Pearson Edexcel

Mark Scheme (Results)

June 2023

Pearson Edexcel
GCE Psychology 8PS0/02
Paper 2: Biological Psychology and Learning Theories

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June 2023
Publications Code 8PS0_02_2306_MS
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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

<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>1(a)</td><td>

AO1 (3 marks)

Up to three marks for completing Table 1 with the name of the different parts of the personality.

<table>
<tr><th>Definition</th><th>Part of the Personality</th></tr>
<tr><td>This part of the personality is rational and tries to balance the conflicting demands of other parts of the personality. It operates according to reality (the ‘reality principle’) and tries to satisfy pleasure (the ‘pleasure principle’) in a socially responsible way.</td><td>Ego</td></tr>
<tr><td>This part of the personality tries to impose moral standards on the individual and includes the conscience and what a person should be like (the ‘ego ideal’). It operates according to morality (the ‘morality principle’) and tries to impose right and wrong in relation to pleasure, including forbidden behaviour such as aggression.</td><td>Superego</td></tr>
<tr><td>This part of the personality focuses on pleasure and satisfying instinctual urges an individual may have. It operates according to pleasure (the ‘pleasure principle’) and does not understand logic, so it becomes frustrated, potentially leading to aggressive urges if denied pleasure.</td><td>Id</td></tr>
</table>

</td><td>(3)</td></tr>
</table>

Question Number	Answer	Mark
1(b)	AO1 (2 marks), AO3 (2 marks) One mark for identification of each weakness (AO1). One mark for justification of each weakness (AO3). For example: • Freud suggested that only early childhood experiences may shape aggressive human behaviour in adulthood which is reductionist (1) because it ignores alternative explanations such as hormones like testosterone being influential in someone's aggressive behaviour (1). • Freud's concepts of the id, ego and superego underpinning his theory of aggression cannot be seen to be measured objectively (1) therefore his explanation of aggressive behaviour can be viewed as unscientific because these concepts are unfalsifiable (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
2(a)	AO2 (2 marks) Up to two marks for a description of how one hormone could explain Claus's aggressive behaviour. For example: • As a teenager going through puberty Claus's increased testosterone might explain his rude aggressive behaviour towards his coach (1). When playing in a basketball match Clauses testosterone may heighten resulting in him pushing over the opposition players (1). Look for other reasonable marking points. Answers must relate to the scenario. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
2(b)	AO1 (1 mark), AO3 (1 mark) One mark for identification of a strength (AO1). One mark for justification of the strength (AO3). For example: • Dabbs and Hargrove's (1997) positive correlation showed higher levels of testosterone were found in female prisoners who were more violent (1) therefore supporting the idea that higher levels of the hormone testosterone has been associated with an increase in violent and aggressive behaviour (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
3(a)	AO2 (1 mark) One mark for stating the aim of their practical investigation in biological psychology. For example: • I aimed to find out if there is an association between height and self-rated aggression. Look for other reasonable marking points. Answers must relate to their biological practical investigation. Generic answers score 0 marks.	(1)

Question Number	Answer	Mark
3(b)	AO2 (2 marks) Up to two marks for a description of how they gathered their sample for their practical investigation in biological psychology. For example: • I put an advert on my local gym notice board asking for adults to volunteer to take part in my investigation on height and self-rated aggression (1). On the advert the volunteers were asked to meet me in the gym coffee shop at 1am on Monday to complete a questionnaire and have their height measured (1). Look for other reasonable marking points. Answers must relate to their biological practical investigation. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
3 (c)	AO2 (3 marks) Up to three marks for description of the results of their practical investigation in biological psychology. For example: From my scatter graph I observed a positive correlation between my two variables of height and self-reported aggression (1). My Spearman's value was +0.735 which exceeded the critical value of 0.648 when n=10 so I rejected the null hypothesis (1). This meant that the taller in cm a person was, the more aggressive they rated themselves (1). Look for other reasonable marking points. Answers must relate to their biological practical investigation. Generic answers score 0 marks.	(3)

