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# Student responses with examiner commentary

A-level Psychology 7182/2 (Specimen Material Second Set)  
Paper 2 Psychology in Context

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[First teaching: September 2015]

[First Examination: Summer 2017]

## Introduction

These resources should be used in conjunction with the Specimen Assessment Material (7182/2) from the AQA website. This document illustrates how examiners intend to apply the mark scheme in live papers. The question papers will be marked using a levels of response mark scheme. These answers and the accompanying commentaries have been produced to help you understand what is required to achieve the different levels and how the mark scheme is to be interpreted. These principles of marking apply across all papers.

While every attempt has been made to show a range of student responses, the following responses, and examiner comments provide teachers with the best opportunity to understand the application of the mark scheme. Responses have not been produced for every question but rather cover a variety of different types of questions and topic areas.

\*Please note that the students' responses have been typed exactly as they were written.

## QUESTION

02 Referring to Bradley's experiences, explain the role of mediational processes in learning.

[4 marks]

## MARK SCHEME

Marks for this question: AO2 = 4

| Level | Marks | Description  |
|-------|-------|--|
| 2     | 3–4   | The role of mediational processes relevant to Bradley's situation is clear and mostly accurate. The material is used appropriately to explain Bradley's experiences. The answer is generally coherent with effective use of specialist terminology.                        |
| 1     | 1–2   | The role of mediational processes relevant to Bradley's situation is evident. The material is not always linked explicitly or effectively to Bradley's experiences. The answer lacks accuracy and detail. Use of specialist terminology is either absent or inappropriate. |
|       | 0     | No relevant content.   |

### Possible content:

Credit mediational processes relevant to Bradley's situation eg

- mental/cognitive processes occur between stimulus (Bradley's observation) and response (Bradley's copying the behaviour)
- specific examples here are: attention, motivation, retention/memory, assessment of own ability
- Bradley is motivated to attend to the relevant information (is keen to play well)
- Bradley pays attention to the actions of the person he wants to copy (watches carefully)
- Bradley tries to remember the action so he can do the same (thinks about how he was holding the cue)
- Bradley considers his own ability to perform (thinks...whether he can do the same.)

Credit other relevant information.

Exemplar response:

Attention – he watches carefully what his partner does; Motivation – he is very keen to play well; retention – he remembers what his partner did and tries to copy it. Finally, reproduction – he thinks about this specific behaviour and considers whether or not he has the capability to produce it.

### Examiner commentary

This is a Level 2 response. The role of mediational processes is evident although the processes could be explained more fully. For example, it could be explained that 'attention', 'motivation' etc. are mediational processes. The processes are applied to Bradley's situation in a clear way and the answer uses specialist terminology effectively.

Mark awarded = 3

## QUESTION

03 Describe Wundt's role in the development of psychology

[6 marks]

## MARK SCHEME

Marks for this question: AO1 = 6

| Level | Marks | Description  |
|-------|-------|--|
| 3     | 5–6   | Knowledge of Wundt's role in the development of psychology is generally accurate and mostly well detailed. The answer is clear and coherent. Specialist terminology is used effectively.         |
| 2     | 3–4   | Knowledge of Wundt's role in the development of psychology is evident. There are some inaccuracies. There is some appropriate use of specialist terminology.                                     |
| 1     | 1–2   | Knowledge of Wundt's role in the development of psychology is limited and lacks detail. There is substantial inaccuracy/muddle. Specialist terminology is either absent or inappropriately used. |
|       | 0     | No relevant content.   |

### Possible content:

- Wundt known as 'the father of psychology' – moved from philosophical roots to controlled research
- Set up the first psychology laboratory in Leipzig, Germany in 1870s
- Promoted the use of introspection as a way of studying mental processes
- Introspection – systematic analysis of own conscious experience of a stimulus
- An experience was analysed in terms of its components parts eg sensations, emotional reaction etc.
- His work paved the way for later controlled research and the study of mental processes eg by cognitive psychologists.

Credit other relevant information.

### Exemplar response:

He was one of the first scientists to take psychology seriously and study the subject in a scientific way, rather than in the philosophical way it had been studied previously. He was one of the first to try and study psychology in a lab using introspection.

### Examiner commentary

This is a Level 2 response. The answer is very brief although there is some knowledge of Wundt's role in the development of psychology and some appropriate use of specialist terminology. To gain further marks the answer needs further expansion, e.g. by explaining 'introspection' and how this was studied in a scientific manner.

