Mark Scheme (Results)

June 2016

GCE PSYCHOLOGY (8PS0)
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 last candidate in exactly the same way as they mark the first.

• Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than be penalised for omissions.

• Examiners should mark according to the mark scheme – not according to their perception of where the grade boundaries may lie.

• 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/indicative content will not be exhaustive.

• In a levels-based mark scheme there are two distinct parts – the indicative content and the levels descriptors:

o Indicative content is exactly that – they are factual points that candidates are likely to use to construct their answer. It is possible for an answer to be constructed without mentioning some or all of these points, as long as they provide alternative responses to the indicative content that fulfils the requirements of the question. It is the examiner's responsibility to apply their professional judgement to the candidate's response in determining if the answer fulfils the requirements of the question.

o The mark grid identifies which assessment objective is being targeted by each bullet point within the level descriptors, and describes the ways in which they will be evidenced across the ability range.

• When deciding how to reward an answer using a levels based mark scheme, the 'best fit' approach should be used:

o Examiners should first decide which descriptor most closely matches the candidate answer and place it in that band.

o The mark awarded within the band according to each of the assessment objectives will be decided according to how securely all bullet points are displayed at that level.

o In cases of uneven performance, this will still apply. Candidates will be placed in the band that best describes their answer, and they will be awarded marks towards the top or bottom of that band depending how securely they have evidenced bullet points in that, or other descriptors.

• Detailed guidance how to apply all mark schemes, with exemplars for this unit, will be given at standardisation.

• When examiners are in doubt regarding the application of the mark scheme to a candidate's response, a team leader must be consulted before a mark is given.

• Crossed-out work should be marked unless the candidate has replaced it with an alternative response.

GCE Advanced-Level Psychology Paper 2 Mark Scheme

SECTION A

Question Number	Answer	Mark
1(a)(i)	AO1 (1 mark) • Frontal lobe / frontal (1) Look for other reasonable ways of expressing the frontal lobe.	(1)

Question Number	Answer	Mark
1(a)(ii)	AO1 (1 mark) • Parietal lobe / parietal (1) Look for other reasonable ways of expressing the parietal lobe.	(1)

Question Number	Answer	Mark
1(a)(iii)	AO1 (1 mark) • Temporal lobe / temporal (1) Look for other reasonable ways of expressing the temporal lobe.	(1)

Question Number	Answer	Mark
1(b)	AO1 (2 marks), AO3 (2 marks) One mark for each weakness identified (AO1). One mark for justification of each weakness (AO3). For example: - fMRI scanning takes place in an artificial setting which lowers ecological validity (1). This means that participants may not show natural behaviour due to the situation being different to everyday life (1). - fMRI scanning is not practical for those with pace makers (1) as the magnetic field can cause physical disruption (to the heart) (1) Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
2(a)	AO2 (2 marks) One mark for a partially correct operationalised null hypothesis. Two marks for a fully correct operationalised null hypothesis. For example: - There will be no relationship between temperature and aggression and any relationship will be due to chance. (1) - There will be no relationship between average temperature (in degrees Celsius) and the number of aggressive incidents. Any relationship will be due to chance. (2) Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
2(b)	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) **Scattergraph to show the relationship between average temperature and number of aggressive incidents**	(3)

Question Number	Answer	Mark
2(c)	AO2 (1 mark) One mark for correctly stating the relationship shown. For example: • There is no relationship between average temperature and number of aggressive incidents. (1) Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
2(d)	AO2 (4 marks)	(4)

Average temperature (degrees Celsius)	Rank 1	No. of aggressive incidents	Rank 2	D	d^2
20	9	11	4	5	25
13	7	20	9	-2	4
10	5	4	1	4	16
7	1.5	18	7.5	6	36
7	1.5	11	4	-2.5	6.25
8	3	11	4	-1	1
9	4	14	6	-2	4
11	6	6	2	4	16
14	8	18	7.5	0.5	0.25
				Total:	108.5

One mark for accurate completion of column d (minus signs can be present or not for the mark).

One mark for accurate completion of d².

One mark for substituting into equation

$$1 - \frac{6 \times 108.5}{9\,(81\text{-}1)}$$

One mark for 0.096 (to 3 d.p.) / 0.10 (to 2 d.p.)

Look for other reasonable marking points.

