GradeMax

edexcel

Mark Scheme

June 2016

Pearson Edexcel International GCE PSYCHOLOGY (WPS02)

PAPER 2: Biological Psychology, Learning Theories and Development

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.

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

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

Summer 2016
Publications Code WPS02_02_1606_MS
All the material in this publication is copyright
© Pearson Education Ltd 2016

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 (a)	**AO1 (1 mark)** **One** mark for identifying correct sample group. • Monozygotic (MZ) twins Accept other correct wordings of this sample group.	**(1)**

Question Number	Answer	Mark
1 (b)	**AO1 (2 marks) AO3 (2 marks)** One mark for identification of the strength / weakness (AO1). One mark for justification of the strength / weakness (AO3). For example: Strength Twin studies have naturally occurring variables like aggression and anti-social behaviour (1) therefore the data gathered is valid (1) Weakness One weakness of the twin method in this study is that twins are not common in the population (1) therefore the generalisability of the results is reduced (1) **Answers must relate to the scenario.** **Look for other reasonable marking points.** **Generic answers score 0**	**(4)**

Question Number	Answer	Mark
1 (c)	**AO2 (1 mark) A03 (1 mark)** **One** mark for identification of correct conclusion (AO2). **One** mark for justification of correct conclusion (AO3). 0 marks for not relating to the context Table 1. For example: Jacob can conclude that monozygotic twins have a higher concordance rate of 87% than dizygotic twins 67% between aggression and antisocial behaviour (1). This shows that there is a partly genetic relationship between aggression and antisocial behaviour (1). **Look for other reasonable marking points**	**(2)**

Total for Question 1 – 7 marks

Question Number	Answer	Mark
2	**AO1 (4 marks)** **One** mark for each point describing the role of infradian rhythms up to a maximum of **four** marks. For example: • Infradian rhythms last longer than 24 hours (1). In humans infradian rhythms include the menstrual cycle which occurs over a 28 day cycle (1) which happens a few days before the onset of bleeding during which the lining of the uterus wall is shed (1) during which behaviour changes occur including it is characterised by a loss of appetite, stress, irritability and poor concentration (1). **Look for other reasonable marking points.**	**(4)**

Total for Question 3 – 4 marks

Question Number	Answer	Mark
3(a)	**AO1 (1 marks)** One mark for identifying the technique used. - Circadian rhythm Accept other correct wordings of this bodily rhythm.	**(1)**