Mark awarded = 3

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## QUESTION

**04** Briefly explain **one** strength and **one** limitation of the cognitive approach in psychology.

**[4 marks]**

## MARK SCHEME

**Marks for this question: AO3 = 4**

### Strength:

**1 mark** for identification of a strength

Plus

**1 mark** for explanation/elaboration eg why it is a strength of the cognitive approach.

### Limitation:

**1 mark** for identification of a limitation

Plus

**1 mark** for explanation/elaboration eg why it is a limitation of the cognitive approach.

Likely strengths: control/objectivity in research; use of models for ease of understanding; links to neuroscience and consequent applications

Likely limitations: still requires inferences about cognitive processes; mechanistic approach to understanding human behaviour

Exemplar response:

Strength = creation of models, such as multi store model of memory, allows complex subjects to be studied in a scientific way. Allows experiments to be carried out in order to test these models.

Limitation = the information-processing metaphor that is the basis for the cognitive approach (human as machine) ignores the role of emotion.

## Examiner commentary

The identification and explanation of a strength is appropriate and gains both marks. The limitation is appropriate but there is no real explanation of why ignoring the role of emotion is a limitation and this only gains one mark.

**Mark awarded = 3**

## QUESTION

**05** Outline the psychodynamic approach in psychology. Discuss **one or more** differences between the psychodynamic approach and the humanistic approach.

**[8 marks]**

## MARK SCHEME

**Marks for this question: AO1 = 3 and AO3 = 5**

| Level | Marks | Description  |
|-------|-------|--|
| 4     | 7-8   | Outline of the psychodynamic approach is generally accurate. Discussion of difference(s) is thorough and effective. Answer is clear, coherent and well focused. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking.   |
| 3     | 5-6   | Outline of the psychodynamic approach is evident. There are occasional inaccuracies. Discussion of difference(s) is apparent and mostly effective. The answer is mostly clear and organised. Specialist terminology mostly used effectively. Lacks focus in places.        |
| 2     | 3-4   | Outline of the psychodynamic approach is present. Focus is mainly on description. Any discussion of difference(s) is only partly effective. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.       |
| 1     | 1-2   | Outline of the psychodynamic approach is very limited. Discussion of difference(s) is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used. |
|       | 0     | No relevant content.   |

### Possible content – outline:

- The concept of the unconscious and role of unconscious in behaviour
- Tripartite structure of the personality – id, ego, superego
- Psychosexual stages of development
- Conflicts – Oedipus and Electra
- Defence mechanisms
- Psychodynamic approach to therapy – psychoanalysis

### Possible differences - discussion:

- Negativity of Freud in relation to the positive outlook of humanistic psychology
- Emphasis on repressed thoughts and emotions, and past experiences (Freud) versus emphasis on subjective experience of the present and personal growth in the future
- Emphasis on unconscious drives/motives versus conscious awareness and experience
- Psychic determinism (Freud) versus free will and rational choice
- Directive versus non-directive approach to therapy

Not all of this is necessary for full credit.

Credit other relevant information.

**Exemplar response:**

Based on the tripartite structure of personality, with the id (unconscious and instant gratification) the ego (operating on reality principle) and super ego (operating on morality principle and unconscious). All behaviour stems from an interplay of these 3. Also psycho-sexual stages of development and whether or not fixation occurs in different stages. The ego can use defence mechanisms to protect itself from the unresolved conflicts with the unconscious. Main difference is the emphasis here is on psychic determinism, while humanistic approach believes as free will. Similarly Freud believed that it was experiences from childhood and the past that affected current behaviour, while humanists believe in the subjective experience of the present. Lastly Freud had a fairly negative view of human behaviour, unlike the very positive view of humanism.

**Examiner commentary**

This is a Level 2 response. There is knowledge of the psychodynamic approach but this is left for the reader to infer and it would be clearer if this answer related the psychodynamic concepts to the approach in an overt way. This could easily be done by stating at the very beginning – “The psychodynamic approach is based on ...”

In addition, the differences are appropriate but need a little explanation rather than simply being stated. For example – “the emphasis here is on psychic determinism” does not state that psychic determinism underpins the psychodynamic approach (again this is left to the reader to infer). Additionally, there is no explanation of ‘psychic determinism’ and how this differs from the Humanistic belief in free will.