Question Number	Answer	Mark
2(e)	AO1 (2 marks), AO3 (2 marks)	(4)
	One mark for each strength/weakness identified (AO1). One mark for justification of that strength/weakness (AO3). For example: Strength • Correlations may show a relationship between two variables that was not expected (1). This can then lead to further research into aggression and possible experimentation of aggressive responses to different stimuli (1). Weakness • The correlation method lacks cause and effect (1) because the researcher cannot be confident that environmental temperature actually led to a direct change in the level of aggression (1). Look for other reasonable marking points.	

Question Number	Indicative content	Mark

3.	AO1 (4 marks), AO3 (4 marks)
	AO1
	• Definition of evolution (e.g. evolution is the process of change in all forms of life over generations)
	• Genetic link to aggression (e.g. genetic changes lead to differences in observable and unobservable traits such as aggressive behaviour)
	• **'Survival of the fittest' linked to aggression (e.g.** aggression has been passed on by those who have been successful in reproduction and survival)
	• Epigenetic principle applied to aggression (e.g. a combination between the genotype and environment has led to aggression being observable in the phenotype)
	• Aggression as an evolved solution to adaptive problems (e.g. prevention of infidelity, access otherwise inaccessible partners, social status)
	
	AO3
	• Supporting research for genetic link to aggression, e.g.
	  o Chester et al. (2015): Low functioning MAOA **genotype ('warrior gene') was linked to greater** aggression
	  o Mertins et al. (2011): High functioning MAOA genotype was associated with greater prosocial behaviour
	• Supporting research for aggression as an evolved solution to adaptive problems, e.g.
	  o Daly, Wilson, Weghorst (1982): Domestic abuse to dissuade romantic partners from infidelity;
	  o Thornhill & Palmer (2000): Hypothesise humans have evolved adaptations to rape to obtain otherwise inaccessible partners although evidence is limited (e.g. Buss, 2003);
	  o Hill & Hurtado (1996): Aggression leads to increase in social status in the Yanomamö tribe in Venezuela
	• Alternative theories, e.g.
	  o Learning theory as an alternative - aggressive behaviour may be observed and imitated from same-sex role models;
	  o Instinct theory as an alternative - aggressive energy is an instinctive drive that builds up until it explodes
	
	Look for other reasonable marking points.
		(8)

Level	Mark	Descriptor
Candidates must demonstrate an equal emphasis between knowledge and understanding vs assessment/conclusion in their answer.		
	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
4(a)	AO1 (1 mark) One mark for a factor stated. For example: • A study that produces quantitative data that can be analysed is scientific. (1) Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
4(b)	AO2 (2 marks), AO3 (2 marks) One mark for each suitable application **of Pavlov's study (AO**2). One mark for each suitable justification of scientific status of **Pavlov's study (AO3).** For example: • **The dogs' response to the metronome/footsteps was** measured in a controlled, artificial setting (1) to minimise situational variables which increases internal validity **which is scientific (1). Pavlov's study could be easily** replicated with other dogs to see if salivation can be classically conditioned (1), which is scientific as the findings can be tested for reliability to see if there is consistency in the results (1). **No credit for points not directly linked to Pavlov's study.** Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
4(c)	AO2 (1 mark), AO3 (1 mark) One mark for relevant application of **Pavlov's** study (AO2). One mark for justification of relevant improvement (AO3). For example: **Pavlov's study could be improved by using humans** instead of dogs (1). Using humans would make the findings more generalisable to other humans as they share more similar genes and environment (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
5(a)	AO2 (2 marks) One mark for stating each of the IV and DV. **No credit for one word variables (e.g. 'fixed')** • IV: Different amounts of food (variable ratio) or Specific amounts of food (fixed ratio) • DV: Time taken (in seconds) to complete the maze	(2)

