



# Mark Scheme (Results)

Autumn 2020

Pearson Edexcel

GCE Psychology 8PS0/02

Paper 2: Biological Psychology and Learning  
Theories

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

## SECTION A

Question Number	Answer	Mark
<b>1(a)</b>	<p style="text-align: center;"><b>AO1 (2 marks)</b></p> <p>Up to <b>two</b> marks for stating what is meant by a positive and a negative correlation.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Positive correlations show that as one variable increases the other variable increases (1)</li> <li>• Negative correlations show that as one variable increases the other variable decreases (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>1(b)</b>	<p style="text-align: center;"><b>AO1 (2 marks), AO3 (2 marks)</b></p> <p><b>One</b> mark for each strength/weakness identified (AO1).  <b>One</b> mark for a justification of each strength/weakness (AO3).</p> <p>For example:</p> <p>Strength</p> <ul style="list-style-type: none"> <li>• The correlation method allows researchers to investigate naturally occurring variables (1) that may be unethical or impractical to test experimentally in a laboratory (1).</li> </ul> <p>Weakness</p> <ul style="list-style-type: none"> <li>• The correlation method cannot establish a cause and effect relationship between variables (1), as there may be a lack of control over the other variables that may influence the outcome of the results being measured (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
2	<p style="text-align: center;"><b>AO2 (4 marks)</b></p> <p>Up to <b>four</b> marks for a description of evolution and natural selection to explain aggressive behaviour in relation to Max's presentation.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Max could include in his presentation Darwin's suggestion that only the fittest genes, like those involving aggression, were passed on to aid human survival (1). Max could then explain that in prehistoric times these inherited aggressive behavioural traits could be used in hunting, to provide food for others (1). Max could include a short video clip from a popular television programme showing two men fighting for the attention of a woman, which would aid their survival (1). Max could include a research study such as Dobash and Dobash (1979) who found that violence against woman often came about through jealousy, which is an aggressive trait that could lead to gene survival (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
3(a)	<p style="text-align: center;"><b>AO2 (1 mark)</b></p> <p><b>One</b> mark for correct calculation of percentage.</p> <ul style="list-style-type: none"> <li>• 13.3%</li> </ul> <p><b>Reject all other answers.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
<b>3(b)</b>	<p style="text-align: center;"><b>AO2 (1 mark)</b></p> <p><b>One</b> mark for the correct calculation of the mean.</p> <ul style="list-style-type: none"> <li>• 12.5</li> </ul> <p><b>Reject all other answers.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
<b>3(c)</b>	<p style="text-align: center;"><b>AO2 (1 mark), AO3 (1 mark)</b></p> <p><b>One</b> mark for identification of strength (AO2).  <b>One</b> mark for justification of strength (AO3).</p> <p>For example:</p> <p>Strength</p> <ul style="list-style-type: none"> <li>• Isaac's opportunity sample is less time consuming as he used participants who were around when the investigation on alcohol and ability to complete a task were completed (1) therefore Isaac did not have to spend time looking for his participants such as in sampling techniques like stratified (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>3(d)</b>	<p style="text-align: center;"><b>AO2 (1 mark), AO3 (1 mark)</b></p> <p><b>One</b> mark for identification of an improvement (AO2).  <b>One</b> mark for justification of the improvement (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Isaac could improve his investigation by using a baseline measure completed before drinking any alcohol (1) as this would allow him to compare the other conditions of alcohol consumption to see if there is a difference in the results (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>4a</b>	<p style="text-align: center;"><b>AO2 (2 marks), AO3 (2 marks)</b></p> <p><b>One</b> mark for identification of each reason (AO2).  <b>One</b> mark for justification of each reason (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Amanda's doctor may consider that an fMRI scanner can show good spatial resolution of potential aggressive brain areas (1) which could then provide a valid identification of areas of Amanda's brain that might be involved in her aggression (1).</li> <li>• Amanda's doctor may consider that an fMRI is a non-invasive method of looking at aggression in her brain (1) which is ethically more acceptable than sending Amanda for surgery or any other form of invasive treatment (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
<b>4b</b>	<p style="text-align: center;"><b>AO1 (1 mark)</b></p> <p>One mark for naming a brain scanning technique.</p> <p>For example:</p> <ul style="list-style-type: none"><li>• PET scan (1)</li></ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(1)</b>

