

Mark Scheme

June 2017

Pearson Edexcel GCE  
In Psychology (8PS0)  
PAPER 2: Biological Psychology  
and Learning Theories

## **Edexcel and BTEC Qualifications**

Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information, please visit our website at [www.edexcel.com](http://www.edexcel.com)

Our website subject pages hold useful resources, support material and live feeds from our subject advisors giving you access to a portal of information. If you have any subject specific questions about this specification that require the help of a subject specialist, you may find our Ask The Expert email service helpful.

[www.edexcel.com/contactus](http://www.edexcel.com/contactus)

## **Pearson: helping people progress, everywhere**

Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: [www.pearson.com/uk](http://www.pearson.com/uk)

June 2017

Publications Code 20178PS02

All the material in this publication is copyright © Pearson Education Ltd 2017

# 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:
  - 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.
  - 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, a 'best fit' approach should be used:
  - Examiners should first decide which descriptor most closely matches the candidate answer and place it in that band.
  - 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.
  - 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 AS Level Psychology 8PS0/02 Mark Scheme 1706

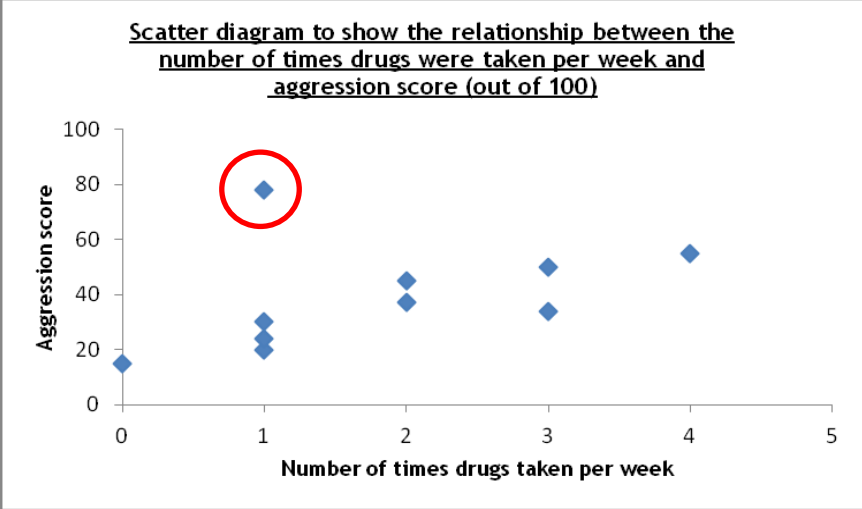
**SECTION A**

Question Number	Answer	Mark
<b>1(a)</b>	<p style="text-align: center;"><b>AO1 (4 marks)</b></p> <p>One mark for each point about the procedure of a twin study. For example: Gottesman and Shields (1966)</p> <ul style="list-style-type: none"> <li>• Case histories for twins were collected for twins born between 1893 and 1945 from the Maudsley and Bethlem Royal Joint Hospital (1). Zygosity was determined by a combination of blood tests, finger-print analysis and resemblance in appearance (1). Tape-recorded 30 minute samples from semi-structured interviews were conducted to assess signs of schizophrenia, attitudes toward self, parents and twin, and ego strength (1). Concordance rates were assessed for MZ and DZ twins of Grade 1 (both twins schizophrenic), or Grade 2 or 3 where only one twin had schizophrenia (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
<b>1(b)</b>	<p style="text-align: center;"><b>AO1 (2 marks), AO3 (2 marks)</b></p> <p>One mark for each strength/weakness identified (AO1). One mark for justification of that strength/weakness (AO3). For example: Gottesman and Shields (1966)</p> <ul style="list-style-type: none"> <li>• A strength of the Gottesman and Shields study was that it assessed zygosity using primary data (1). Using finger print analysis and blood samples are a valid way of assessing zygosity of twins (1).</li> <li>• One weakness is that the study excluded participants from Ghana, Jamaica, and Barbados (1). This means the sample lacks generalisability as the participants would not be representative of non-Western cultures (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
2(a)(i)	<p style="text-align: center;"><b>AO2 (1 mark)</b></p> <p>One mark for identification of the sampling method used.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>The sampling method is volunteer sampling (1).</li> </ul> <p><b>Look for other reasonable ways of expressing the sampling method.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
2(a)(ii)	<p style="text-align: center;"><b>AO2 (2 marks), AO3 (2 marks)</b></p> <p>One mark for each strength/weakness identified from Hinnah's study (AO2). One mark for justification of each strength/weakness (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>One strength is that Hinnah's participants put themselves forward to take part in the study about drugs (1) so Hinnah will not have to spend as much time selecting her participants compared to random sampling (1).</li> <li>One weakness is that participants may only want to participate if they do not take drugs/take legal drugs (1). This would mean her sample may not be representative of the students in Hinnah's college which means the study would lack generalisability (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Generic answers score 0 marks.</b></p>	<b>(4)</b>

