GradeMax



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Mark Scheme (Results)

January 2020

Pearson Edexcel International Advanced Subsidiary In Psychology (WPS02)
Paper 01 Biological Psychology, Learning Theories and Development

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January 2020
Publications Code WPS02_01_MS_20200305
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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
1	**AO1 (3 marks)** Credit up to **three** marks for accurate description. For example: • The central nervous system (CNS) is made up of the brain and the spinal cord (1). Messages from the body, e.g. arms, travel up the spinal cord to the brain where the information is processed (1). The brain then sends messages back down the spinal cord resulting in an action from the person (1). **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
2(a)	**AO2 (1 mark)** Credit **one** mark for accurate identification in relation to scenario. For example: • The independent variable was whether the participants had seen the scary film or not (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(1)**

Question Number	Answer	Mark
2(b)	**AO2 (2 marks), AO3 (2 marks)** Credit **one** mark for accurate identification of one strength and one weakness in relation to scenario. (AO2) Credit **one** mark for justification/exemplification of one strength and one weakness (AO3) For example: Strength • Cherry could be sure that it was not differences in sleep patterns of the participants were that may have affected her results (1), as she used the same participants in before and after watching a scary film, making her results more valid (1). Weakness • Cherry's participants could have said they slept less after watching the scary film (1), as they may have guessed the aim of the study was to investigate the effects of watching scary films on sleep and shown demand characteristics (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
2(c)	**AO2 (1 mark) , AO3 (1 mark)** Credit **one** mark for accurate identification of one conclusion in relation to scenario. (AO2) Credit **one** mark for justification/exemplification of one conclusion (AO3) For example: • Cherry could conclude that watching scary films makes people more likely to sleep fewer hours (1), as the mean number of hours slept decreased by 3.3 hours after watching scary films (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
2(d)	**AO2 (1 mark) A03 (1 mark)** Credit **one** mark for accurate identification of one weakness in relation to scenario. (AO2) Credit **one** mark for justification/exemplification of one weakness (AO3) For example: • Cherry's use of the mean may have been affected by a participant who slept a lot less than the other participants (1), that suggests the mean may not be an accurate representation of the majority of participant sleeping patterns (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
2(e)	**AO2 (1 mark), AO3 (2 marks)** Credit **one** mark for accurate identification of one statistical test in relation to scenario. (AO2) Credit up to **two** marks for justification/exemplification of one statistical test (AO3) For example: • Cherry would use a Wilcoxon test on her data from her study looking at the effects of scary films on the number of hours slept (1), as she used repeated measures with each participant giving scores before and after watching the scary film (1), and the data of number of hours slept is at least ordinal (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(3)**

Question Number	Answer	Mark
3(a)	**AO2 (4 marks)** Credit up to **four** marks for accurate description in relation to scenario For example: • Aya could take anti-depressants such as SSRIs (1). SSRIs will increase the serotonin in Aya's brain and help improve her mood during the winter months (1). They will stop Aya's serotonin from being taken out of the synapse by uptake mechanisms (1). Aya will take the SSRI as a tablet, starting at the lowest dose possible to improve her feelings of depression (1) **Look for other reasonable marking points.** **Generic answers score 0 marks**	**(4)**

Question Number	Answer	Mark
3(b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of one weakness in relation to scenario (AO2) Credit **one** mark for justification/exemplification of one weakness (AO3) For example: • Aya may have side effects from taking the SSRIs such as feeling dizzy all the time (1), this means she may stop taking the SSRIs so they would not be appropriate for treating her seasonal affective disorder (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**	**(2)**

Question Number	Answer	Mark
4(a)	**AO2 (2 marks)** Credit up to **two** marks for accurate description in relation to scenario. For example: • As Kirk is a teenage male he will have an increase in testosterone in his body which could lead to him shouting at his parents (1). He may also have been exposed to more testosterone in the womb which will have affected his brain development leading to him throwing things at the wall (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**	**(2)**

Question Number	Answer	Mark
4(b)	**AO1 (3 marks)** Credit up to **three** marks for accurate description. For example: • The pre-frontal cortex plays a role in controlling behaviour and delays gratification of impulses (1). If it is damaged our impulses will no longer be controlled and we are more likely to act upon them, including aggressive impulses (1). The pre-frontal cortex inhibits the amygdala, so when it is damaged the amygdala is no longer inhibited leading to an increase in aggression (1). **Look for other reasonable marking points.**	**(3)**

Question Number	Indicative content	Mark
5	**AO1 (4 marks), AO3 (4 marks)** AO1 • Brendgen et al. (2005) studied physical aggression and found that the concordance rate for monozygotic twins was nearly double the concordance rate for dizygotic twins. • McGuffin and Gottesman (1985) found a concordance rate of 87% for monozygotic twins and aggression and 72% for dizygotic twins, suggesting genes influence aggression. • Twin studies are often used to study the genetic influence on aggression by comparing the concordance rates of monozygotic and dizygotic twins. • Other research into aggression has bred animals, such as mice, to investigate whether aggressive animals will have aggressive offspring or not. AO3 • Brendgen et al. (2005) used both teacher ratings and peer ratings of aggression, both scores were similar suggesting the data is reliably measuring the participants' aggression. • As the concordance rate was 87%, and not 100% in McGuffin and Gottesman (1985) it suggests there must be other factors apart from genes that influence aggression. • Twin studies may not be valid, as it could be that monozygotic twins have a more similar environment than other siblings and this could be a reason for the higher concordance rates in aggression. • As animals are kept under controlled conditions researchers can assume the aggression in any offspring is due to the breeding of two aggressive parents, and not to environmental factors. **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)