Question Number	Indicative content	Mark
5	<p style="text-align: center;"><b>AO1 (4 marks), AO3 (4 marks)</b></p> <p><b>AO1</b></p> <ul style="list-style-type: none"> <li>• The body's endocrine glands secrete hormones such as cortisol directly into the blood stream targeting key organs responsible for our fight-or-flight response.</li> <li>• Testosterone is a male sex hormone that can influence areas of the brain such as the frontal cortex, amygdala and hypothalamus associated with aggression.</li> <li>• Higher levels of the female sex hormones estradiol (oestradiol) have been associated with lower levels of aggressive behaviour in children and female offenders.</li> <li>• Females usually have higher levels of the hormone oestrogen and lower levels of testosterone, however changes to female testosterone levels may result in aggression.</li> </ul> <p><b>AO3</b></p> <ul style="list-style-type: none"> <li>• Many studies, for example Lidberg et al. (1985) show that the influence of hormones on the body's responses is correlational so we cannot be certain which hormone is responsible for human aggressive behaviour.</li> <li>• Maletzky et al. (2006) found that depo-Provera, a drug that lowers testosterone, is important in explaining aggressive human behaviour as it showed a reduction in the levels of sexually aggressive behaviour in some offenders.</li> <li>• Social learning theory suggests human aggressive behaviour is the result of imitating violent role models and does not consider the role different male and female hormones.</li> <li>• Dabbs and Hargrove (1997) found a positive correlation between the hormone testosterone and the degree of violent crime in 87 female prisoners, suggesting that the hormone may be involved in explaining aggressive behaviour.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO3 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs assessment/conclusion in their answer.</b>		
	0	No rewardable material.
Level 1	1-2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	3-4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a generic or superficial assessment being presented. (AO3)
Level 3	5-6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to an assessment being presented which considers a range of factors. Candidates will demonstrate understanding of competing arguments/factors but unlikely to grasp their significance. The assessment leads to a judgement but this may be imbalanced. (AO3)
Level 4	7-8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical assessment, containing logical chains of reasoning throughout. Demonstrates an awareness of the significance of competing arguments/factors leading to a balanced judgement being presented. (AO3)

## SECTION B

Question Number	Answer	Mark
6(a)	<p style="text-align: center;"><b>AO1 (1 mark)</b></p> <p><b>One</b> mark for stating the aim of contemporary study.</p> <p>For example:</p> <p><b>Becker et al. (2002)</b></p> <ul style="list-style-type: none"> <li>• Aimed to investigate the impact of exposure to Western attitudes through the introduction of media on the eating behaviours of adolescent girls (1).</li> </ul> <p><b>Bastian et al. (2011)</b></p> <ul style="list-style-type: none"> <li>• Aimed to investigate if playing a violent game would cause a dehumanised view of their self and the other players (1).</li> </ul> <p><b>Capafóns et al. (1998)</b></p> <ul style="list-style-type: none"> <li>• Aimed to investigate if systematic desensitisation was effective as a treatment for those afraid to fly (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
6(b)	<p style="text-align: center;"><b>AO1 (2 marks)</b></p> <p>Up to <b>two</b> marks for describing the results of contemporary study.</p> <p>For example:</p> <p><b>Becker et al. (2002)</b></p> <ul style="list-style-type: none"> <li>• EAT-26 score had more than doubled, from 12.7% in 1995 to 29.2% in 1998 (1). The part of the sample that used self-induced vomiting as a means of weight control increased from 0% in 1995 to 11.3% in 1998 (1).</li> </ul> <p><b>Bastian et al. (2011)</b></p> <ul style="list-style-type: none"> <li>• Participants in both games found them as equally frustrating, Mortal Kombat mean of 3.27 compared to 3.04 for Top Spin tennis (1). In study one, results for the mean score for self-humanity were lower in the violent game, 3.74 compared to non-violent game of 4.35 (1).</li> </ul> <p><b>Capafóns et al. (1998)</b></p> <ul style="list-style-type: none"> <li>• All measures decreased, except for palm temperature before and after treatment for the treatment group (1). 90% of patients in the treatment group showed a reduction in their symptoms, only 2 did not (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
6(c)	<p style="text-align: center;"><b>AO1 (2 marks), AO3 (2 marks)</b></p> <p><b>One</b> mark for identification of each strength/weakness (AO1).  <b>One</b> mark for justification of each strength/weakness (AO3).</p> <p>For example:</p> <p><b>Becker et al. (2002)</b>  Strength</p> <ul style="list-style-type: none"> <li>• Becker et al. (2002) used a standardised questionnaire called the EAT-26 to measure eating behaviour (1) which had already been established and used in research therefore is a reliable measure of eating behaviour (1).</li> </ul> <p>Weakness</p> <ul style="list-style-type: none"> <li>• Becker et al. (2002) only used participants from Fiji, which is not representative of all cultures (1) as in Fijian culture robust body shapes are deemed attractive, which may not be representative of other cultures (1).</li> </ul> <p><b>Bastian et al. (2011)</b>  Strength</p> <ul style="list-style-type: none"> <li>• Bastian et al. (2011) used a standardised procedure of controlling the same equipment ,i.e. TV screen X-box video game console used by all participants (1) therefore ensuring that it was the video game that influenced the results and not other variables such as length of time the game was played for (1).</li> </ul> <p>Weakness</p> <ul style="list-style-type: none"> <li>• Bastian et al.'s (2011) sample across both studies showed higher numbers of women so there may be gender bias – gynocentric (1) which may reduce the representativeness of results for a typical computer gaming population (1).</li> </ul> <p><b>Capafóns et al. (1998)</b>  Strength</p> <ul style="list-style-type: none"> <li>• Capafóns et al. (1998) used standardised testing including the Fear of Flying Scale and physiological measurements, i.e. heart rate of the participants (1) these were established and valid measures of the phobic participants' anxiety before and after the treatment (1).</li> </ul> <p>Weakness</p> <ul style="list-style-type: none"> <li>• In the Capafóns et al. (1998) study participants were exposed to their phobia through watching a videotape of a plane trip, which is low in validity (1) as it may not reflect their true anxiety levels when taking a plane trip in a real-life setting (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
7	<p style="text-align: center;"><b>AO2 (3 marks)</b></p> <p>Up to <b>three</b> marks for description of the procedure used for their practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"><li>• I selected a bus route from my college that was used regularly by students at our college (1). I positioned myself on a seat on the third row of a bus so I could see and hear passenger interactions with the bus driver (1). I tallied the number of times passengers said 'thank you' or not to the bus driver (1).</li></ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to their practical investigation.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(3)</b>

Question Number	Answer						Mark
<b>8(a)</b>	<b>AO2 (4 marks)</b>						<b>(4)</b>
		Observed	Expected	O-E	$(O-E)^2$	$(O-E)^2/E$	
20-35 years	Patients with 'less severe' symptoms after treatment	5	8	-3	9	1.125	
	Patients with 'more severe' symptoms after treatment	15	12	3	9	0.75	
40-55 years	Patients with 'less severe' symptoms after treatment	11	8	3	9	1.125	
	Patients with 'more severe' symptoms after treatment	9	12	-3	9	0.75	
<b>Chi-Squared =</b>					<b>3.75</b>		
<p>One mark for accurate completion of O-E.            One mark for accurate completion of <math>(O-E)^2</math> column.            One mark for accurate completion of <math>(O-E)^2/E</math> column.            One mark for correct answer 3.75</p> <p><b>Look for other reasonable marking points.</b></p>							

Question Number	Answer	Mark
<b>8(b)</b>	<p style="text-align: center;"><b>AO2 (1 marks), AO3 (1 marks)</b></p> <p><b>One</b> mark for identification of strength (AO2).  <b>One</b> mark for justification of strength (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Bertie used a standardised rating scale from 1-10 to measure the phobic symptoms, which can be tested for reliability (1) because the measurement of severity of symptoms could be replicated with all patients to assess consistency over time (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>8(c)</b>	<p style="text-align: center;"><b>AO2 (1 mark), AO3 (1 mark)</b></p> <p><b>One</b> mark for identification of improvement (AO2).  <b>One</b> mark for justification of improvement (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Bertie could improve his study by getting family members to record patients' phobic behaviours (1) which would provide a more accurate measure of the patients' severity of symptoms after treatment as they are more likely to be objective (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>9</b>	<p style="text-align: center;"><b>AO2 (3 marks)</b></p> <p>Up to <b>three</b> marks for a description of how Bradley could use a content analysis.</p> <p>For example:</p> <ul style="list-style-type: none"><li>• Bradley would decide on the categories of violent and non-violent behaviours he would be looking for in the television programmes (1). He would then watch a range of children's television programmes and code the violent and non-violent behaviour he sees (1) which he would tally to see which television programmes contained the most violence (1).</li></ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Answers must relate to the scenario.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(3)</b>

