GradeMax



Mark Scheme (Results)

Summer 2019

Pearson Edexcel International Advanced Subsidiary In Psychology (WPS0) Paper 3: Applications of Psychology

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

Summer 2019
Publications Code WPS03_01_msc_20190822
All the material in this publication is copyright
© Pearson Education Ltd 2019

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.

WPS03 JUNE 2019
DEVELOPMENTAL PSYCHOLOGY

Question Number	Answer	Mark
1(a)	**AO1 (2 marks), AO3 (2 marks)** Credit up to **two** marks for identification of each strength (AO1) Credit up to **two** marks for justification/exemplification of each strength (AO3) For example: • Publication bias was avoided in the sample of studies chosen so the results will be more representative of attachment research (1) because unpublished studies were included which may have not been published due to negative or inconclusive findings (1). • The researchers could ensure reliability of the ratings of attachment was high in the chosen studies (1) as only studies where at least one of the authors was a reliable AAI or SSP coder were considered (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
1(b)	**AO1 (1 mark), AO3 (1 mark)** Credit **one** mark for identification of an improvement (AO1) Credit **one** mark for justification/exemplification of the improvement (AO3) • Comparisons could be made to cultures other than westernised cultures where secure attachment may be the norm due to parenting styles (1) which would improve the generalisability of findings about the universality of attachment types in cultures where childrearing may differ (1).	**(2)**

<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>2(a)</td><td>
AO2 (4 marks)

Credit one mark for correct completion of difference
Credit one mark for correct completion of ranked difference
Credit one mark for a correct calculation of sum of both ranks
Credit one mark for a correct answer for T=2

<table>
<tr><th>Participant</th><th>Empathy score after mindfulness programme</th><th>Empathy score after non-mindfulness social responsibility programme</th><th>Difference</th><th>Ranked Difference</th></tr>
<tr><td>A</td><td>25</td><td>24</td><td>1</td><td>1</td></tr>
<tr><td>B</td><td>20</td><td>22</td><td>-2</td><td>2</td></tr>
<tr><td>C</td><td>22</td><td>12</td><td>10</td><td>8</td></tr>
<tr><td>D</td><td>19</td><td>16</td><td>3</td><td>3</td></tr>
<tr><td>E</td><td>27</td><td>20</td><td>7</td><td>6</td></tr>
<tr><td>F</td><td>10</td><td>10</td><td>0</td><td>-</td></tr>
<tr><td>G</td><td>19</td><td>11</td><td>8</td><td>7</td></tr>
<tr><td>H</td><td>24</td><td>19</td><td>5</td><td>5</td></tr>
<tr><td>I</td><td>16</td><td>5</td><td>11</td><td>9</td></tr>
<tr><td>J</td><td>18</td><td>14</td><td>4</td><td>4</td></tr>
</table>

Sum of positive ranks = 43; Sum of negative ranks = 2
T=2

Look for other ways of expressing correct answer.
</td><td>(4)</td></tr>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>2(b)</td><td>
AO3 (1 mark)

Credit one mark for appropriate interpretation.

For example:

The distribution of children’s empathy scores after using mindfulness has a positive skew with most at the lower end of the histogram and very few at the upper end (1).

Look for other reasonable marking points.
</td><td>(1)</td></tr>
</table>

Question Number	Answer	Mark
3(a)	**AO2 (3 marks)** Credit up to **three** marks for accurate description of how a meta-analysis could be used. For example: • Precious would need to decide on which countries to include by selecting research studies carried out in those different places into attachment types (1). She would then need to decide which to exclude from her study into attachment types, such as those not written in English (1). Precious would need to carry out a statistical analysis to calculate an 'effect size' to make a conclusion about the universality of attachment (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(3)**

