 marks** for clear and coherent explanation

**1 mark** for explanations that are limited or muddled or for explanations not linked to outcome

**0 marks** for an incorrect or irrelevant explanation

**Possible content:**

- accept reference to normative social influence – participants will follow the majority to avoid rejection/fit in
- the participants in condition 2 experienced social support/disobedient role models and so were more likely to defy the researchers
- accept reference to diffusion of responsibility/increased confidence to defy orders in condition 2
- accept explanation based on relevant studies, eg Asch variations.

Credit other relevant social influence explanations.

(c) **[AO3 = 4]**

**1 mark** for random allocation of participants to each condition.

**Plus**

**3 marks** for explanation of how this could be conducted in this experiment

**1 mark** for each bullet

- each participant is assigned a number or identified by name
- the numbers/names are placed into a random number generator/hat/lottery method
- the first participant drawn is assigned to condition 1, the second to condition 2, etc. OR the first 15 participants are assigned to condition 1 and the next 15 are assigned to condition 2.

**OR**

**1 mark** for using a matched pairs design.

**Plus**

**3 marks** for explanation of how this could be conducted in this experiment

**1 mark** for each bullet

- participants should be matched on a variable that is relevant to the experiment
- this could be ascertained through the use of a pre-test e.g. completing a confidence questionnaire
- participants from each matched pair are allocated to different conditions.

Credit other plausible ways of addressing the question. To gain any credit answers based on repeated measures should be appropriately detailed e.g. parallel versions of the questionnaire, time lapse etc.

(d) **[AO2 = 2]**

**1 mark** for the design is unrelated/independent groups/independent data

**1 mark** for the researcher is looking for a difference (between two conditions/sets of data) **or** an association/relationship (between two variables).

No credit for answers referring to correlations.

(e) **[AO2 = 2]**

**1 mark** for stating that the value of chi squared is significant (at the 5% level).

**Plus**

**1 mark** for explanation:

the calculated/observed value (3.97) is more than/exceeds the critical/table value of 3.84/at 5%.