Question Number	Answer	Mark																				
2(b)	<p style="text-align: center;"><b>AO2 (1 mark)</b></p> <p>One mark for identification of the outlier.</p> <div style="text-align: center;"> <p><u>Scatter diagram to show the relationship between the number of times drugs were taken per week and aggression score (out of 100)</u></p>  <table border="1" style="margin: 10px auto;"> <caption>Data points from the scatter diagram</caption> <thead> <tr> <th>Number of times drugs taken per week</th> <th>Aggression score</th> </tr> </thead> <tbody> <tr><td>0</td><td>15</td></tr> <tr><td>1</td><td>20</td></tr> <tr><td>1</td><td>25</td></tr> <tr><td>1</td><td>78</td></tr> <tr><td>2</td><td>38</td></tr> <tr><td>2</td><td>45</td></tr> <tr><td>3</td><td>35</td></tr> <tr><td>3</td><td>50</td></tr> <tr><td>4</td><td>55</td></tr> </tbody> </table> </div> <p><b>Look for other reasonable ways of identifying the outlier.</b></p>	Number of times drugs taken per week	Aggression score	0	15	1	20	1	25	1	78	2	38	2	45	3	35	3	50	4	55	(1)
Number of times drugs taken per week	Aggression score																					
0	15																					
1	20																					
1	25																					
1	78																					
2	38																					
2	45																					
3	35																					
3	50																					
4	55																					

Question Number	Answer	Mark
2(c)	<p style="text-align: center;"><b>AO2 (1 mark), AO3 (1 mark)</b></p> <p>One mark for identification of an appropriate conclusion for Hinnah's study (AO2)  One mark for justification of the conclusion (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Hinnah could conclude that taking drugs influences levels of aggression (1) because more frequent consumption of drugs is correlated with greater levels of aggression (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	(2)

Question Number	Answer	Mark
3(a)(i)	<p style="text-align: center;"><b>AO1 (1 mark)</b></p> <ul style="list-style-type: none"> <li>• Dendrite</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
3(a)(ii)	<p style="text-align: center;"><b>AO1 (1 mark)</b></p> <ul style="list-style-type: none"> <li>• Synapse / synaptic terminal / axon terminal</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
3(b)	<p style="text-align: center;"><b>AO2 (3 marks)</b></p> <p>Up to three marks for explanation of the effects of recreational drugs in relation to Tina's scenario.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Tina could consume drugs which will affect her synaptic functioning by increasing or decreasing neurotransmitters which will impact on her level of stress (1). Alcohol would increase serotonin to make Tina feel happier about her situation (1). However, alcohol would also increase GABA which would make Tina's memory less efficient and could make her revision for her exams more difficult (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
4.	<p style="text-align: center;"><b>AO1 (4 marks), AO3 (4 marks)</b></p> <p>AO1</p> <ul style="list-style-type: none"> <li>• PET scans investigate brain activity when a human is doing a task</li> <li>• PET involves injecting a radioactive tracer into the participant</li> <li>• fMRI records brain activity and produces an anatomical picture of the brain</li> <li>• CAT scans use multiple X-rays to produce a cross-sectional image of brain regions</li> </ul> <p>AO3</p> <ul style="list-style-type: none"> <li>• Brain scanning lacks ecological validity as it takes place in an artificial setting</li> <li>• Frequent exposure to radiation could mean brain scanning could be unethical</li> <li>• Raine et al. (1997) found differences in murderer brain activity using PET scans showing their contribution</li> <li>• Brain scans can be repeated easily to test for reliability in findings about human behaviour</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>



Level	Mark	Descriptor
	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 B

Question Number	Answer	Mark
<b>5(a)</b>	<p style="text-align: center;"><b>AO2 (2 marks)</b></p> <p>One mark for each reinforcer correctly identified.</p> <p>Primary reinforcer</p> <ul style="list-style-type: none"> <li>• Free hot drink. (1)</li> </ul> <p>Secondary reinforcer</p> <ul style="list-style-type: none"> <li>• Cup shaped stamps. (1)</li> </ul> <p><b>Look for other reasonable ways of expressing the primary and secondary reinforcer.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>5(b)</b>	<p style="text-align: center;"><b>AO1 (2 marks), AO2 (2 marks)</b></p> <p>One mark for identification of each schedule of reinforcement that could be used, up to a maximum of two marks (AO1)</p> <p>One mark for each application of the schedule of reinforcement to Jayne's scenario, up to a maximum of two marks (AO2)</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• A fixed interval schedule is where a reward is given after specified amounts of time such as once a month (1). Jayne could give a stamp to every customer on the first of each month if they have bought a coffee at some point during the month (1). A variable ratio schedule is where a different amount of reward is provided after a desired behaviour (1). So Jayne could give a different amount of stamps for each product they buy from her cafe (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
6(a)	<p style="text-align: center;"><b>AO2 (2 marks)</b></p> <p>Up to two marks for the aim of their practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• The aim was to see whether gender affected obedience (1).</li> <li>• The aim was to see if more males or females turned off their mobile phones when asked to by a teacher (2).</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>(2)</b>

Question Number	Answer	Mark
6(b)	<p style="text-align: center;"><b>AO2 (3 marks)</b></p> <p>Up to three marks for a description of the results of their quantitative data analysis for their practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• 'Male disobey' was the highest number with 13 tally marks, whereas 'female disobey' was the lowest with 3 tallies (1). The calculated value of my Chi Squared test was 3.12 for a one-tailed test at <math>p=0.05</math> (1). This was greater than the critical value of 2.71 so I rejected my null hypothesis and found a difference between males and females in obedience (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
6(c)	<p style="text-align: center;"><b>AO2 (2 marks), AO3 (2 marks)</b></p> <p>One mark for each strength identified up to a maximum of two marks (AO2).  One mark for justification of each strength up to a maximum of two marks (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• One strength was that students were observed using their phones in their natural setting of the college (1). This meant that they are likely to act normally to the command to put their phone away so the study has higher ecological validity (1).</li> <li>• A second strength was that watching student's make a decision whether or not to put their phone away was easily replicable (1). This means I could easily repeat my observation of male/female obedience regarding putting their phone away on another day so can test for reliability (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>(4)</b>

Question Number	Answer	Mark
7(a)	<p style="text-align: center;"><b>AO2 (4 marks)</b></p> <p>Up to four marks for an explanation of social learning theory in relation to Hugo's behaviour.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Hugo may have observed his father speeding who was his role model (1). He had the ability to reproduce the speeding as he recently passed his driving test and has a car (1). He may have found speeding exciting and therefore was internally motivated to speed again in the future (1). Hugo's friends may have praised him for his fast driving so this provided external motivation to reproduce the speeding behaviour (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
7(b)	<p style="text-align: center;"><b>AO1 (1 mark), AO3 (1 mark)</b></p> <p>One mark for a weakness identified (AO1). One mark for justification of that weakness (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• One weakness of social learning theory is that it ignores hormonal imbalances as a reason for human behaviour (1), so biological theory may account for human behaviour that has not been learnt through observation (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(2)</b>

Question Number	Indicative content	Mark
8	<p style="text-align: center;"><b>AO1 (4 marks), AO3 (4 marks)</b></p> <p>AO1</p> <ul style="list-style-type: none"> <li>• Classical conditioning assumes learning is by association</li> <li>• Natural reflexes are paired with neutral stimuli</li> <li>• Repeated association of the UCS and NS lead to the NS becoming the CS which causes the CR</li> <li>• Repeated pairing of an emetic drug with alcohol can lead to alcohol causing nausea</li> </ul> <p>AO3</p> <ul style="list-style-type: none"> <li>• Watson and Rayner (1920) claimed they conditioned a child to fear various objects</li> <li>• Capafóns et al. (1998) used SD which is based on classical conditioning to treat patients who had a phobia of flying</li> <li>• SD lacks validity to real life situations although the use of virtual reality (VR) or hypnosis-guided SD (HGSD) can be used</li> <li>• Pavlov's (1927) study is used as evidence for classical conditioning but used dogs so has limited generalisability to humans</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
	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
<b>9</b>	<p style="text-align: center;"><b>AO1 (6 marks), AO3 (6 marks)</b></p> <p>AO1</p> <ul style="list-style-type: none"> <li>• Raine et al. (1997) aimed to see whether murderers had different brain activity to non-murderers</li> <li>• They used PET scans to examine the level of activity in the left and right hemispheres of 41 murderers</li> <li>• Murderers had less activity in their prefrontal and parietal brain regions, more activity in their occipital areas, and no difference in their temporal areas.</li> <li>• Bandura (1961, 1963) investigated the impact of adult role models on children’s aggressive behaviour</li> <li>• 72 children (1961 study) observed either same-sex or different sex role models acting aggressively or non-aggressively with a Bobo doll</li> <li>• They found children were more likely to copy same-sex role models and modelled aggressive behaviour</li> <li>• Bandura (1965) looked at the influence of vicarious reinforcement with children watching an aggressive film where the model is punished, rewarded, or given no consequence</li> </ul> <p>AO3</p> <ul style="list-style-type: none"> <li>• Raine et al. (1997) could be used to match murderer brain activity to others and attempt to prevent future murders</li> <li>• The study used a PET scan in an artificial setting so lacks ecological validity</li> <li>• It has limited generalisability although with such a niche group it is perhaps representative</li> <li>• Bandura (1961, 1963) could provide evidence for prosocial role models in society, e.g. celebrities</li> <li>• Bandura (1965) shows censorship is required on television and video games</li> <li>• Bandura did not examine the potential contribution of genes in predisposing violent behaviour</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(12)</b>



Level	Mark	Descriptor
	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 balanced. (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)

June 2017

For more information on Edexcel and BTEC qualifications please  
visit our websites: [www.edexcel.com](http://www.edexcel.com) and [www.btec.co.uk](http://www.btec.co.uk)

Edexcel is a registered trademark of Pearson Education Limited

Pearson Education Limited. Registered in England and Wales No. 872828  
Registered Office: Edinburgh Gate, Harlow, Essex CM20 2JE.  
VAT Reg No GB 278 537121