Question Number	Answer	Mark
3(b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for identification of a weakness (AO2) Credit **one** mark for justification/exemplification of the weakness (AO3) For example: • There may be a lack of reliability in the findings between the attachment studies that Precious selects because the studies may have used slightly different procedures (1), such as the use of a different gender of experimenter in the SSP, which may change the attachment behaviour of the child (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Indicative Content	Mark
4	**AO1 (4 marks), AO3 (4 marks)** **AO1** • 88 children were interviewed and a case history was built up for each of them. • An independent social worker also conducted interviews and assessments of the children. • 14 thieves were identified as having affectionless psychopathy, with 12 of those having experienced maternal deprivation. • It was concluded that maternal deprivation affected emotional adjustment as only 2 of the non-affectionless psychopaths had not suffered maternal deprivation. **AO3** • Bowlby conducted the interviews himself so there may be researcher bias in the analysis. • The use of an independent social worker increases the validity of the data as it is more likely to be accurate due to the impartial nature of the social worker. • The reason for the maternal deprivation could have been the cause of emotional problems, rather than the separation itself so the study lacks cause and effect. • Bowlby's findings led to better hospital policies with regard to parental visiting of their children, with parents being able to more frequently visit. **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)

Question Number	Indicative Content	Mark
5	**AO1 (4 marks), AO3 (4 marks)** **AO1** • The meta-analysis included studies using the strange situation procedure with infants and their mothers. • The use of statistical analysis is an evidence-based approach which means research can be considered more scientific. • They planned to use Ainsworth (1978) as a baseline sample distribution to measure their findings against. • The data source search identified suitable studies using a strict criterion, such as excluding samples of children over 2 years old. **AO3** • The SSP is a method of gaining observable evidence of attachment behaviour so the inclusion of this method in the analysis means the study has scientific properties. • The researchers carried out statistical analysis using chi square to assess if there were significant deviations in the classification in a given sample, increasing the scientific status of the study. • There was no baseline measure as overall distribution of attachment in the US studies did not match Ainsworth's, limiting comparability and replication which reduces the scientific status of the study. • As the SSP is an observation study there is some subjectivity in the interpretation of the child's reaction so the studies included in the meta-analysis may lack objectivity which reduces their scientific status. **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 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)

CRIMINOLOGICAL PSYCHOLOGY

Question Number	Answer	Mark
6(a)	**AO1 (1 mark)** Credit **one** mark for accurate statement. For example: • This is when an eye-witness makes more errors in their recall when attempting to identify a suspect of a different ethnicity to themselves (1). **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Mark
6(b)	**AO1 (2 marks), AO3 (2 marks)** Credit up to **two** marks for identification of each strength (AO1) Credit up to **two** marks for justification/exemplification of each strength (AO3) For example: • Laboratory experiments investigating eye-witness memory are replicable and therefore can be tested for reliability (1) as they have a carefully controlled procedure such as viewing the same videos of a car crash (1). • Laboratory experiments investigating eye-witness memory are high in internal validity (1) because they have a controlled, artificial setting so can minimise the influence of extraneous variables such as distractions when assessing eye-witness recall of a car crash (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
7(a)	**AO2 (4 marks)** Credit up to **four** marks for accurate description of how a psychological (case) formulation could be used. For example: • Kylian would use psychological (case) formulation to determine if Karim was capable of stealing and if he is likely to reoffend if released (1). He would want to investigate Karim's past relationships with his parents to see if this could be a reason for him stealing (1). Kylian could question Karim on his sister's death and ask him how he interpreted this major life event (1). He could also ask experts in mental health to contribute to the psychological (case) formulation with their opinion on whether the history of mental illness could have contributed to him potentially stealing (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
7(b)	**AO2 (1 mark) AO3 (1 mark)** Credit **one** mark for identification of a weakness (AO2) Credit **one** mark for justification/exemplification of the weakness (AO3) For example: • To create and implement a case formulation for Karim's stealing there are several different people that would need to be involved which can be costly (1) as all of those involved with Kylian's case formulation of Karim's theft behaviour, not just the psychologist, would need to be trained (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
8(a)	**AO2 (1 mark)** Credit **one** mark for identification of the level of measurement. For example: • As they were either correct or incorrect Ernesto used nominal data. **Look for other reasonable ways of expressing the level of measurement.** **Generic answers score 0 marks.**	**(1)**