This is a response that contains enough knowledge to gain full marks but has not used the material effectively and discursively enough to answer the question set. The answer reads more like a set of notes rather than an extended answer.

**Mark awarded = 4**

## QUESTION

06 Outline the role of adrenaline in the fight or flight response.

[4 marks]

## MARK SCHEME

Marks for this question: AO1 = 4

| Level | Marks | Description   |
|-------|-------|---|
| 2     | 3–4   | Knowledge of the role of adrenaline in the fight or flight response is clear and mostly accurate.   |
| 1     | 1–2   | Knowledge of the role of adrenaline in the fight or flight response is incomplete/partly accurate. For 1 mark there may be some detail of direct or general effects but not explicitly linked to fight or flight. |
|       | 0     | No relevant content.  |

### Possible content

- Adrenaline is released from the adrenal medulla in response to activation of the sympathomedullary pathway.
- Adrenaline has a range of effects on the body
- Direct effects of adrenaline
  - increase heart rate
  - constricts blood vessels, increasing rate of blood flow and raising blood pressure
  - diverts blood away from the skin, kidneys and digestive system
  - increases blood to brain and skeletal muscle
  - increases respiration and sweating
- The general effects of adrenaline
  - prepare the body for action, fight or flight,
  - increase blood supply/oxygen, to skeletal muscle for physical action
  - increase oxygen to brain for rapid response planning

Up to 2 marks for accurate detail of the effects of adrenaline on the body eg outline of two different effects, or detailed account of one effect. 2 further marks for an account of the role of adrenaline in the fight or flight response ie providing a context for the various effects of adrenaline on the body (eg last two bullets).

Exemplar response:

Once hypothalamus has perceived “stressor”, the adrenal medulla is stimulated to release adrenaline into the blood stream. This has a whole range of different effects on the body, such as getting it ready for flight or fight. This includes causing the heart to beat faster, pumping blood round the body faster, especially to the brain. Also increased respiration, allowing more oxygen to be available to the brain so it can respond very quickly to the “stressor”.

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### **Examiner commentary**

This is a Level 2 response. Knowledge of the role of adrenaline in the fight or flight response is clear and although there are other effects of adrenaline that could have been outlined, this is just enough to gain the marks.

**Mark awarded = 4**



## QUESTION

- 07** Discuss how knowledge of hemispheric lateralisation and language centres in the brain has helped our understanding of cases such as Robert's. Refer to Robert's case in your answer.

**[16 marks]**

## MARK SCHEME

**Marks for this question: AO1 = 6, AO2 = 4 and AO3 = 6**

| Level | Marks | Description   |
|-------|-------|---|
| 4     | 13–16 | Knowledge of hemispheric lateralisation and language centres in the brain is accurate and generally well detailed. Discussion is thorough with effective reference to cases of aphasia. Answer is clear, coherent and focused. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking. |
| 3     | 9–12  | Knowledge of hemispheric lateralisation and language centres in the brain is evident. There are occasional inaccuracies. Discussion is apparent and reference to cases of aphasia is mostly effective. The answer is mostly clear and organised. Specialist terminology mostly used effectively. Lacks focus in places.                 |
| 2     | 5–8   | Some knowledge of hemispheric lateralisation and language centres in the brain is present. Focus is mainly on description. Any discussion and reference to cases of aphasia is only partly effective. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.          |
| 1     | 1–4   | Knowledge of hemispheric lateralisation and language centres in the brain is limited. Discussion is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used.  |
|       | 0     | No relevant content.  |

### Possible content

- Systematic research from Wernicke and Broca onwards has demonstrated that in most people language centres are lateralised to the left hemisphere
- Wernicke's area seems to be responsible for the interpretation of speech – damage leads to receptive or sensory aphasia
- Broca's area was thought to be responsible for the production of speech this is now thought to involve a wider network than just Broca's area – damage leads to production (expressive) or motor aphasia

### Possible application

- The presence of a right sided paralysis confirms that in cases such as Robert's there is lateralised damage to the left hemisphere
- Robert, can understand speech so we conclude that he does not have Wernicke's, receptive, aphasia; caused by damage to Wernicke's area in the left hemisphere.
- Robert cannot produce speech so we conclude that Broca's area has been damaged leading to Broca's, production or expressive aphasia.