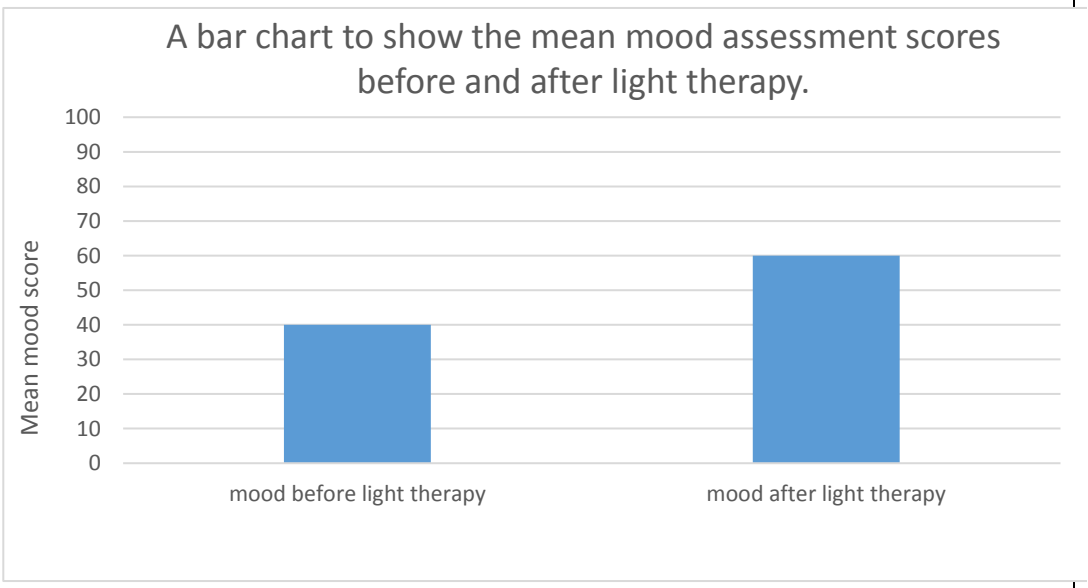
Question Number	Answer	Mark
3(b)	**AO1 (2 marks) AO3 (2 marks)** Credit up to **two** marks for identification of correct points related to internal body clock (AO1). Credit up to **two** marks for justification of correct points related to internal body clock using appropriate research (AO3). For example: • Siffre's research shows that the circadian rhythm/24 sleep-wake cycle has an internal control/internal body clock (1) which in the absence of cues/zeitgebers means we cannot control it at 24 hours (1). • Our body clock can change due to the absence of external cues/zeitgebers like temperature and light which control internal body clocks (1) absence of external cues could have resulted in Siffre's internal clock altering to approximately 48 hours instead of staying at 24 hours (1) **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
3(c)	**AO1 (1 mark) A03 (1 mark)** **One** mark for identification of the weakness (AO1). **One** mark for justification of the weakness (AO3). For example: • Siffre's study, for example, is not representative of the whole population (1) as it took place on one man so it is not generalisable to the larger population/women (1) **Look for other reasonable marking points.**	**(2)**

Total for Question 3 – 7 marks

Question Number	Answer	Mark
4 (a)	**AO2 (3 marks)** **One** mark for correct one-tailed direction. **One** mark for a fully operationalised IV. **One** mark for a fully operationalised DV. For example: • There will be a increase in mood score with light therapy(1) • There will be a significant increase in the mood self-assessment with light therapy than without light therapy (2) • There will be a significant increase in the mood self-assessment score out of 100 after light therapy than before light therapy (3) **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
4 (b) (i)	**AO2 (2 marks)** Credit **one** mark for each correct answer. Before light therapy • 40 After light therapy • 60	**(2)**

Question Number	Answer	Mark
4 (b) (ii)	**AO2 (3 marks)** **One** mark for correct/appropriate title. **One** mark for correct/appropriate labelling of axes. **One** mark for correct plotting of both mean scores.  	**(3)**

Total for Question 4 – 8 marks

Question Number	Indicative content	Mark
5	**AO1 (4 marks), A03 (4 marks)** **AO1:** • Participants were matched on age and sex • Used PET scans for brain imaging. • Studied 41 people charged with murder/manslaughter. • Pre-scan task was a general activity task. **AO3:** • Using matched pairs design eliminates participant variables such as age to increase reliability of results. • PET scans are useful as you no longer have to wait for the person to die to examine their brain, so research is more accurate. • There are arguments around how generalisable 41 murderers is to the target population of murderers. • Task validity is reduced as the pre-scan task had nothing to do with the violent behaviour shown by murderers. **Look for other reasonable marking points.**	**(8)**

Level	**Mark**	**Description**
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 evaluation/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 an evaluation/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)

Total for Question 5 – 8 marks

Section B

Question Number	Answer	Mark
6 (a)	**AO2 (2 marks)** Credit **one** mark for each correct answer. Drivers with no passengers • 58 Drivers with passengers • 52.5 **Reject all other answers.**	**(2)**

Question Number	Answer	Mark
6 (b)	**AO2 (2 mark)** Credit **one** mark for each correct answer. Drivers with no passengers • 24 Drivers with passengers • 21 **Reject all other answers.**	**(2)**