Question Number	Answer	Mark
8(b)	**AO2 (1 mark) AO3 (1 mark)** We are looking for an ability to use the data to determine and support significance, therefore the data for the critical value must be present in the answer, the calculated value is given so this would not be needed. Credit **one** mark for decision of significance from the data (AO2) Credit **one** mark for analysis of the data to support the decision (AO3) • There is no significant difference in recognition of the suspect between those who had witnessed video A and video B (1) because the calculated value of 2.90 is lower than the critical value of 3.84 for a two-tailed test at $p<0.05$ (1).	**(2)**

Question Number	Answer	Mark
8(c)	**AO2 (1 mark) AO3 (1 mark)** Credit **one** mark for identification of a weakness (AO2) Credit **one** mark for justification/exemplification of the weakness (AO3) For example: • Watching a video of a crime like this is not like a real life crime so it lacks ecological validity (1) because the eyewitness would not have the same feelings of stress in a low stakes experimental situation in comparison to a real weapon used in a real life crime (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Indicative Content	Mark
9	**AO1 (4 marks), AO3 (4 marks)** **AO1** • One of the four main steps to the cognitive interview is reinstating the context, which is where a witness should recall cues from the environment. • Witnesses should start the interview by being allowed to recall what happened in their own words without interruption. • Police should ask witnesses to recall the crime in a different order, such as from the end to the start. • The interviewer should ask witnesses to recall the event from different viewpoints, such as another witnesses'/the victim's perspective. **AO3** • Geiselman et al (1985) found that the cognitive interview led to more correct information being recalled compared to standard interviews. • However, Geiselman et al (1985) also found the cognitive interview led to slightly more incorrect items being recalled. • Holliday (2003) found cognitive interviews were more useful than standard interviews when interviewing children. • Cognitive interviews need trained interviewers which increases the expense so they are only used for serious crimes. **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)

Question Number	Indicative Content	Mark
10	**AO1 (4 marks), AO2 (4 marks)** **AO1** • Social learning involves identifying and looking up to a role model. • The observer would pay attention to the role model's behaviour by taking a close interest in their actions. • Actions would be imitated and reproduced by the observer if they were capable of carrying out the behaviour. • Vicarious reinforcement is when the observer sees their role model being rewarded so they are more likely to reproduce the actions displayed. **AO2** • Bashir may see the characters in the fighting game as role models as they are strong and powerful and he wants to be too. • Bashir would pay attention to the fighting moves of the characters and take a close interest in how they are performed. • Bashir must be able to execute the fighting moves and when he finds himself in a threatening position at school it gives him an opportunity to use the fighting moves. • He may see the characters in the video games rewarded for more fighting or for showing greater aggression so this increases the likelihood of Bashir imitating the actions he has seen in the video games. **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)

WPS03 OCTOBER 2018
HEALTH PSYCHOLOGY

Question Number	Answer	Mark
11(a)	**AO1 (1 mark)** Credit **one** mark for accurate statement. For example: • When an individual chooses to avoid the stressor and attempts to distract themselves from the stressor (1). **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Mark
11(b)	**AO1 (2 marks), AO3 (2 marks)** Credit up to **two** marks for identification of the strength/weakness (AO1) Credit up to **two** marks for justification/exemplification of the strength/weakness (AO3) For example: Strength • Focus groups can investigate complex issues such as coping with stress in greater detail than through a closed questionnaire (1) which can enable the health psychologist to explore the reasons for using different coping strategies more, giving a greater understanding of why people use different strategies for the same stressor (1). Weakness • Focus groups in health psychology can be dominated by a single individual or small selection of people so others conform with this opinion (1) so the data obtained about anxiety disorders may lack validity because the true opinion of all members of the focus group may not be consistent with their actual opinion (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
12(a)	**AO2 (4 marks)** Credit up to **four** marks for accurate description of how the Holmes and Rahe scale could be used. For example: • Kylian would use the Holmes and Rahe scale to determine the stress experienced by Karim in the past year (1). He would want to explain to Karim that he needs to indicate how many of the life events he has experienced and then this corresponds to the number of 'life change units' experienced (1). Kylian would find the total number of 'life change units' experienced by Karim, with a high number indicating high levels of stress (1). Kylian would interpret the score with 300+ 'life change units' being at risk of illness, 150-299 a moderate risk, and below 150 a slight risk and inform Karim of this (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
12(b)	**AO2 (1 mark) AO3 (1 mark)** Credit **one** mark for identification of a strength (AO2) Credit **one** mark for justification/exemplification of the strength (AO3) For example: • The Holmes and Rahe stress scale will offer a more objective measure of the stress reported by Karim (1) because Kylian will be counting the number of 'life change units' on the scale which is a quantitative measure of stress (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
13(a)	**AO2 (1 mark)** Credit **one** mark for accurate identification of the level of measurement. For example: • As they were either better than or worse than before the level of measurement was nominal. **Look for other reasonable ways of expressing the level of measurement.** **Generic answers score 0 marks.**	**(1)**

