CAMBRIDGE
International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/12**

Paper 1 Approaches, Issues and Debates **February/March 2025**

MARK SCHEME

Maximum Mark: 60

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the February/March 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

This document consists of **21** printed pages.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
✔	A creditworthy point made by the candidate A creditworthy 'what' for a generic everyday application question
✘	An incorrect response
BOD	Benefit of Doubt
	Highlight
Off-page comment	
NBOD	No Benefit of Doubt
REP	Repetition of a point
?	Unclear response
I	The named issue in the 10-mark essay

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Annotation	Meaning
L1 L2 L3 L4 L5	Levels used for the 10-mark essay (L1–L5) Levels used for the 8-mark similarity/difference question (L1–L4)
NAQ	Not Answering the Question
SEEN	The blank page has been seen. An attached response has been seen.
+	A creditworthy strength in the 10-mark essay. A creditworthy 'how' for a generic everyday application question
–	A creditworthy weakness in the 10-mark essay.
✓b	A creditworthy point in the 10-mark essay that is **b**rief
✓d	A creditworthy point in the 10-mark essay that is **d**etailed
✓g	Identifying an appropriate ethical guideline for the use of animals in **Question (6)(b)**
✓e	A creditworthy point when explaining how an ethical guideline was adhered to or broken in **Question (6)(b)**

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Question	Answer	Marks	Guidance
1(a)	**In the study by Perry et al. (personal space), there were four types of 'approaching figure'. One of these figures was a friend.** **Identify <u>one</u> other 'approaching figure'.** 1 mark for correct answer. Stranger/authority/ball.	**1**	If more than one response given, take first one only. Do accept boss or teacher (named authority figures by Perry). Reject parents.
1(b)	**Outline what is meant by the term 'empathy'.** 2 marks for full outline. 1 mark for brief outline. e.g., The ability to understand the emotional state of someone else (1 mark) by imagining what it would be like to be in that situation (1 mark).	**2**	Do accept 'seeing it from another person's perspective/in their shoes' for the 2nd mark. 1 mark = ability 1 mark = 'how' mechanism

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Question	Answer	Marks	Guidance
1(c)	**Outline <u>one</u> conclusion from this study.** 2 marks for a full/detailed conclusion 1 mark for a partial/brief conclusion e.g., 2 marks Oxytocin affects the amount of personal space a person feels they need in relation to how empathic they are. Oxytocin and empathy interact differently depending on the individual, for example, a person with low empathy level requires increased personal space in response to oxytocin. The administration of oxytocin enhances social cues in different ways and is dependent on the empathy levels of a person. If a person has high levels of empathy and oxytocin then they will be more likely to want closer interpersonal distances [and reverse argument for low]. e.g., 1 mark Oxytocin affects the amount of personal space a person needs. The idea of social salience was supported. The administration of oxytocin enhances social cues in different ways. People with high empathy require less personal space/people with low empathy require more personal space. There are other creditworthy conclusions, including ones based around the familiarity of a person affecting levels of personal space.	**2**	Ignore results. Comparison between different conditions = 0 marks. The role of oxytocin **must** be part of the response to be awarded 2 marks.

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Question	Answer	Marks	Guidance
2(a)	**In the study by Hölzel et al. (mindfulness and brain scans), some participants took part in formal mindfulness training. This included yoga, meditation, and body scan.** **Outline what happened during the 'body scan' part of the training in this study.** 1 mark per correct point. Sequentially guided through (entire) body Be aware of sensations in all regions of the body. Observe this with non-judgemental awareness. End point is awareness of the body 'as a whole'.	**2**	List is definitive.
2(b)	**Explain <u>one</u> weakness of this study.** 1 mark for identifying the weakness. 1 mark for explaining the weakness via example from the study. e.g., The use of self-reports may lead to social desirability (1 mark: identification). The Ps may complete the FFMQ in a way to make it look like they were partaking in MBSR more than they were (1 mark: example) Not all participants were protected from psychological harm (1 mark: identification). Some Ps withdrew from the brain scan as they did not like it (1 mark: example) There are other creditworthy weaknesses, including sample generalisability; social interactions during the course affecting grey matter (and not MBSR), lack of standardisation affecting reliability, other ethical issues (e.g., control group not getting help), lack of correlation between FFMQ and GMC etc.	**2**	Do **not** credit laboratory experiment but do credit MRI-related weaknesses. Do **not** accept 'validity' or 'standardisation' by itself as the ID mark. Do **not** accept lack of standardisation affecting replicability (it did not) but **do** accept it related to reliability. **Do** accept representative as generalisability.