Section B

Question Number	Answer	Mark
6 (a)	**AO2 (1 mark)** Credit **one** mark for accurate identification in relation to scenario. For example: • The stickers that Georgia gets when she is quiet and does her work for 10 minutes is the secondary reinforcer (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(1)**

Question Number	Answer	Mark
6 (b)	**AO2 (2 marks)** Credit up to **two** marks for accurate description in relation to scenario. For example: • The teacher used a fixed interval schedule of reinforcement with Georgia (1) as she got a sticker after a fixed 10 minutes if she was quiet and did her work (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

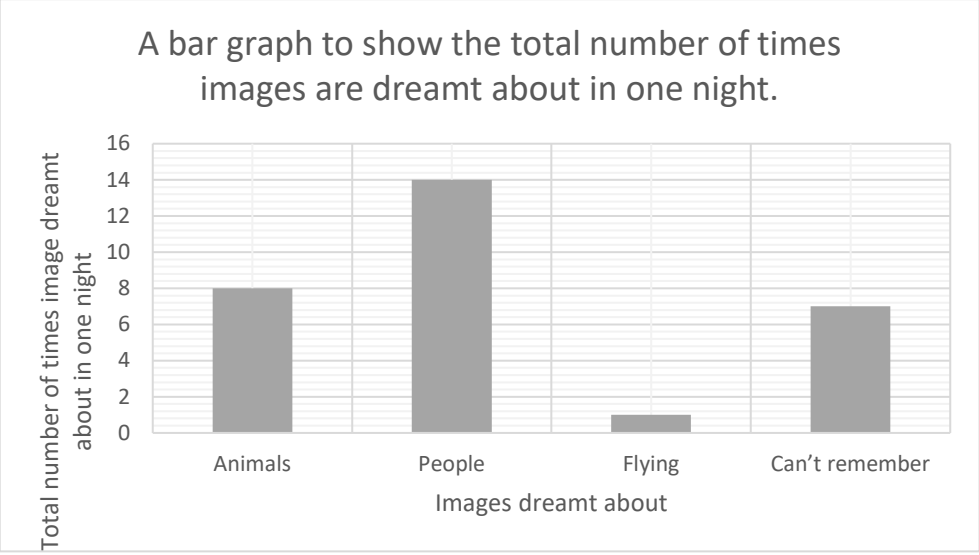
Question Number	Answer	Mark
6 (c)	**AO2 (2 marks)** Credit up to **two** marks for accurate description in relation to scenario. For example: • Georgia's mother could give Georgia something undesired every time she does not do her homework (1). She could shout at Georgia when she refuses to do her homework which is a type of positive punishment (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
7 (a)	**AO2 (3 marks)** Credit up to **three** marks for accurate description in relation to scenario. For example: • Misaki would decide how long she would spend at a specific location, such as 10 minutes and then stop the observation for a break (1). She may then decide to move to a different location at a different time of day and carry out the observation for another 10 minutes (1). Misaki would make a tally every time she saw an older or a younger person using a mobile phone whilst driving within the 10 minutes of each observation period (1). **Look for other reasonable answers.** **Generic answers score 0 marks.**	**(3)**

Question Number	Answer	Mark
7(b)	**AO2 (2 marks)** Credit up to **two** marks for accurate drawing in relation to scenario For example: **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

	Younger participants	**Older participants**
Used mobile phone		
Didn't use mobile phone		

Question Number	Answer	Mark
8 (a)	**AO2 (3 marks)** One mark for correct/appropriate title. One mark for correct/appropriate labelling of axes. One mark for accurate plotting of scores. For example: **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(3)**