Question Number	Answer	Mark
3(d)	AO2 (2 marks), AO3 (2 marks) One mark for identification of each strength/weakness (AO2). One mark for justification of each strength/weakness (AO3). For example: Strength • One strength is that by getting the gym members to fill in the self-rating aggression questionnaire themselves validity would be increased (1), as they were more likely to write down realistic answers to the aggression questions than if they had to provide verbal answers to an interviewer as they may have been embarrassed (1). Weakness • One weakness of the measure of aggression was that it was self-rated which may have been biased (1) as the answers provided by the gym members may not have been realistic as they could have provided answers that did not reflect their true aggressive behaviour (1). Look for other reasonable marking points. Answers must relate to their biological practical investigation. Generic answers score 0 marks.	(4)

Question Number	Indicative content	Mark
4	AO1 (4 marks), AO2 (4 marks) For example: Key Question: What are the implications for society if aggression is found to be caused by nature and not nurture? AO1 • Nature could include inherited genetic traits which the individual is born with and could influence their behaviour. • The Office for National Statistics reported in 2018 a 3% increase in murders which shows violent crime is increasing in society. • A Texas marine called Charles Whitman (1966) lost self-control resulting in his killing spree from which he was implicated in the deaths of over 14 people including his wife and mother. • In 2014 Luis Suarez in Brazil bit an opposing player for the third time in his football career. AO2 • A version of the inherited MAOA gene may lead some people to react to provocation by showing aggression, a part of their nature which they are unable to control so it is not their fault. • Research into brain function of murders (e.g. Raine et al., 1997) suggests that aggressive behaviour is not just caused by a single brain region and that individuals may be predisposed to violence when triggered by nurture factors. • When stimulation occurs in or around the amygdala aggressive behaviour may happen suggesting damage to Charles Whitman's amygdala may have influenced his aggressive behaviour which was a factor out of his control. • Operant conditioning suggests that rewarding aggressive behaviour through an increased media profile for biting other players might be an important nurture factor. Look for other reasonable marking points.	(8)

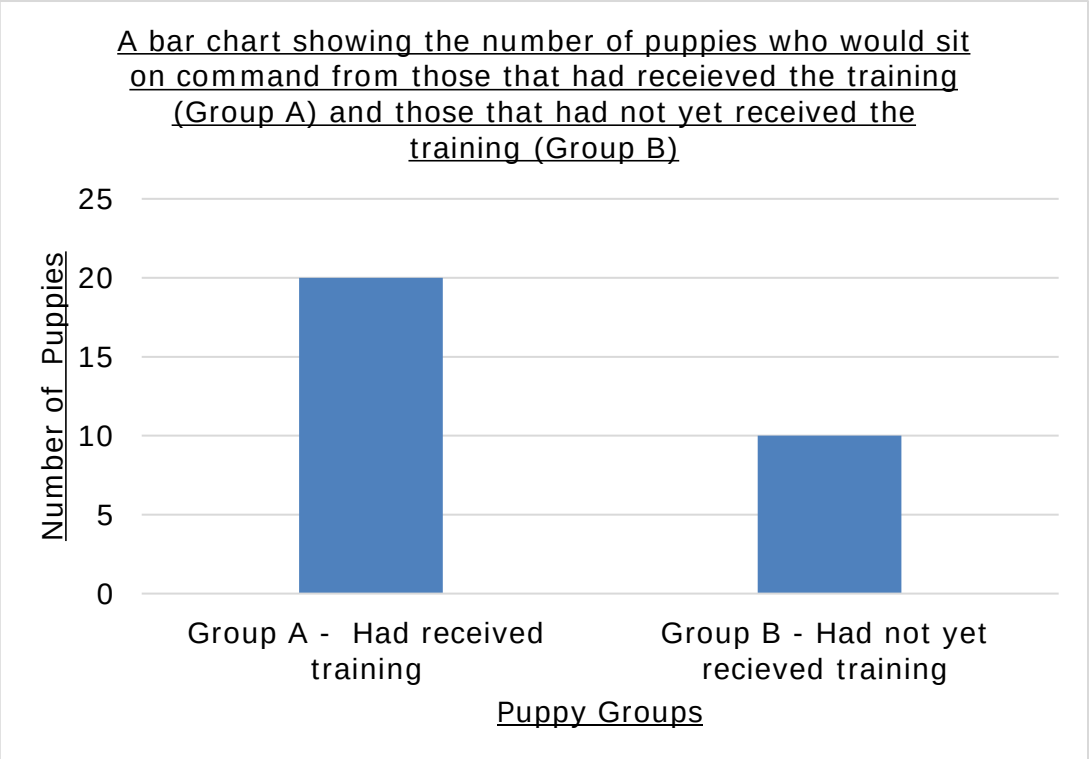
Level	Mark	Descriptor
AO1 (4 marks), AO2 (4 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs application in their answer.		
	0	No rewardable material.
Level 1	1-2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 2	3-4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Discussion is partially developed but is imbalanced or superficial occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 3	5-6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Candidates will demonstrate a grasp of competing arguments, but discussion may be imbalanced or contain superficial material supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures (AO2)
Level 4	7-8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical balanced discussion, containing logical chains of reasoning. Demonstrates a thorough awareness of competing arguments supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). (AO2)