Question Number	Answer	Mark
5(b)	AO1 (1 mark), AO2 (1 mark) One mark for describing a relevant ethical issue (AO1). One **mark for application of relevant ethical issue to Zaid's study** (AO2) For example: • One ethical issue to consider is that the animals have appropriate care and accommodation (1). Zaid would have to ensure that the rats have sufficient food, cage size and freedom of movement during his study (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
5(c)	AO1 (2 marks), AO3 (2 marks) One mark for each relevant weakness identified (AO1). One mark for justification of each relevant weakness (AO3) For example: • One weakness of using animals is that they have a different genotype to humans (1). Rats have a different number of chromosomes than humans so the generalisability of the findings will be limited (1). • One weakness of using animals is that studies take place in artificial surroundings for the animal (1). This may change the behaviour of the rats so the results lack validity (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
6(a)	AO2 (4 marks) Up to four marks for relevant description of operant conditioning to Jack (AO2). For example: • **Jack's parents could use positive reinforcement by giving** him a sticker when he uses the potty/toilet, which is a reward to encourage him to use the potty/toilet again (1). A sticker would be an example of a secondary reinforcer or they could give him food, which is a primary reinforcer **(1). Jack's parents could remove vegetables from his dinner, which Jack doesn't like (1).** They could shout at **him when he doesn't use the** potty/toilet, which is punishment to discourage him from using a nappy (1). Look for other reasonable marking points. Answers must relate to the scenario. Generic answers score 0 marks.	(4)

Question Number	Answer	Mark
6(b)	AO1 (1 mark), AO2 (1 mark) One mark for a relevant piece of information used from **Bandura's study** (AO1). One mark for relevant application **to Jack's scenario (AO2).** For example: • Bandura found children would observe and imitate aggressive behaviour towards a Bobo doll (1) and Jack may observe his parents using the toilet so imitate this behaviour (1). Look for other reasonable marking points. Answers must relate to the scenario. Generic answers score 0 marks.	(2)

Question Number	Indicative content	Mark

7	AO1 (4 marks), AO3 (4 marks)
	
	AO1
	• SD involves client being introduced to the phobic object whilst inducing a relaxation response
	• The client is given relaxation training through hypnosis / drugs / muscle control
	• A hierarchy of anxiety provoking situations is drawn up between therapist and client
	• Client moves through each stage of the hierarchy replacing anxiety with relaxation
	
	AO3
	• Studies investigating the effectiveness of systematic desensitisation, e.g.
	   o Capafóns et al. (1998): phobia of flying
	   o Iglesias et al. (2013): driving phobia
	   o Lang et al. (1963): snake phobia
	   o McGlynn et al. (1999): in vivo snake phobia
	• Marks (1975) concluded that systematic desensitization with relaxation is no more effective than graded exposure **so proposed 'exposure therapy' as a replacement**
	• In vivo exposure therapy is typically more effective than in vitro, relaxation, imaginal, and cognitive therapy (e.g. Wolitzky-Taylor et al., 2008)
	• SD lacks validity to real life situations although the use of virtual reality (VR) or hypnosis-guided SD (HGSD) can be used
	
	Look for other reasonable marking points.
		(8)

Level	Mark	Descriptor
		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)

SECTION C

Question Number	Indicative content	Mark
8	AO1 (6 marks), AO3 (6 marks)	(12)

AO1
- Drug-taking role models would influence taking recreational drugs
- Positive reinforcement in terms of rewarding drug effects will repeat the drug taking
- Rewarding effects of the drugs could stimulate the dopamine reward pathway
- Heroin increases dopamine and endorphins which blocks pain and gives euphoric feelings
- Association of pleasure from recreational drugs with drug equipment/friends as proposed by classical conditioning
- Individuals may inherit a genotype predisposing them to taking recreational drugs

AO3
- Studies show that aggression is modelled (e.g. Bandura, 1961, 1963) so people may imitate drug taking behaviour which is a choice
- Choice of role models (SLT) is influenced by a number of factors (e.g. gender, status) which could indicate it is a choice
- The positive effects of drugs encourages more drug taking to continue getting the positive effects so is a choice
- Use of recreational drugs may be treated by choice using aversion therapy by pairing a drug with a negative stimulus
- Drug taking is not a choice due to physical changes in the brain caused by repeated stimulation of the dopamine reward pathway
- Raine et al. (1997) showed murderer brains functioned differently so this might be the case with drug addicts so it is not a choice
- Studies (e.g. Lynskey et al., 2002) indicate drug (e.g. cannabis) dependence could be (somewhat) accounted for by genetic factors which is not a choice

Look for other reasonable marking points.

Level	Mark	Descriptor
3	Candidates must demonstrate an equal emphasis between knowledge and understanding vs judgement/conclusion in their answer.	
	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 a balanced judgement/decision. (AO3)