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### Possible discussion

- As language centres are lateralised they can be impaired by damage to the left hemisphere, not to the right. The left hemisphere also controls the muscles of the right side of the body therefore, when brain damage leads to speech problems combined with paralysis of body muscles, it is usually a right sided paralysis
- Damage to Broca's area can lead to production/expressive aphasia combined with right sided paralysis
- Damage to Broca's and Wernicke's areas may lead to global aphasia (inability to understand or to produce speech), combined with right sided paralysis
- Use of research evidence to support explanation
- Problems associated with different types of research evidence

#### Exemplar response:

Wernicke's area – interpretation of speech not damaged in Robert. Broca's area – production of speech has been damaged in Robert.

Both in left hemisphere and as he's paralysed in right side, would suggest some damage to left hemisphere. (left hemi controls muscles on right hand side body)

However it is not so simple. Not all research agrees on such specific localisation e.g. Lashley points to the extent of damage rather than location. There are also individual differences – Harasty et al found that women had larger Broca's and Wernicke's area. It has also been suggested other areas, not just Broca's area could be implicated in disruption of production speech

#### Examiner commentary

This is a Level 1 response. There is knowledge of hemispheric lateralisation and language centres in the brain but this is limited. There is some poorly focused discussion and a brief application to the stem. The answer as a whole lacks clarity and is poorly organised. Specialist terminology is used appropriately on occasions but due to the brevity of the answer any specialist language is limited.

**Mark awarded = 4**

## QUESTION

**08** Explain **one** problem with the design of this study and suggest ways of dealing with this problem.

**[4 marks]**

## MARK SCHEME

**Marks for this question: AO3 = 4**

| Level | Marks | Description   |
|-------|-------|---|
| 2     | 3–4   | Explanation of problem and way of dealing with it is clear and mostly appropriate. The answer is generally coherent with effective use of specialist terminology.   |
| 1     | 1–2   | Some explanation of problem and/or appropriate way of dealing with it. The answer lacks accuracy and detail. Use of specialist terminology absent or inappropriate. |
|       | 0     | No relevant content.  |

## Possible content

- Problem – random sampling; the 3 pm group might simply have been better at maths than the 3 am group. The solution would be a matched pairs (matched on maths ability) or repeated measures design.
- Problem – use of different maths tests, with no evidence that they were matched for difficulty. The solution would be to use the same set of maths problems if a matched pairs design was used.
- Individual differences due to independent groups design so use repeated measures but would need different but equivalent tests and counterbalancing.
- Other issues, such as individual differences in biological rhythms ('owls' versus 'larks') confounding results. Such answers should be marked on their merits – is the problem plausible and is the solution sensible?

## Exemplar response:

Independent groups design – problem is participant variables, one group (eg the 3pm group) might just be better at maths, rather than it be due to time of day. Deal with by using repeated measures design (same participants in both conditions); but would have to counter-balance and make sure that the two different maths tests were of equivalent standard.

## Examiner commentary

This is a Level 2 response. The explanation of a problem and an appropriate way of dealing with it is clear. The answer is generally coherent and uses specialist terminology effectively.

**Mark awarded = 4**

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## QUESTION

**09** Should the hypothesis be directional? Explain your answer.

**[2 marks]**

## MARK SCHEME

**Marks for this question: AO2 = 2**

**2 marks** for explanation that a non-directional hypothesis is suitable or 'it should not be directional,' (1) as there is no reference to evidence that allows the researchers to prediction the direction of the results (1).

**1 mark** for a muddled/limited explanation of why the hypothesis should be non-directional or

**1 mark** for stating non-directional.

Exemplar response:

Non-directional because has there been any previous research?

## Examiner commentary

There is a mark for suggesting a non-directional hypothesis but the explanation is limited and not enough to gain the second mark.

**Mark awarded = 1**

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## QUESTION

10 Write a suitable hypothesis for this investigation.

[3 marks]

## MARK SCHEME

**Marks for this question: AO2 = 3**

**3 marks** for an appropriate non-directional operationalised hypothesis:

‘There is a relationship between the map reading scores and the driving error ratings of motorists’.

**2 marks** for a non-directional statement with both key variables that lacks clarity or has only one variable operationalised.

**1 mark** for a muddled statement with some reference to variables.

**0 marks** for expressions of aim/questions/causal statements or statements with only one condition.

Full credit can be awarded for a hypothesis expressed in a null form.

Exemplar response:

There will be a relationship between map reading scores and driving scores.