Question Number	Indicative content	Mark
10	<p style="text-align: center;"><b>AO1 (4 marks), AO3 (4 marks)</b></p> <p><b>AO1</b></p> <ul style="list-style-type: none"> <li>• Social learning theory suggests that people learn through watching what others do, copying their actions and in doing so learning new behaviour.</li> <li>• Social learning theory proposes that role models are more likely to be copied if they are the same age and sex of the observer.</li> <li>• Vicarious reinforcement is experienced when an observer witnesses the model being rewarded with something for the behaviour they show.</li> <li>• Bandura (1977) suggested that there are four processes that influence whether a role model is copied – attention, retention, reproduction and motivation.</li> </ul> <p><b>AO3</b></p> <ul style="list-style-type: none"> <li>• Bandura, Ross and Ross (1961) found that children who observed an aggressive role model made more imitative aggressive actions of behaviour than the non-imitative or control group.</li> <li>• Kendler et al. (2015) found that identical twins are more likely to show higher levels of aggression than non-identical twins indicating a genetic link to aggression.</li> <li>• By rewarding powerful and high-status role models like Dwayne 'The Rock' Johnson stricter censorship laws may be needed to restrict children's access to observing characters like this.</li> <li>• Bandura (1961) observed children in his study on modelled aggression therefore may not be representative of how adults learn aggressive behaviour.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO3 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.</b>		
	0	No rewardable material.
Level 1	1-2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	3-4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	5-6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	7-8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Indicative content	Mark
10	<p style="text-align: center;"><b>AO1 (6 marks), AO3 (6 marks)</b></p> <p><b>AO1</b></p> <ul style="list-style-type: none"> <li>• Classical conditioning assumes that learned phobic behaviour in humans is by association.</li> <li>• Natural reflexes are paired with neutral stimuli to create a phobic learned behaviour in classical conditioning.</li> <li>• Repeated association of the UCS and NS leads to the NS becoming the CS, causing the CR to increase the likelihood of a phobic response.</li> <li>• Neurotransmitters like acetylcholine can influence muscle movement, memory and learning.</li> <li>• Cocaine is a recreational drug that can stimulate the central nervous system within the brain's main reward system affecting dopamine release.</li> <li>• Genetic predisposition may be one of the influences that affects how sensitive or responsive an individual's central nervous system is to recreational drugs.</li> </ul> <p><b>AO3</b></p> <ul style="list-style-type: none"> <li>• Studies like Watson and Rayner (1920) showed that classical conditioning can alter behaviour in terms of a child's emotional reactions to various objects like a rat.</li> <li>• Pavlov's (1927) study used dogs, which has limited generalisability to humans suggesting classical conditioning may not be a representative explanation of human behaviour.</li> <li>• Gilroy et al. (2003) used systematic desensitisation, which is based on classical conditioning principles to treat patients who had a spider phobia showing altered behaviour is possible in terms of a treatment.</li> <li>• Acetylcholine imbalances are known to be caused by low choline, a vitamin B complex-related nutrient found mainly in fatty animal foods, therefore human behaviour differences have other explanations.</li> <li>• Experimental treatments, such as the TA-CD vaccine, have been trialled to inhibit the pleasurable effects of recreational drugs such as cocaine so could be used as a form of treatment for addiction.</li> <li>• Dawes et al. (2000) suggested that stress is one of the strongest predictors of relapse in drug users, suggesting an interplay of different factors can influence human behaviour differences.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(12)</b>

Level	Mark	Descriptor
<b>AO1 (6 marks), AO3 (6 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs judgement/conclusion in their answer.</b>		
	0	No rewardable material.
Level 1	1-3 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A judgement/decision may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	4-6 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material leading to a judgement/decision being presented. Candidates will demonstrate a grasp of competing arguments but response may be imbalanced. (AO3)
Level 3	7-9 Marks	Demonstrates accurate knowledge and understanding. (AO1) Displays a mostly developed and logical argument, containing mostly coherent chains of reasoning. Demonstrates an awareness of competing arguments, presenting a judgement/decision which may be imbalanced. (AO3)
Level 4	10-12 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical argument, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments and presents a balanced response, leading to an effective nuanced and balanced judgement/decision. (AO3)