GradeMax



Mark Scheme (Results)

October 2017

Pearson Edexcel International GCE in Psychology (WPS02)

PAPER 2: Biological Psychology, Learning Theories and Development

GradeMax

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. 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

November 2017

Publications Code WPS02_01_1710_MS

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 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.

Paper WPS02 mark scheme
October 2017

Section A

Question Number	Answer	Mark
1	**AO2 (3 marks)** Credit up to **three** marks for an accurate description in relation to scenario. For example: • Charong's spinal cord sent a message that the pan was hot from his skin to his brain (1). The brain processed this message as the pan was burning his hand (1). This message passed back through neurons meaning Charong dropped the pan (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(3)**

<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>2(a)</td><td>

AO2 (4 marks)

For example:

<table>
<tr><th></th><th>Average number of hours sleep in a night</th><th>Rank 1</th><th>Number of aggressive acts in a week</th><th>Rank 2</th><th>d</th><th>d²</th></tr>
<tr><td>A</td><td>8</td><td>4</td><td>3</td><td>3.5</td><td>0.5</td><td>0.25</td></tr>
<tr><td>B</td><td>10</td><td>8</td><td>5</td><td>6</td><td>2</td><td>4</td></tr>
<tr><td>C</td><td>6.5</td><td>2</td><td>3</td><td>3.5</td><td>-1.5</td><td>2.25</td></tr>
<tr><td>D</td><td>7</td><td>3</td><td>0</td><td>1</td><td>2</td><td>4</td></tr>
<tr><td>E</td><td>9</td><td>6.5</td><td>6</td><td>7</td><td>-0.5</td><td>0.25</td></tr>
<tr><td>F</td><td>8.5</td><td>5</td><td>4</td><td>5</td><td>0</td><td>0</td></tr>
<tr><td>G</td><td>5</td><td>1</td><td>2</td><td>2</td><td>-1</td><td>1</td></tr>
<tr><td>H</td><td>9</td><td>6.5</td><td>9</td><td>8</td><td>-1.5</td><td>2.25</td></tr>
</table>

One mark for calculating d²;

One mark for calculating six times the sum of d²; 84

One mark for calculating six times the sum of d² divided by n(n²-1); 0.16666666 or 0.166 or 0.167

One mark for calculating Spearman’s Rank test result to two decimal places; 0.83

Look for other reasonable marking points.

</td><td>(4)</td></tr>
</table>

Question Number	Answer	Mark
2(b)	**AO1 (2 marks), AO3 (2 marks)** Credit **one** mark for accurate identification of one strength and one weakness. (AO1) Credit **one** mark for justification/exemplification of one strength and one weakness. (AO3) For example: **Strength** • Correlations are useful if researchers are not sure if there is a relationship between two variables (1) so lead to new areas of experimental research if the results are significant (1). **Weakness** • Correlations do not determine cause and effect (1) so researchers cannot be sure if there is another variable which affects the two variables being measured (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
3(a)	**AO2 (3 marks)** Credit up to **three** marks for an accurate description in relation to scenario. For example: • Tariro's father may have the MAOA gene, causing him to fight, and he passed it onto Tariro at conception (1). The presence of the MAOA gene means that Tariro does not metabolise serotonin effectively (1). This leads to Tariro having low levels of serotonin and these low levels of serotonin cause him to fight (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(3)**

Question Number	Answer	Mark
3(b)	**AO1 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of one weakness. (AO1) Credit **one** mark for justification/exemplification of one weakness. (AO3) For example: • It is reductionist as it ignores the effects of the environment on aggression (1). It may be that the MAOA genes makes someone more predisposed to be aggressive but that environmental factors such as relationships with parents trigger the aggression (1) **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
4(a)	**AO1 (1 mark)** Credit o**ne** mark for accurate statement. For example: • They aimed to find out if murderers pleading not guilty due to reasons of insanity had brain dysfunction in the prefrontal cortex (1) **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Mark
4 (b)	**AO1 (1 mark) A03 (1 mark)** Credit **one** mark for accurate identification of one improvement. (AO1) Credit **one** mark for justification/exemplification of one improvement. (AO3) For example: • Raine et al. (1997) could have included murderers who did not plead not guilty due to insanity (1). This would have made the sample more representative and allowed the results to be generalised to all types of murderers (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
5 (a)	**AO2 (2 marks)** Credit up to **two** marks for an accurate description in relation to scenario. For example: • Gabriella could have put a notice up in the school's canteen asking for volunteers for her experiment (1). Then any of the 11 year olds who were interested in taking part in the experiment would go to the room stated on the notice (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
5(b)	**AO2 (2 marks)** Credit up to **two** marks for an accurate description in relation to scenario. For example: • Some of the eleven year olds may become stressed when taking a mathematics test (1) therefore using a volunteer sample means that they will not put themselves forward as participants so Gabriella's experiment is more ethical (1) **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
5(c)	**AO1 (1 mark), A03 (1 mark)** Credit **one** mark for accurate identification of one weakness. (AO1) Credit **one** mark for justification/exemplification of one weakness. (AO3) For example: • The sample may be made up of participants who want to be helpful as they volunteered (1). Therefore it may not represent the target population so the results may not be generalisable (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
5 (d)	**AO1 (1 mark)** Credit **one** mark for accurate identification. For example: • Another sampling technique is the random sampling method (1) **Look for other reasonable marking points.**	**(1)**