## Examiner commentary

This is an appropriate non-directional statement with both key variables but lacks clarity on one variable. ‘Driving scores’ is not sufficiently operationalised – it should be ‘driver rating scores’ (of motorists).

**Mark awarded = 2**

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## QUESTION

- 11 Identify a suitable graphical display for the data in **Table 1** and briefly explain why this display would be appropriate.

[2 marks]

## MARK SCHEME

**Marks for this question: AO2 = 2**

1 mark for stating scattergraph or scattergram.

Plus

1 mark for explanation – because it shows a relationship between two variables.

Exemplar response:

Scattergram – because this is appropriate when looking at a correlation and illustrating a relationship between two variables.

## Examiner commentary

This response gains both marks as the answer correctly identifies ‘scattergram’ and the explanation is appropriate.

**Mark awarded = 2**

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## QUESTION

**12** Using the data in **Table 1**, comment on the relationship between the map reading scores and the driver rating scores of the participants.

**[3 marks]**

## MARK SCHEME

**Marks for this question: AO2 = 3**

### Possible content

- General pattern - if a participant scored highly on the map reading task then they are also rated highly on the practical driving task, (or vice versa)
- This suggests a person who has good map reading ability also has good driving skills so these spatial abilities are (positively) related/correlated

Accept other relevant comments

Exemplar response:

The relationship shows that a high score on map reading is related to a high driver rating score. (which actually means they made fewer mistakes)

### Examiner commentary

This response indicates a basic understanding of the general pattern in the data but has failed to expand on the answer.

**Mark awarded = 1**

## QUESTION

- 13 Briefly outline **one** problem of using a single trained observer to rate the participants' driving skills in the practical task. Briefly discuss how this data collection method could be modified to improve the reliability of the data collected.

[6 marks]

## MARK SCHEME

Marks for this question: AO2 = 2 and AO3 = 4

| Level | Marks | Description  |
|-------|-------|--|
| 3     | 5–6   | Outline of the problem is clear and coherent. Discussion of how the method could be modified is appropriate and effective. The answer is clear and coherent. Specialist terminology is used effectively. One modification in detail can access this level. |
| 2     | 3–4   | Outline of the problem is clear. Discussion of how the method could be modified is mostly appropriate and effective. There is some appropriate use of specialist terminology.  |
| 1     | 1–2   | Outline of the problem is vague/muddled. Discussion of how the method could be modified either lacks detail or is muddled. Specialist terminology is either absent or inappropriately used.  |
|       | 0     | No relevant content.   |

### Possible problems:

- Researcher bias – using one observer means objectivity/reliability/validity cannot be checked

### Possible modifications:

- Increasing the number of observers of the driving task because then the data is less subject to individual bias – the observations could then be correlated
- Recording the driver performance so that the data is not lost but can be reviewed as often as required.

Credit other relevant information.

### Exemplar response:

Having just one observer means data might not be accurate, the observer might be biased or simply miss some details of the driver's performance. To improve reliability, have more than one observer collecting the data, then correlate their findings (inter-observer reliability).

### Examiner commentary

This is a Level 2 response. There is an appropriate problem identified (researcher bias) and the improvement would be suitable. The answer just needs further discussion, for example, what would one expect to find from the correlation to establish inter-observer reliability and rule out researcher bias?

**Mark awarded = 3**



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## QUESTION

14 The researchers decided to analyse the data using a Spearman's rho test. Explain why this is a suitable choice of test for this investigation.

[3 marks]

## MARK SCHEME

Marks for this question: AO2 = 3

### Possible content:

- The test determines the strength of a relationship between two variables which is what the researchers were looking for in their initial aim
- The data are in related pairs
- The variables under test are both ratings measured at the ordinal level.

Credit other relevant information

### Exemplar response:

- this is the test used to analyse a correlation ie two variables for each participant.
- the level of measurement for the map reading is not interval level of measurement so couldn't use Pearson's test

### Examiner commentary

The response correctly explains 'related pairs'. The level of measurement for one variable is identified as not 'interval' but there is nothing on the other variable, and it is not explained that the data would be considered as 'ordinal'.

Mark awarded = 1

## QUESTION

- 15 Using the information in **Table 2** above, what conclusion can the researchers draw about the relationship between the map reading and driving skills of the motorists? Explain your answer.