Question Number	Answer	Mark
5 (a)	AO1 (1 mark) One mark for a definition of retention as used in social learning theory. For example: • Retention is the memory of the behaviour to be performed later by the observer (1). Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
5 (b)	AO1 (1 mark) One mark for a definition of reproduction as used in social learning theory. For example: • Reproduction is when an individual has the ability to recreate the behaviour their role model has displayed (1). Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
5(c)	AO1 (1 mark), AO3 (1 mark) One mark for identification of a strength (AO1) One mark for justification of the strength (AO3) For example: • Bandura, Ross and Ross (1961) found that children who observed an aggressive role model made more imitative aggressive actions of behaviour than the non-aggressive condition or control group (1) which supports social learning theory's ideas that people learn through observing what others do, copying their actions and in doing so learning new behaviour (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
5(d)	AO1 (2 marks), AO3 (2 marks) One mark for identification of each weakness (AO1) One mark for justification of each weakness (AO3) For example: • Brunner (1993) found high levels of aggression in males from the Netherlands also had a deficient MAOA gene (1) which is a weakness of social learning theory in that it does not consider the possibility that aggressive behaviour may have a genetic influence associated with disruption to the MAOA gene (1). • Research into social learning theory such as Bandura (1961) has been carried out with children making the results limited in generalisability (1) as the modelled behaviour displayed by the children may not be representative of adult behaviour with real life role models (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
6(a)	AO2 (3 marks) One mark for correct/appropriate title (see graph below for suitable example) One mark for correct/appropriate labelling of axes (see graph below for suitable example) One mark for correct plots of data points (see graph below for correct plotting)  Look for other reasonable marking points.	(3)

Question Number	Answer	Mark
6(b)	AO2 (4 marks)	(4)

		Observed	Expected	O-E	$(O-E)^2$	$(O-E)^2/E$
Group A: Puppies that had received the training	Puppies who sat on command.	20	15	5	25	1.67
	Puppies who did not sit on command.	5	10	-5	25	2.5
Group B: Puppies that had not yet received the training	Puppies who sat on command.	10	15	-5	25	1.67
	Puppies who did not sit on command.	15	10	5	25	2.5
					Chi-Squared =	8.34

One mark for accurate completion of O-E.
One mark for accurate completion of $(O-E)^2$ column.
One mark for accurate completion of $(O-E)^2/E$ column.
One mark for correct answer 8.34

Look for other reasonable marking points.