Question Number	Answer	Mark
6 (c)	**A03 (2 mark)** Credit up to two marks for explaining why it is more appropriate. For example: • Standard deviation takes into consideration all of the scores in the set (1) unlike the range which only used the top and bottom score (1). **Look for other reasonable marking points**	**(2)**

Question Number	Answer	Mark
6 (d)	**A02 (2 marks) AO3 (2 marks)** One mark for each reason given for selection of method (AO2). One mark for each justification for selection of method (AO3). For example: • If Shamilla had been a participant she would not have been able to observe the cars (1) and accurately record their speed and occupancy (1). • Shamilla wanted to observe the cars in their natural environment (1) which would give the study high ecological validity (1). **Answers must relate to the scenario.** **Look for other reasonable marking points.** **Generic answers score 0**	**(4)**

Question Number	Answer	Mark
6 (e)	**AO2 (2 marks) AO3 (2 marks)** One mark for identifying each weakness applied to the study (AO2) One mark for justifying each weakness identified (AO3) For example: • Shamilla's observation may have been affected by extraneous variables like the weather (1), if it was raining she may not have been able to clearly see whether there were passengers in the car therefore decreasing the reliability of her results (1) • Shamilla's observation may have been affected by extraneous variables like the time of day (1), on some occasions the light was poor so she could not see (1) **Answers must relate to the scenario.** **Look for other reasonable marking points.** **Generic answers score 0**	**(4)**

Total for Question 6 – 14 marks

Question Number	Answer	Mark
7 (a)	**AO1 (4 marks)** Up to four marks for description of procedure. For example: • Little Albert was presented with a variety of objects such as a rabbit, fire, a white rat to see what he was afraid of (1). Initially the only thing that scared him was the banging of a hammer on a steel bar (1) he was not at first afraid of rats (1) they combined presenting the rat with banging the steel bar (1). **Look for other reasonable marking points**	**(4)**

Question Number	Answer	Mark
7 (b)	**AO1 (2 marks), A03 (2 marks)** One mark for identification of the strength / weakness (AO1). One mark for justification of the strength / weakness (AO3). For example: Strength • Watson and Rayner (1920) Little Albert study was split into three phases, preconditioning, conditioning and post-conditioning (1) which makes it easier to replicate to test for reliability (1). Weakness • Watson and Rayner (1920) only used one 9 month old child (1) which is not representative of the entire population (1) **Look for other reasonable marking points**	**(4)**

Question Number	Answer	Mark
7 (c)	**A03 (4 marks)** **One** mark for an improvement and **one** mark for a justification of the improvement, up to **four** marks. For example: • His mother should have allowed him to remain in the study until the fear was removed (1) in order to protect Albert from harm which is unethical (1). • To improve the ethics they could remove the mask from the object list and find an alternative less frightening item (1). This would prevent Albert becoming distressed by the mask which was presented very close to his face which was very frightening for a child (1). **Look for other reasonable marking points**	**(4)**

Total for Question 7 – 14 marks

Question Number	Indicative Content	Mark
8	**AO1 (4 marks), A02 (4 marks)** **A01: Social Learning Theory** • Social learning theory suggests that we learn through observing others behaviour and imitating them • Those being observed are role models who in society include parents, teachers, friends amongst many others • Role models can be positive showing good behaviour or negative showing inappropriate behaviour. **A01: Operant Conditioning** • Skinner suggested operant conditioning involves the ability to change behaviour through reinforcement • Positive reinforcement involves getting a reward for desired behaviour for example, Skinner rewarded his rats with food pellets. • Skinner also proposed behaviour shaping which involves reinforcement for partial completion of a complex behaviour through smaller rewards, each time moving closer to the desired goal. **A02:** • The twins could observe and imitate their parents by copying them and putting away their toys. • The twins would view the parents to be positive role models and are more likely to imitate them putting the toys away. • The twins would follow the 4 stage modelling process. • The twins parents could give them a sweet after they have put away the toys. **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)