Question Number	Indicative content	Mark
6	**AO1 (4 marks), AO3 (4 marks)** AO1 • The body's internal pacemaker is in the hypothalamus. • Melatonin is produced on a 24 hour cycle, when it starts to get dark. • An increase in melatonin leads to a person feeling sleepy. • A person's core body temperature is usually at its highest during the day causing wakefulness. AO3 • Ralph et al. (1990) found that hamsters went to a 21 hour sleep wake cycle when given the SCN of hamsters who naturally had a 21 hour sleep wake cycle, showing internal pacemakers are important. • This is an animal study and may not be generalisable to humans as internal pacemakers may not be as important in humans. • The sleep wake cycle may be affected by endogenous pacemakers such as light showing other factors are involved in the regulation of sleep. • Boivin et al. (1996) found that bright artificial light advanced the sleep wake cycle by five hours showing endogenous pacemakers also have an effect as well as internal pacemakers. **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
7(a)	**AO2 (4 marks)** Credit up to **four** marks for an accurate description in relation to scenario. For example: • Amelia and her therapist would investigate Amelia's personality and how it has formed due to her relationship with her parents (1). The therapist would observe how Amelia is relating to her/him which would inform the therapist about how Amelia relates to other people (1). The therapist would also monitor how they are responding to Amelia as it would give insight into how Amelia's husband may relate to Amelia (1). The therapist would then tell Amelia about their relationship so Amelia can use this analysis to improve her relationship with her husband (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
7(b)	**AO1 (2 marks), AO3 (2 marks)** Credit **one** mark for accurate identification of one strength and one weakness. (AO1) Credit **one** mark for justification/exemplification of one strength and one weakness. (AO3) For example: **Strength** • It allows the client to gain insight into their issues so looking at the causes of their behaviour (1) which means that it is more likely the issues will not return as the reasons for them have been addressed (1). **Weakness** • Object relations therapy may not be appropriate for some clients as it takes years (1), this may be too long if the client has an issue, such as addiction, that needs to be addressed quickly so may cause more harm in such cases (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
8(a)	**AO2 (4 marks)** Credit up to **four** marks for an accurate description in relation to the scenario. For example: • Mateo will define what is meant by gender stereotypes, such as women being used to advertise cleaning products (1). He will then decide which adverts to watch, such as adverts that are shown between 7pm and 9pm (1). Mateo may use event sampling so that every time he sees a behaviour that fits his definitions he will make a mark on his tally chart (1). Mateo may record the adverts and then watch them twice to ensure his results are the same both times (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
8 (b)	**AO2 (1 mark)** Credit **one** mark for an accurate statement in relation to the scenario. For example: • Mateo collected nominal data of stereotyped behaviours so it is the most appropriate measure of central tendency (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(1)**

Question Number	Answer	Mark
8(c)	**AO2 (2 marks)** Credit up to **two** marks for accurate reasons in relation to scenario. For example: • Mateo was looking for a difference in the numbers of males and females used in stereotypical advertisements (1). • Mateo used an independents groups design of either male or female (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
9(a)	**AO1 (1 mark)** Credit **one** mark for accurate statement. For example: Prot (2014) • Aimed to investigate whether increased use of pro-social media would lead to an increase in helping behaviour. (1) Bastian et al. (2011) • Aimed to study whether playing violent video games would lead to participants seeing themselves as less human. (1) **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Mark
9 (b)	**AO1 (2 marks), AO3 (2 marks)** Credit up to **two** marks for accurate identification of each weakness. (AO1) Credit up to **two** marks for justification/exemplification of each weakness. (AO3) For example: Prot (2014) • The participants had to rate how often they helped others in the video games they played, so there may be social desirability (1), as the participants may lie and say they help others on video games more than they do to make themselves look good, so affecting the validity of the results. (1) • In study 2, all the participants came from Singapore, so culture may have affected the results (1) so the results may not be representative of the effects of video gaming on children from other cultures. (1) Bastian et al. (2011) • All the participants were undergraduate students who took part for extra course credit, so there may have been demand characteristics (1) as the undergraduates may have felt they needed to give the results that were expected in order to gain course credit affecting validity. (1) • In study 1, the characters the participants were playing against were mainly non-human which could be a confounding variable (1) affecting the validity of the results as it could be the fact the characters were non-human that affected the participants' ratings of themselves as human (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
10 (a)	**AO2 (2 marks)** Credit up to **two** marks for an accurate description in relation to the scenario. For example: • Naif could ask the teacher to tell the class what he is doing at the start of the lesson (1), he could tell the students at the end of the lesson that he is going to observe them next lesson. (1) **Look for other reasonable marking points.** **Generic answers score 0 marks**	**(2)**