[4 marks]

## MARK SCHEME

Marks for this question: AO2 = 2 and AO3 = 2

| Level | Marks | Description  |
|-------|-------|--|
| 2     | 3–4   | Explanation of an appropriate conclusion for this study is clear and mostly accurate. There is appropriate justification of the conclusion with reference to the critical values table. The answer is generally coherent with effective use of specialist terminology. |
| 1     | 1–2   | Some explanation of an appropriate conclusion is evident. There may be some justification of this with reference to the critical values table. The answer lacks accuracy and detail. Use of specialist terminology is either absent or inappropriate.                  |
|       | 0     | No relevant content.   |

### Possible content:

#### Conclusion

- The null hypothesis should be rejected and the alternative hypothesis accepted
- There is a significant (positive) relationship between the map reading ability and the driving ability of the participants
- Drivers who are skilled at map reading are also skilled at driving

#### Justification

- This relationship is a strong positive one as the calculated value of  $r_s$  of 0.808 exceeds the critical value for a two tailed test at  $p=0.05$  where  $n=9$  of 0.700.

#### Exemplar response:

Since 0.808 is greater than 0.700 at  $p = 0.05$  and a two-tailed test, they can accept their hypothesis. There is a strong positive correlation between map reading and skilled driving. They can confidently (95%) reject their null hypothesis.

### Examiner commentary

This is a Level 2 response. There is a clear conclusion with justification and the answer is coherent with appropriate use of terminology. It would be enhanced if it was explained, in the conclusion to this study, what a strong positive correlation between map reading and driving means - i.e. drivers who are skilled at map reading are also skilled at driving.

**Mark awarded = 3**

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## QUESTION

16 Distinguish between a Type I error and a Type II error.

[4 marks]

## MARK SCHEME

**Marks for this question: AO1 = 4**

1 mark each for a correct definition of both a Type I and a Type II error

Plus

Up to 2 marks for a clear distinction between these two errors.

### Possible content:

- A Type I error occurs when a researcher claims support for the research hypothesis with a significant result when the results were caused by random variables
- A Type II error occurs when the effect the researcher was attempting to demonstrate does exist but the researcher claims there was no significance in the results/erroneously accepts the null hypothesis
- The difference is that in a Type I error the null hypothesis is rejected when it is true and in a Type II error it is retained when it is false.

Exemplar response:

Type 1 = accept experimental hypothesis when in fact it should be rejected as the results occurred due to chance.

Type 2 = reject experimental hypothesis when in fact it should have been accepted as having occurred due to the IV altering DV. The difference between them is that Type 1 accepts null when it should have rejected while Type II rejects null when it should be rejected.

### Examiner commentary

There is a correct definition of both Type I and Type II errors. Unfortunately, the distinction is unclear and errors have been made.

**Mark awarded = 2**

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## QUESTION

17 What do the mean and standard deviation values suggest about the male and female performances in the investigation?

[4 marks]

## MARK SCHEME

**Marks for this question: AO2 = 2 and AO3 = 2**

2 marks for an accurate comment about the means for both males and females

Plus

2 marks for an accurate comment about the standard deviations for both sets of data

### Possible content

**Means:** the mean score for males is almost 3 times larger than that of the females which suggests they are very much better at map reading than the females

**Standard deviations:** sds are quite similar to each other suggesting the spread of performances of the male participants and the female participants is similar within each group.

Exemplar response:

Mean scores are very different, males did much better (almost 3 times) on map reading than females. So they are better at reading maps.

S.D of both groups was very similar – so the spread of scores around the mean, the variance, of the two groups is similar.

### Examiner commentary

There is an accurate comment about the means for both males and females and this would gain both marks.

With respect to the standard deviations, the answer should explain that the spread of performances of the male participants and the female participants is similar within each group.

**Mark awarded = 3**

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## QUESTION

- 18** The mean map reading score for both groups together was 12.23. What percentage of the male group scored above the mean score and what percentage of the female group scored above the mean score? Show your calculations.

**[4 marks]**

## MARK SCHEME

**Marks for this question: AO2 = 4**

Award 2 marks for a correct calculation of the percentage for the male participants and 2 marks for a correct calculation of the percentage for the female participants.

If the calculation for one or both of the groups is incorrect but the procedure used is correct award 1 mark for each time this occurs to a maximum of 2 marks.