Question Number	Answer	Mark
13(b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for analysis in terms of comparison of the observed/calculated and critical values (AO2) Credit **one** mark for decision of significance (AO3) For example: • The calculated value of 2.90 is lower than the critical value of 3.84 for a two-tailed test at $p<0.05$ (1) which means that there was no significant difference in the symptoms after internet-based CBT and face-to-face CBT (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
13(c)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for identification of a weakness (AO2) Credit **one** mark for justification/exemplification of the weakness (AO3) For example: • The patients had to use a self-report measure of their symptoms being 'better than' or 'worse than' before treatment, which is a subjective judgement (1) as patients may actually have improved their symptoms but may not interpret this as such personally, so the data may lack accuracy (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Indicative Content	Mark
14	**AO1 (4 marks), AO3 (4 marks)** **AO1** • SSRIs work by blocking the reuptake of serotonin at the synapse, so increase serotonin levels in the brain. • SSRIs are prescribed at the lowest possible dose thought necessary to improve anxiety symptoms. • SSRIs affect neurochemistry immediately but usually need to be taken for two to four weeks by a patient with an anxiety disorder before the benefit is experienced. • SSRIs, such as Prozac or paroxetine, can be used in isolation or as part of a combined treatment programme with psychosocial treatments such as CBT. **AO3** • Kapczinski et al. (2003) conducted a review and found antidepressants, including the SSRI paroxetine, to be superior to placebo in treating Generalised Anxiety Disorder. • Whilst they are prescribed at the lowest possible dose to reduce the risk of side effects, side effects can still occur such as feeling dizzy, nausea, and blurred vision. • SSRIs have to be used with caution when the patient has underlying health problems such as diabetes, and can react unpredictably with other medicines so may not be suitable for all patients. • Walkup et al. (2008) used a RCT of 488 children aged 7-17 and found SSRIs to be superior to placebo (55% to 24%) for anxiety disorders, although combined therapy with CBT was the most effective (80.7%). **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)

Question Number	Indicative Content	Mark
15	**AO1 (4 marks), AO2 (4 marks)** **AO1** • During the resistance stage the adrenal cortex releases cortisol which in brief or moderate release can increase memory. • Attention may be increased in the short term due to the cortisol preparing the body for 'fight or flight' and immune functioning is also enhanced. • Chronic stress impairs memory as the cortisol enhances metabolic activity which makes hippocampal cells more vulnerable, with toxins or overactivation likely to damage or kill neurons in the hippocampus. • Chronic stress leads to high levels of catecholamine release which weakens the dorsal prefrontal cortex yet strengthens the amygdala and striatum which means primitive, habitual actions are more likely than considered rational decisions. **AO2** • Bashir experienced enhanced memory at first which is because of the hypothalamus induced the anterior pituitary gland to secrete ACTH and then the adrenal cortex stimulated cortisol. • He was able to focus on tasks more which indicates his prefrontal cortex function was enhanced and his amygdala weakened in the short term due to cortisol exposure and the HPA axis being stimulated. • After some time Bashir became more forgetful, which indicates that his hippocampus was being harmed by the long-term exposure to cortisol and the enhanced metabolic activity. • Bashir's decision making appeared impaired in the long term shown by his quick, rash choices and also his amygdala strengthened due to his angry, emotional reaction to his partner and work colleagues. **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)

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