Question Number	Answer	Mark
10 (b)	**AO1 (2 marks), AO3 (2 marks)** Credit **one** mark for accurate identification of one strength and one weakness. (AO1) Credit **one** mark for justification/exemplification of one strength and one weakness. (AO3) For example: **Strength** • If observations are carried out in a natural setting then the observed behaviour is more likely to be normal (1) so the results will have increased validity as they are a more accurate representation of the participants' behaviour. (1) **Weakness** • Participants may change their behaviour if they know they are being observed (1) so the results are not an accurate representation of the participants' normal behaviour, affecting validity. (1) **Look for other reasonable marking points.**	**(4)**

Question Number	Indicative content	Mark
11	**AO1 (4 marks), AO2 (4 marks)** **AO1** • Positive reinforcement is giving something that is wanted for a desired behaviour. • A primary reinforcer satisfies a basic need, whilst a secondary reinforcer allows the person to gain something that will satisfy a basic need. • Punishment gives something undesired to stop a behaviour, but it does not teach a new behaviour. • Operant conditioning works through associating a reward with a desired behaviour. **AO2** • Peter's father may give him some sweets every time he stops before crossing a road. • Peter may receive a token every time he crosses the road safely, which he can exchange for his favourite drink which is a primary reinforcer. • If his father forbids Peter from playing with his friends because he ran across the road, then this might stop Peter from running across the road. • Peter will learn that he will get treats if he looks for vehicles when he is near the road and so will be more likely to look before crossing the road. **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)

Section C

Question Number	Indicative content	Mark
12	**AO1 (6 marks), AO3 (6 marks)** **AO1** • Freud said that children develop through five stages. • In each stage there is a focus of pleasure, if fixated in that stage it can affect adult personality. • Being fixated in the oral stage can lead to a sarcastic, cynical personality as an adult. • Our mind is made up of three components, the conscious, pre-conscious and unconscious. • The unconscious makes up the majority of our mind but we are not aware of what is in it. • We use defence mechanisms such as denial in an attempt to keep the unconscious in the unconscious, and these affect our behaviour. **AO3** • The case of Little Hans (1909) found that his fear of horses was an unconscious fear of his father. • O'Neill (1992) found a positive correlation between anality and enjoyment of lavatorial jokes. • Freud's theory does not allow us predict which children have been fixated and how this will affect their adult personality, it says they must have been fixated because they have that personality. • Little Hans was the only child Freud studied so it is hard to generalise the results to all children. • The unconscious is hard to measure as it is not directly observable, so making the theory unscientific. • Adams (1996) found evidence for repression as 80% of homophobic men were aroused by pornographic pictures of men. **Look for other reasonable marking points.**	**(12)**

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	1-3 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)

Question Number	Indicative content	Mark
13	**AO1 (6 marks), AO3 (10 marks)** **AO1** • If damaged, the frontal lobe causes people to become more impulsive and aggressive so are more anti-social and possibly aggressive. • The amygdala is in the temporal lobe and normally this helps regulate emotions. • When the amygdala is damaged it leads to people feeling less fear and so may increase violent behaviour • Social learning theory claims that aggression would be learnt through observation and imitation. • An aggressive role model is more likely to be imitated if the person identifies with them due to being the same gender. • If the role model is vicariously reinforced for their aggression they are more likely to be imitated. **AO3** • Williams et al. (2013) found that 60% of the 200 prisoners they surveyed had suffered some type of brain injury as a child. • Kreutzer et al. (1995) found substance abuse, brain injury and crime were all related. • Though it could be that the head injury was more likely to lead to substance abuse and it was the substance abuse that lead to the aggression. • Bradely et al. (2014) found if the brain damage had occurred in adulthood then the participants were more likely to say they would not harm others compared to children who had suffered brain damage. • The biological explanation ignores environmental influences on aggression, so it could be considered reductionist. • Bandura, Ross and Ross (1961) found that children imitate aggressive acts shown by an adult. • Bandura, Ross and Ross's study was carried out on young children so may not explain why adults are aggressive. • Bastian et al. (2011) found that playing violent video games lead to participants seeing their opponents as less human so leading to increased aggression. • Charlton et al. (2000) found that an increase in watching television did not lead to an increase in aggressive behaviour. • Neither explanation considers Freud's theory that aggression is an unconscious process due to a dominant id. **Look for other reasonable marking points.**	**(16)**

Level	Mark	Descriptor
Candidates must demonstrate a greater emphasis on evaluation/conclusion vs knowledge and understanding in their answer. Knowledge & understanding is capped at maximum 6 marks.		
	0	No rewardable material.
Level 1	1-4 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	5-8 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	9-12 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	13-16 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)

Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom