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A-level  
**PSYCHOLOGY**  
**7182/2**

PAPER 2

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Mark scheme

Specimen Material Second Set

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Final

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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from [aqa.org.uk](http://aqa.org.uk)

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### Level of response marking instructions

Level of response mark schemes are broken down into two, three or four levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are two, three or four marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

#### Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

#### Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the indicative content to reach the highest level of the mark scheme.

An answer which does not contain anything of relevance to the question must be awarded no marks.

Examiners are required to assign each of the students' responses to the most appropriate level according to **its overall quality**, then allocate a single mark within the level. When deciding upon a mark in a level examiners should bear in mind the relative weightings of the assessment objectives (included for each question and summarised on page 16) and be careful not to over/under credit a particular skill. For example, in question 05 more weight should be given to AO3 than to AO1. This will be exemplified and reinforced as part of examiner training and standardisation.

## Section A

### Approaches in Psychology

**01.1** A phenotype is the result of the combined effect of .... Shade **one** box only. **[1 mark]**

**Marks for this question: AO1 = 1**

B

**01.2** Which **one** of the following statements is **false**? Shade **one** box only. **[1 mark]**

**Marks for this question: AO1 = 1**

D

**02** Referring to Bradley's experiences, explain the role of mediational processes in learning. **[4 marks]**

**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.

<b>03</b>	Describe Wundt's role in the development of psychology	<b>[6 marks]</b>
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**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.

<b>04</b>	Briefly explain <b>one</b> strength and <b>one</b> limitation of the cognitive approach in psychology.	<b>[4 marks]</b>
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**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

**05** Outline the psychodynamic approach in psychology. Discuss **one or more** differences between the psychodynamic approach and the humanistic approach. **[8 marks]**

**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.

## Section B

### Biopsychology

<b>6</b>	Outline the role of adrenaline in the fight or flight response.	<b>[4 marks]</b>
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**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).

- 7** 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]**

**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 biological explanations of offending behaviour 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.

### 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

**08** Explain **one** problem with the design of this study and suggest ways of dealing with this problem. **[4 marks]**

**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?

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**Section C****Research methods**

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

**[2 marks]**

**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.

**10** Write a suitable hypothesis for this investigation.

**[3 marks]**

**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.

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

**[2 marks]**

**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.

**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]**

**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

**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]**

**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.

<b>14</b>	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.	<b>[3 marks]</b>
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**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

<b>15</b>	Using the information in <b>Table 2</b> above, what conclusion can the researchers draw about the relationship between the map reading and driving skills of the motorists? Explain your answer.	<b>[4 marks]</b>
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**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.

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

**[4 marks]**

**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.

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

**[4 marks]**

**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.

**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]**

**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  $5/20 = 25\%$

**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]**

**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.

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

**[2 marks]**

**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.

**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]**

**Marks for this question: AO2 = 9 marks**

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.

### Assessment Objective Grid

Approaches in Psychology	AO1	AO2	AO3	Total
1.1	1			1
1.2	1			1
2		4		4
3	6			6
4			4	4
5	3		5	8
<b>Total</b>	<b>11</b>	<b>4</b>	<b>9</b>	<b>24</b>

Biopsychology				
6	4			4
7	6	4	6	16
8			4 RM	4
<b>Total</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>24</b>

Research methods				
9		2 RM		2
10		3 RM		3
11		2 RM/Maths		2
12		3 RM		3
13		2 RM	4 RM	6
14		3 RM/Maths		3
15		2 RM/Maths	2 RM/Maths	4
16	4 RM/Maths			4
17		2 RM/Maths	2 RM/Maths	4
18		4 RM/Maths		4
19		2 RM		2
20	2 RM			2
21		9 RM		9
<b>Total</b>	<b>6</b>	<b>34</b>	<b>8</b>	<b>48</b>

<b>Paper Total</b>	<b>27</b>	<b>42</b>	<b>27</b>	<b>96</b>
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Research methods = 52 marks  
 Maths = 21 marks