Question Number	Answer	Mark
8 (b)	**AO1 (3 marks)** Credit up to **three** marks for accurate description. For example: • A client undertaking psychoanalysis sees the analyst as an important figure from their childhood (1). The client feels and behaves towards the analyst how they felt and behaved towards the person from their childhood (1). The analyst then uses this behaviour to understand the client better and enable the client to gain insight into their behaviour (1). **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
8 (c)	**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 • Psychoanalysis aims to get to the root cause of an issue unlike other therapies such as systematic desensitisation (1), therefore it is more likely to offer a permanent cure so is more effective in the long term (1). Weakness • Psychoanalysis involves an analyst interpreting what the symbols in dreams mean, with different analysts offering different interpretations (1), this therefore increases the subjectivity of psychoanalysis and reduces its scientific status as a therapy (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
9 (a)	**AO1 (4 marks)** Credit up to **four** marks for accurate description. For example: • Motivation in social learning theory may be vicarious where a role model is rewarded for a behaviour (1). This makes it more likely that the observer will imitate the behaviour in the hope of gaining a similar reward (1). If the observer sees a role model being punished for a behaviour they are less motivated to imitate that behaviour as they want to avoid the punishment (1). The observer will be motivated to repeat a behaviour they have imitated if they are rewarded after performing that behaviour (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
9 (b)	**AO1 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of one strength (AO1) Credit **one** mark for justification/exemplification of one strength (AO3) For example: • The theory has validity as it can explain how we learn behaviours without being reinforced and this is supported by research (1), such as Bandura, Ross and Ross (1961) found that children did copy the actions of an aggressive adult towards a Bobo doll (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Indicative content	Mark
10	**AO1 (4 marks), AO2 (4 marks)** **AO1** • Animals should be kept in groups if they live in groups naturally. • Enclosures for animals need to stimulating, and as natural as possible. • In order to carry out research on animals a licence needs to be obtained by the institution and by the person responsible for the research. • To gain a licence for a piece of research the benefits of the research must outweigh the costs to the animals. **AO2** • As chimpanzees are social animals once they have been used for Mateo's research they should be carefully integrated into a group. • When creating an enclosure for the chimpanzees Mateo should provide room for them to climb up and be able to play. • Mateo has to apply to the Home Office for a licence for himself as he has not worked with animals before. • To ensure the benefits of his research outweigh the costs Mateo must keep the pain from the electric shock felt by the chimpanzees to a minimum. **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
11	**AO1 (6 marks), AO3 (6 marks)** **AO1** • An infradian rhythm is a bodily rhythm that lasts for more than 24 hours, such as the menstrual cycle. • The menstrual cycle is regulated by the release of the hormones progesterone and oestrogen which fluctuate throughout the month. • Both hormones are low during the menstruation, oestrogen increases to cause ovulation and progesterone then starts to increase. • Seasonal affective disorder is a type of depression that often occurs during the winter months. • It is thought that the hypothalamus does not work properly during the winter months, so affecting the production of hormones such as melatonin and serotonin. • A lack of sunlight increases the amount of melatonin released which can lead to symptoms such as feeling tired all the time. **AO3** • McClintock and Stern (1988) found that 68% of 30 women altered their menstrual cycle due to the pheromones of the other women. • Wilson (1992) reviewed several studies on the effect of infradian rhythms on the menstrual cycle and found that there was no effect once problems with the studies had been taken into account. • Weller and Weller (1995) found that there was no synchronisation in the menstrual cycle of a team female basketball players, nor was there any synchronisation among best friends. • Mahon et al. (2016) found that people with seasonal affective disorder could not appropriately regulate their serotonin transporters in the brain during the winter months. • There could be other explanations for seasonal affective disorder, such as a variation in the period 3 gene which has been found in people who suffer from the disorder. • The fact that people who live 30 degrees either side of the equator rarely get seasonal affective disorder does support the idea that it is a disorder that is affected by light levels. **Look for other reasonable marking points.**	**(12)**

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)

Question Number	Indicative content	Mark
12	**AO1 (6 marks), AO3 (10 marks)** **AO1** Brendgen et al. (2005) • Brendgen et al. (2005) used a sample of 234 twins from Montreal. • 84% of the twins were of European descent with 3% being of African descent. • Questionnaires were translated into French if that was the language the teacher spoke, and then translated back into English. Capafóns et al. (1998) • Capafóns et al. (1998) used a sample of 41 participants who were scared of flying. • The participants were found through a media campaign in the newspapers, on the radio and on television. • A variety of measures were used to measure the fear of flying such as the EPAV-A scale and physiological measures. **AO3** Brendgen et al. (2005) • A sample size of 234 can be considered representative therefore generalisable to the target population. • All the twins were from Montreal therefore the results may be due to environmental factors in Montreal and may not be representative of non-industrial cultures. • The sample is not representative of children who do not have European descent so it is difficult to apply the findings to other children. • The sematic similarity of the original English and the retranslated English was checked by bilinguists ensuring the reliability and consistency of the French translations. • The comparison between the teacher ratings of aggression and the peer ratings of aggression increased reliability as subjective opinions, such as falling out with a friend were accounted for. Capafóns et al. (1998) • Systematic desensitisation may not work as effectively for other non-specific phobias, as fear of flying was the only phobia that was studied. • As the sample was a volunteer sample if may not be representative of all people who had a fear of flying, as only those who felt a need to get rid of the fear may have put themselves forward. • Data taken from heart rate and muscle tension is objective, so increases reliability. • Participants may have shown demand characteristics at the end of the study and felt they had to say they were less scared of flying, so reducing the reliability of the results.	**(16)**

	• As Capafóns et al. (1998) used a variety of scales that already existed other researchers could replicate the study and use the same scales to check for a consistency of results. **Look for other reasonable marking points.**	

Level	Mark	Descriptor
AO1 (6 marks), AO3 (10 marks) 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)

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