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Question	Answer	Marks	Guidance
3(a)	**From the study by Dement and Kleitman (sleep and dreams):** **One aim was to investigate whether eye movement patterns were related to the content of dreams.** **Outline <u>one</u> other aim of this study.** 2 marks for full/detailed aim 1 mark for brief/partial aim e.g. To investigate if dream recall differs between REM and nREM stages of sleep (2 marks). To investigate dream recall and stages of sleep (1 mark). To investigate if there was a (positive) correlation between estimates of dream duration and length of REM sleep (2 marks). To investigate estimates of dream duration (1 mark).	**2**	Do not credit the aim about eye movement patterns and content of dreams.
3(b)	**One feature of the sample was that there were nine participants.** **Identify <u>two</u> other features of this sample.** 1 mark per correct feature. Adults. Mostly male/7 males. 2 females. 5 studied intensively. 4 used minimally to confirm results.	**2**	List is definitive. Do **not** accept '4 withdrew'. Accept opportunity sampling. Do not credit **equal** amounts of males and females, or from Chicago.

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Question	Answer	Marks	Guidance
3(c)	**Suggest <u>one</u> application to everyday life using evidence from this study. Your suggestion <u>must</u> be ethical.** 1 mark for what the application is (clearly based on Dement and Kleitman). 1 mark for how it will be achieved. e.g., It can help people with sleep related disorders (1 mark: what). Patients can be attached to an EEG monitor to see if brain waves whilst sleeping are typical or not (1 mark: how). It can be used in therapy involving dream analysis (1 mark: what). Patients can be woken up in REM sleep (via a device that detects REM sleep) and asked to recall the content of their dream immediately (1 mark: how). There are other creditworthy suggestions.	**2**	Annotate with a tick for what the application is and a + for how it will be achieved.

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Question	Answer	Marks	Guidance
4	**In the study by Pozzulo et al. (line-ups), the participants were adults and children.** **Describe <u>one</u> result from the children in the target-absent line-ups. You <u>must</u> use data in your answer.** 2 marks for the result with a meaningful comparison. 1 mark for result with no meaningful comparison. 1 mark for correct data. e.g., 3 marks The children were more accurate/had a higher correct rejection rate for cartoon faces (74%) compared to human faces. The children were more accurate/had a higher correct rejection rate for Dora (80%) compared to Diego/female-target (human)/male-target (human). e.g., 2 marks The children were more accurate/had a higher correct rejection rate for cartoon faces compared to human faces. The children were more accurate/had a higher correct rejection rate for Dora compared to Diego/female-target (human)/male-target (human). e.g., 1 mark The children were more accurate/had a higher correct rejection rate for cartoon faces. The children were more accurate/had a highest correct rejection rate for Dora.	**3**	Tolerance for data is 2% Use tick-d for data mark (must be for children) Do accept 'better' as within-group comparison. If compared to adults, max 1. Do **not** credit responses about % of participants as we do not know this. **Must** be about **rejection** rates and **not <u>correct</u> identification** (latter is for target-present trials). Reject comparisons to target-present.

Question	Answer	Marks	Guidance
5(a)	**Outline <u>one</u> assumption of the cognitive approach.** 2 marks: full/detailed assumption 1 mark: partial/brief assumption e.g., 2 marks Information processing is the same for all humans, like a computer: input then process then output information. People have individual differences in the way they cognitively process information based on attention/memory/language (need 2 of the processes named). e.g., 1 mark Information processing is the same for all humans, like a computer. People have individual differences in the way they cognitively <u>process</u> information.	**2**	
5(b)	**Explain how the study by Baron-Cohen et al. (eyes test) supports the assumption you outlined in part (a).** 1 mark for result/conclusion/concept. 1 mark for linking it to an assumption explicitly (not by name only) e.g. The AS/HFA group scored significantly lower on the Eyes Test (compared to the other three groups) (1 mark). This shows that differences between the groups can be explained by individuals' cognitions/thinking processes, in this case, Theory of Mind (1 mark). This clearly shows that people in the AS/HFA group, when it came to emotions, inputted information but found it difficult to process it (alternative 1 mark). All participants were shown a pair of eyes (input), they then had to process that in order to assess the emotion shown (process) and then choose the correct emotion from the four options (output) (2 marks as examples are integral).	**2**	If the link is not with an assumption from 5a, can only be awarded the result/conclusion mark. Cannot simply repeat the assumption in 5(a) to get second mark. For input-process-output, the concepts can be integral examples for maximum marks (see indicative content).

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Question	Answer	Marks	Guidance
6(a)	**Outline what is meant by the term 'shaping'. Include an example from the study by Fagen et al. (elephant learning) in your answer.** 1 mark per correct point, up to 2 marks. 1 mark for an example from the study by Fagen. e.g., Shaping is when behaviour is reinforced in successive approximation. When a behaviour gets closer to the one that is being taught, the organism is rewarded. The rewards are then given when each progressive step is completed (towards the goal behaviour). In Fagen, the elephants were rewarded with banana each time they got closer to the desired behaviour, for example, trunk here (1 mark: example). There are other creditworthy points.	**3**	Only credit examples from the study by Fagen. Do **not** credit descriptions of positive reinforcement in the absence of any reference to the 'shaping' element of training. **Do** credit 'rewards best performance/behaviour/ attempt'. Example mark **must** have banana and a named/description of behaviour from the study.

Question	Answer	Marks	Guidance
6(b)	**Two friends, Tenzin and Ambar, are discussing the ethics of the study by Fagen et al. (elephant learning).** **Tenzin says the study is ethical, but Ambar says it is <u>not</u> ethical.** **Outline why you think <u>either</u> Tenzin <u>or</u> Ambar is correct, using evidence from this study.** 1 mark per point made, with: 1 mark for identification of a relevant guideline linked to animals. Up to 3 marks for explanation(s) as to why guideline adhered to/broken. e.g., Tenzin The study followed the guideline of numbers (1 mark: guideline). The sample size was only 5 so it was kept to a minimum (1 mark). The study followed the guideline of species chosen (1 mark: alternative guideline mark). The purpose of the study was to teach a trunk wash for elephants to help in TB management, so appropriate species was used (1 mark). The elephants had constant access to food/water outside of training (1 mark). The elephants could walk away if they did not want to participate (1 mark). No punishment was used in training/only used positive reinforcement in training (1 mark) e.g., Ambar The study could be seen as possibly not following the guideline of housing (1 mark: guideline). This is because the elephants were leg-chained to posts during some of the day so might have found it difficult to be sociable (1 mark: explanation). The study could be seen as possibly not following the guideline of minimising harm (1 mark: alternative guideline mark) as elephants would only gain the banana reward once a behaviour had been performed/lured and this might have been stressful for the elephants (1 mark: explanation). There are other creditworthy responses.	**4**	If both Tenzin and Ambar feature in the answer, mark them independently and credit the highest score. If the candidate mixes up Tenzin and Ambar (e.g. says Tenzin but gives a 'not ethical answer) then max 2 and annotate with a ? ✓e ✓g g = guideline mark e = explanation mark Go with the intention of the candidate. Relevant guidelines are: Minimising harm, replacement, species, numbers, housing, rewards/deprivation. Do **not** accept right to withdraw for elephants being able to walk away for the available guideline mark. Do **not** accept informed consent of elephant or mahout.

Question	Answer	Marks	Guidance
7	**From the study by Andrade (doodling):** **Describe the procedure for a participant who was in the doodling condition.** 1 mark per correct point. To gain maximum marks, the answer must include at least one of the statements highlighted in bold as Q is about the *doodling* condition. They were recruited after completing a different/unrelated study. They were taken into a visually dull room. They were asked to listen to a tape recording of a telephone message/monotonous recording. **(Whilst listening) they were asked to shade in the squares and circles (on a piece of paper given to them).** **They were told it does not matter how neat/how quickly as it is to relieve the boredom.** They were told they did not need to remember any of the message. They had been instructed to write down the names of the party-goers. Engaged in a one-minute conversation with the experimenter. They were then asked to write down the names of the party-goers or the places. They had not been told about the test on places/it was a surprise test. (They were debriefed) and asked if they suspected a memory test.	**5**	List is definitive. Use tick-b to show that at least one mark is from bold indicative list when awarding 5 marks. Do **not** credit details about the materials (e.g., 227 wpm, A4 paper, 4.5cm margin) etc. Do **not** credit 'they were asked to doodle'. Do **not** credit 'they were asked to <u>remember</u> the names'.

Question	Answer	Marks	Guidance
8	**Your friend, Aditi, has read a newspaper story about a person on a bus who collapsed but did not receive help from other bus passengers. The story did not contain any information about the characteristics of the victim. Aditi says that she cannot understand why the other passengers did not help the person who had collapsed.** **Suggest to Aditi why the other passengers did not help, using your knowledge of the study by Piliavin et al. (subway Samaritans).** 1 mark per correct point. e.g., Sometimes people can diffuse their responsibility and expect others to help. This is more likely to happen (theoretically) if there were lots of people on the bus. The victim may have been drunk so people would have been less inclined to help. One reason might have been the condition victim, e.g., ill/drunk. If the victim was drunk, the passengers might think the victim did not deserve help/could be aggressive. One reason might have been the race of the victim, e.g., white/black. One reason might be the sex of the helpers / sex of people on the bus. If the victim was male and the majority on the bus were female passengers, then the probability of help could be less. Female passengers might have expected male passengers to help more as 'it is a man's job'. There are other creditworthy suggestions.	**4**	Go with the intentions of the candidate. Anything that is from the Piliavin study that is linked to the scenario can gain credit, including background, as the focus is on knowledge, not purely evidence. Explanation is not necessary but if provided it must be credited. **No** identification marks for concepts of bystander apathy or diffusion of responsibility. Evidence used to elaborate any reason is creditworthy. Do **not** credit responses about racial prejudice as Piliavin stated there was very little evidence for this.

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Question	Answer	Marks	Guidance
9(a)	**Describe the sample used in the study by Hassett et al. (monkey toy preferences).** 1 mark per correct point. Rhesus monkeys. Troop of 135 individuals. Lived together for more than 25 years. Lived at Yerkes Center. Matriline social structure/same natal group. 14 not used due to hormonal treatment. Age range 3 months to over 13 years. 61 females/21 males/more females than males used as potential participants/82 potential participants. 23 females/11 males/34 monkeys used in data analysis. 39 infants <u>not</u> used (as interactions not coded). 53 monkeys were excluded in total.	**4**	List is definitive. **No** tolerance on numbers. Do credit information about rank if presented.

Question	Answer	Marks	Guidance
9(b)	**Explain <u>one</u> similarity and <u>one</u> difference between the study by Hassett et al. (monkey toy preferences) and <u>one</u> other study from the biological approach. Do <u>not</u> refer to the sample.** Use the marking grid below. 4 marks for the similarity, e.g., assumptions they are based on, type of data collected, ethics, experimental design, correlations. 4 marks for the difference, e.g., brain measurement, type of data collected (quantitative/qualitative), type of experiment, experimental design. e.g., similarity 4 marks Both the studies by Hassett and Hölzel conformed to ethical bodies relevant to their studies. In the study by Hassett this was in accordance with NIH Guidance to include enrichment and appropriate environmental management. In the study by Hölzel this was via guidelines from a hospital and a medical school to include obtaining informed consent. Therefore, both studies followed set ethical guidelines relevant to the setting the study took place in (explanation). e.g., 3 marks Both the studies by Hassett and Hölzel conformed to ethical bodies relevant to their studies. In the study by Hassett this was in accordance with NIH Guidance to include enrichment and appropriate environmental management. e.g., 2 marks Both followed ethical guidelines relevant to their sample as Hölzel had to obtain informed consent. e.g., 1 mark Both conformed to ethical bodies relevant to their studies.	**8**	The other studies from the biological approach are: Hölzel *et al* Dement and Kleitman **Do** accept Perry if response about biological aspects of that study. Award L1–L4 for the similarity Award L1–L4 for the difference For Level 4 there must be some attempt at *explaining* the similarity/difference. If ethics used **as a difference**, then max L2. Different aims = L1. Sample generalisability, sampling technique or different species = L0

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<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>9(b)</td><td>
<table>
<tr><th>Mark/ Level</th><th>Description</th></tr>
<tr><td>4</td><td>The similarity/difference is well explained using both studies as examples.</td></tr>
<tr><td>3</td><td>The similarity/difference is well explained but only one study is used as an example OR
both studies are used briefly.</td></tr>
<tr><td>2</td><td>The similarity/difference is brief with an attempt at using at least one study as an example OR
The similarity/difference is well explained but there is no study evidence.</td></tr>
<tr><td>1</td><td>The similarity/difference is brief with no attempt at using the /studies as examples.</td></tr>
<tr><td>0</td><td>No creditable response.</td></tr>
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Question	Answer	Marks	Guidance
10	**Evaluate the study by Bandura et al. (aggression) in terms of <u>two</u> strengths and <u>two</u> weaknesses. At least one of your evaluation points <u>must</u> be about generalisations from the sample.** Strengths include: reliability (standardisation), quantitative data, validity. Weaknesses include: ecological validity, ethics, generalisability, quantitative data. Example: in detail The study collected quantitative data which makes it easier to make meaningful comparisons between groups/conditions. They measured things like the number of times a physical/verbal aggression was imitated. This meant there could be a direct comparison between aggressive/nonaggressive models or male/female models. Example: brief but in context (named issue) The sample was only from one nursery. This could make it difficult to generalise to a wider population outside of this sample. Example: no context There was a standardised procedure meaning it could be replicated/tested for reliability.	**10**	

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<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>10</td><td>
<table>
<tr><th>Level</th><th>Description</th><th>Marks</th></tr>
<tr><td>5</td><td>• Very good evaluation including the named issue.
• Thoroughly addresses both strengths and both weaknesses in detail.
• Selection of evidence is very thorough and effective.</td><td>9–10</td></tr>
<tr><td>4</td><td>• Good evaluation including the named issue.
• Addresses strengths and weaknesses but may include three or four points. The majority of the points are in depth.
• Selection of evidence is thorough and effective.</td><td>7–8</td></tr>
<tr><td>3</td><td>• Mostly appropriate evaluation but may not include the named issue.
• Addresses either two strengths or two weaknesses in detail or one of each in detail or all four briefly.
• Selection of evidence is mostly effective.</td><td>5–6</td></tr>
<tr><td>2</td><td>• Weak evaluation and may not include the named issue.
• Addresses either a strength or a weakness. Evaluation points are brief.
• Some points may have no context.
• Selection of evidence is sometimes appropriate.</td><td>3–4</td></tr>
<tr><td>1</td><td>• Little or no evaluation.
• Discussion of strengths and weaknesses is absent or superficial.
• Selection of evidence is limited.</td><td>1–2</td></tr>
<tr><td>0</td><td>No creditable response.</td><td>0</td></tr>
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