Question Number	Answer	Mark
6(c)	AO2 (1 mark), AO3 (1 mark) One mark for identification of a strength of using quantitative data (AO2). One mark for justification of the strength (AO3). For example: • One strength of the quantitative data used by Claire in her investigation about the dog training programme is that it provided objective, numerical data (1) which would reduce biased information from which Claire could analyse and reliably conclude its effectiveness as a dog training programme (1). Look for other reasonable marking points. Answers must relate to the scenario. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
7	AO1 (2 marks), AO3 (2 marks) One mark for identification of a strength/weakness (AO1). One mark for justification of the strength/weakness (AO3). For example: Strength • Skinner's (1948) animal studies showed rats would learn by the desired consequences of a reward to repeat a behaviour (1) which is shown by them repeatedly pressing the lever after food was presented so supports positive reinforcement in learning (1). Weakness • One weakness of operant conditioning is that it ignores hormonal imbalances as a reason for human behaviour (1) because changes in hormone levels could account for human behaviour such as aggression, and not due to the consequences of an action (1). Look for other reasonable marking points.	(4)

Question Number	Indicative Content	Mark
8	AO1 (4 marks), AO3 (4 marks) AO1 • Flooding involves a person being placed in a situation where their object of fear is present for a prolonged period. • The body physically reacts to the phobic situation with increased heart rate and blood pressure which after a short while should become regular again. • Flooding can be either in vivo which is exposure to the actual phobic object or in vitro which is exposure to an imagined phobic object. • The phobic sufferer has no means to remove themselves from this situation and through continuous exposure their anxiety level eventually decreases. AO3 • Wolpe (1973) used the therapy with a girl who was afraid of cars, taking her on a drive for several hours until she calmed down, showing flooding is effective in treating phobias. • A concern of flooding is the ethical and moral issue of treating a phobia by putting a client purposely in a fearful, frightening situation which can be very distressing. • Flooding can show a more immediate change in the reduction of phobic symptoms compared to other forms of therapy, such as cognitive behavioural therapy, which could take numerous sessions to get to the same outcome. • Exposure to the feared stimuli is more gradual in systematic desensitisation where the client has greater control over exposure, so may be seen as a more ethical way to treat a phobia. Look for other reasonable marking points.	(8)

Level	Mark	Descriptor
AO1 (4 marks), AO3 (4 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.		
	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
9	AO1 (6 marks), AO3 (6 marks) AO1 • Raine et al.'s (1997) study examined the brains of 41 people who pleaded Not Guilty by Reason of Insanity (NGRI) and compared these to 41 controls. • The participants in Raine's study were matched for sex, had a mean age of 31.7 years for the control and 34.3 for NGRI group, and did not take their medication for a period before the study. • A PET scan was used to measure the brain activity in the 4 cortical and sub-cortical regions of the participants in Raine's study when completing the CPT task. • Watson and Rayner's (1920) sample consisted of one boy who was 9 months old at the start and 12 months 21 days at the end of the study. • Little Albert was presented with a variety of objects such as a white rat, a rabbit, a monkey amongst other stimuli during the procedure. • In the laboratory procedure every time the rat was placed in his hand, they banged the hammer on the metal bar behind him. AO3 • The sample of participants charged with murder in Raine's study was a unique representation of the target population, which increases generalisability to those pleading NGRI. • The matched controls used in terms of sex, age, medication indicate that Raine's study was not influenced by these individual differences therefore increasing the validity of the results. • The PET scans in Raine's study measured the brains of participants whilst completing a Continuous Performance task (CPT) which is unrealistic compared to committing a real-life event such as murder therefore reducing the validity of the scan results to real life. • The study used only Little Albert in the sample which is not generalisable to the entire population as his	(12)

	behaviour would not represent those of females or adults. • Little Albert initially showed no fear to the white rat, so the researchers could be sure that the emotional responses shown after pairing the rat with the loud noise were due to the associative learning, increasing validity. • The laboratory that Little Albert was tested in reduced ecological validity as this artificial setting is not a natural environment to test how phobias would be conditioned in real life. Look for other reasonable marking points.	

Level	Mark	Descriptor
AO1 (6 marks), AO3 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.		
	0	No rewardable material.
Level 1	1-3 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	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 superficial conclusion being made. (AO3)
Level 3	7-9 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	10-12 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)