Males –  $13/20 = 65\%$

Females  $5/20 = 25\%$

Exemplar response:

Males =  $13/20$  above mean  
=65%

Females =20%

## Examiner commentary

Both the calculation and the procedure for the 'Males' are correct and would gain both marks. The 'Females' calculation is incorrect and there is no procedure shown so this gains no marks.

**Mark awarded = 2**

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## QUESTION

**19** Using your answers to both **question 17 and question 18**, comment on the performances of the male and the female participants in this study.

**[2 marks]**

## MARK SCHEME

**Marks for this question: AO2 = 2**

Up to 2 marks for a clear comment on the data

**Possible content:** the difference in the percentages confirms the earlier suggestion that men are much better at map reading than women.

Exemplar response:

The difference in % (showing that males are better at map reading than females) confirms what was found in Q17 with the mean differences between M and F, since 65% of males had above average scores, compared with only 20% of females.

## Examiner commentary

This is a full answer that gains both marks. Although 20% is incorrect, this has already lost a mark on Q18 and it does not alter the gist of the overall comment.

**Mark awarded = 2**

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## QUESTION

**20** Briefly explain **one** reason why it is important for research to be replicated.

**[2 marks]**

## MARK SCHEME

**Marks for this question: AO1 = 2**

### Possible content:

- The likelihood of the same differences occurring twice (or more), by chance alone are much smaller than when they occur the first time.
- Effects that occur in a study are more likely to be reliable if they occur in a repeat of the study – replication therefore increases (external) reliability.

Exemplar response:

Replication allows the reliability of a study to be confirmed.

### Examiner commentary

The appropriate link to reliability is creditworthy but would need further expansion to gain both marks.

**Mark awarded = 1**

## QUESTION

21 Discuss the following aspects of this investigation:

- with reference to the card sorting task, explain how you would ensure that this is made the same task for all participants
- **one** methodological issue you should take into account when obtaining suitable participants for this study and explain how you would deal with this issue
- how you would ensure that the experience of your participants is ethical.

[9 marks]

## MARK SCHEME

Marks for this question: AO2 = 9

| Level | Marks | Description  |
|-------|-------|--|
| 3     | 7-9   | Suggestions are generally well detailed and practical, showing sound understanding of design of an experiment. <b>All three</b> elements are present. There is sufficient information for most aspects of the study as required to be implemented with success. The answer is clear and coherent. Specialist terminology is used effectively. Minor detail and/or explanation sometimes lacking. |
| 2     | 4-6   | Some suggestions are appropriate but there may be a lack of detail. At least <b>two</b> elements are addressed. Implementation may be difficult given the lack of information. The answer is mostly clear and organised. There is some appropriate use of specialist terminology.  |
| 1     | 1-3   | <b>At least one</b> element is addressed but knowledge of task design or dealing with participants is limited. Successful implementation would be difficult given the information provided. There is substantial inaccuracy/muddle. Specialist terminology is either absent or inappropriately used.   |
|       | 0     | No relevant content.   |

### Possible content:

- **The task:** the answer must show an appreciation of the fact that the usual way of merely sorting a shuffled pack of cards into suits will have to be modified in order to ensure that each participant has exactly the same task. [Initial shuffle, record the order, reinstate that order for each participant.]
- **Suitability of participants:** the answer must include information about how familiarity with cards could become a confounding variable if not controlled and how this could be controlled practically.
- **Ethical issues:** specific or more general ethical considerations as applied to this study – protection of welfare, confidentiality, respect or integrity.



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Exemplar response:

- All participants must be given the same pack of cards in exactly the same order.
- Some people must be more familiar with playing cards than others; ie perhaps they often play card games. To overcome this, it might be necessary to ask participants before hand how often (if at all) they play cards.
- Since there is no need to deceive the participants, they can be given all the details of the study before they start and therefore it will be possible to gain their full informed consent. However, they would need to be reminded at the start of their right to withdraw (and again during the study if necessary).

### **Examiner commentary**

This is a Level 2 response. Some suggestions are appropriate but there is a lack of detail. All 3 elements have been partially addressed. Implementation would be difficult given the lack of information. The answer is fairly clear and organised with some appropriate use of specialist terminology. The answer overall, though, is too brief and further explanation is required. For example, with respect to the participants, familiarity with cards is an important point. This needs explaining with reference to the control of this potentially confounding variable. It is not clear how this would be controlled once the participants had been asked about their familiarity with card games.

**Mark awarded = 4**