Total for Question 8 – 8 marks

Section C

Question Number	Indicative Content	Mark
9	**AO1 (4 marks) AO2 (4 marks) A03 (4 marks)** **AO1:** • Wolpe (1958) created SD based on classical conditioning. • Patients learn in stages to associate fear responses with feelings of calm. • Systematic desensitisation uses a progressive step-by-step approach to feared objects or situations. • Prior to treatment a hierarchy is created going from the least feared type of contact with the phobic object/situation to the most feared. **AO2:** • Maria would create a hierarchy of her fears • Maria would work through her hierarchy from least feared object/image of a cat to her most feared. • Maria would make step by step progress towards being calm when faced with cats. • When she feels anxious she would initiate her relaxation technique. **AO3:** • McGrath et al (1990) successfully treated a 9 year old girl with a phobia using systematic desensitisation. • Behavioural therapies like systematic desensitisation are often used in conjunction with other therapies such as Cognitive Behavioural Therapy or drug therapy (Burke et al 1997) • Psychodynamic therapists criticise systematic desensitisation as people with phobias have no clear recollection or experience involving the object they are afraid of. • Systematic desensitisation is considered more ethical and less directive than other treatments as the patient have more control over what they are doing. **Look for other reasonable marking points.**	**(12)**

Total for Question 9 – 12 marks

Level	Mark	Descriptor
AO1 (4 marks), AO2 (4 marks), AO3 (4 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs application vs evaluation/conclusion in their answer.**		
	0	No rewardable material.
Level 1	1-3 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) 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) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) 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) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) 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) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) 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
10	**AO1 (6 marks) AO2 (4 marks) AO3 (6 marks)** **AO1:** • Aggression more often occurs in males than females, which is usually attributed to the male sex hormone testosterone • Cortisol is a hormone that is important in controlling stress, lower levels of cortisol produce higher levels of aggression • Testosterone has also been implicated in aggression and may account for why males are more aggressive. • Monoamine Oxidase A (MAOA) gene regulates the enzyme monoamine oxidase A which controls serotonin. • Social Learning theory suggests that aggression can be learned through the imitation of role models. • Freud suggested that catharsis is a way of venting aggression which involves releasing emotions such as anger. • Darwin's evolutionary theory would suggest that passing on aggressive genes in a protective trait that humans have evolved **AO2:** • Liam is at an age where testosterone levels are unbalanced which could increase his aggressive behaviour. • Liam may have low MAOA so his serotonin is less well regulated influencing him being aggressive. • Liam may have observed other boys in his class whom he perceives to be role models fighting and imitate their behaviour by fighting himself. • Liam's fighting may be him expressing his unconscious frustrations which will be an outlet for his aggression. **A03:** • Kalat (1998) reported that in 15-25-year-old men those with the highest level of circulating testosterone also showed the highest levels of aggression as shown by crime statistics. • Hormones do not account for individual differences in aggression. • Brunner et al (1993) discovered a defective MAOA gene in a Dutch family with a history of male violence. • The genetic and hormone approaches to aggression are reductionist and cannot fully explain all aggression in human behaviour. • Bandura (1961) study found that children observed and imitate aggressive role models by performing aggressively towards a Bobo doll.	**(16)**

	• Buss and Shackleton (1997) who showed that males will threaten other males aggressively to ensure the female is protected and their genes survive.	

Level	Mark	Descriptor
AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs judgement/conclusion in their answer. Application to the scenario is capped at maximum 4 marks.**		
Level 1	1–4 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) 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	5–8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning. leading to a judgement/decision being presented. Candidates will demonstrate a grasp of competing arguments but response may be imbalanced. (AO3)
Level 3	9–12 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical argument, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced and well-supported judgement/decision. (AO3)
Level 4	13–16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates throughout the skills of integrating and synthesising relevant knowledge with consistent linkages to psychological concepts and/or ideas. (AO2) 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)

Total for Question 10 – 16 marks

Total for Paper – 96 marks