



Mark Scheme (Results)

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Pearson Edexcel

GCE Psychology 9PS0/02

Paper 2: Applications of Psychology

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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: Clinical Psychology

Question Number	Answer	Mark
1	<p style="text-align: center;">AO1 (3 marks)</p> <p>One mark for a description of each feature of schizophrenia.</p> <p>For example:</p> <ul style="list-style-type: none">• Episodes of psychosis tend to appear between the ages of late adolescence and the mid-thirties, with males having it at a slightly earlier age than females (1).• People who have psychosis before late adolescence often have a worse prognosis than those who develop it later on, with it being more severe and lasting longer (1).• About 50% of people with schizophrenia have times where they have the symptoms and times where they do not have the symptoms (1). <p>Look for other reasonable marking points.</p>	(3)

Question Number	Answer	Mark
2 (a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for an appropriate suggestion of an open question in relation to the scenario.</p> <p>For example:</p> <ul style="list-style-type: none">• How has your relationship with your family member been affected by their mental health disorder? (1). <p>Answers must relate to the scenario.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark
2 (b)	<p style="text-align: center;">AO2 (2 marks)</p> <p>One mark for each accurate statement in relation to the scenario.</p> <p>For example:</p> <ul style="list-style-type: none"> Andromache was looking for a difference in relationships in patients and their families who were waiting for a diagnosis or who had a diagnosis (1). She used nominal data as she measured whether family relationships had improved or deteriorated (1). <p>Answers must relate to the scenario.</p> <p>Look for other reasonable marking points.</p>	(2)

Question Number	Answer	Mark
2 (c)	<p style="text-align: center;">AO2 (1 mark), AO3 (1 mark)</p> <p>One mark for identifying the correct critical value (AO2) One mark for accurate judgement of difference (AO3)</p> <p>For example:</p> <ul style="list-style-type: none"> There is a significant difference in quality of family relationships whilst waiting for a diagnosis compared to having a diagnosis (1) as the observed value (5.84) for a one-tailed test when $df=1$ is greater than the critical value (5.02) (1). <p>Answers must relate to the scenario.</p> <p>Look for other reasonable marking points.</p>	(2)

Question Number	Answer	Mark
2 (d)	<p style="text-align: center;">AO2 (2 marks), AO3 (2 marks)</p> <p>One mark for identification of each strength/weakness in relation to scenario (AO2) One mark for justification of each strength/weakness (AO3)</p> <p>For example:</p> <p>Strength</p> <ul style="list-style-type: none"> It allows Andi to reduce the large amount of data she has received about family relationships after diagnosis of a mental disorder into manageable themes (1), which allows her to summarise the key findings so they are easily understandable by support groups who help families with mental health diagnoses (1). <p>Weakness</p> <ul style="list-style-type: none"> Andi would decide on the themes about family relationships prior to conducting the analysis so could be biased (1), therefore she may miss out some themes that the patients or their family think are important so her interpretation of the data may lack validity (1). <p>Answers must relate to the scenario.</p> <p>Generic answers score 0 marks.</p> <p>Look for other reasonable marking points.</p>	(4)

Question Number	Answer	Mark
3 (a)	<p style="text-align: center;">AO1 (2 marks)</p> <p>One mark for each statement of an aim.</p> <p>For example:</p> <ul style="list-style-type: none"> They aimed to see if neurotransmitters other than dopamine were implicated in causing schizophrenia (1). They aimed to see what role glutamate has in causing schizophrenia (1). <p>Look for other reasonable marking points.</p>	(2)

Question Number	Answer	Mark
3 (b)	<p style="text-align: center;">AO1 (2 marks), AO3 (2 marks)</p> <p>One mark for identification of each strength/weakness in relation to secondary data (AO1) One mark for justification of each strength/weakness (AO3)</p> <p>For example: Strength</p> <ul style="list-style-type: none"> • If a mental health disorder is uncommon it may be hard to find enough patients to carry out research for primary data (1), so the use of secondary data allows a lot of different studies regarding the mental health disorder to be collated which may increase the diversity of the sample so increasing generalisability (1). <p>Weakness</p> <ul style="list-style-type: none"> • The secondary data collected may include studies that have used an old classification system such as DSM-III to diagnose the patients (1), therefore the results may not be true of updated classification systems and so may not be valid for mental health disorders at the present time (1). <p>Look for other reasonable marking points.</p>	(4)

Question Number	Indicative Content	Mark
4	<p style="text-align: center;">AO1 (4 marks), AO2 (4 marks)</p> <p>AO1</p> <ul style="list-style-type: none"> • The original dopamine hypothesis states that excess dopamine in the brain causes symptoms of schizophrenia. • The revised dopamine hypothesis suggests excess dopamine in the mesolimbic areas through D2 receptors causes 'positive' symptoms such as hallucinations and delusions. • The revised dopamine hypothesis suggests a lack of dopamine in the prefrontal cortex through reduced D1 activation can lead to negative symptoms such as poverty of speech. • If glutamate production is blocked, then this can also cause schizophrenia as it then leads to an increase in the amount of dopamine in the brain. <p>AO2</p> <ul style="list-style-type: none"> • There are alternative explanations for schizophrenia such as the genetic explanation, which may apply to Hector as his mother also has schizophrenia. • Hector suffers from hallucinations as he can hear voices telling him what to do, therefore he may have excess dopamine in the mesolimbic system. • Hector may also have a lack of dopamine in his prefrontal cortex as he has disorganised thinking and cannot make connections between his thoughts. • Anti-psychotic drugs work by reducing the level of dopamine in the brain, so if the medication Hector's doctor gave him works, this suggests his schizophrenia may be caused by an excess of dopamine. <p>Look for other reasonable marking points.</p>	(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)

Question Number	Indicative Content	Mark
5	<p style="text-align: center;">AO1 (4 marks), AO3 (4 marks)</p> <p>AO1</p> <ul style="list-style-type: none"> • In order to be valid a classification system must accurately diagnose a mental health disorder, and lead to the right treatment for the diagnosed mental health disorder. • If a classification system has concurrent validity then it should come up with the same diagnosis for the same symptoms at the same time as another classification system. • Predictive validity is when upon diagnosing a mental health disorder accurate predictions can be made about how the disorder will progress, and how it will respond to treatment. • To have a valid classification system then symptoms of a disorder have to be operationalised and measurable e.g. social withdrawal for schizophrenia. <p>AO3</p> <ul style="list-style-type: none"> • Rosenhan (1973) found that hospital staff could not accurately diagnose the fact that the pseudo-patients did not have a mental health disorder so the classification systems at the time were not valid. • Andrews et al. (1999) found that DSM IV and ICD had agreement rates for disorders such as depression, therefore it can be said that both systems have concurrent validity. • Powers et al. (2017) found that women who had suffered complex post traumatic disorder also had higher levels of alcohol and substance misuse as predicted by ICD 11, showing that ICD 11 does have good predictive validity. • Many mental health disorders are co-morbid so it may be hard for a clinician to accurately diagnose one disorder, therefore making the use of classification systems less valid as it is hard to operationalise the symptoms of one disorder. <p>Look for other reasonable marking points.</p>	(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)

Question Number	Indicative Content	Mark
6	<p style="text-align: center;">AO1 (8 marks), AO3 (12 marks)</p> <p>E.g. Anorexia Nervosa.</p> <p>AO1</p> <ul style="list-style-type: none"> • Cognitive behavioural therapy can be used to treat anorexia nervosa and focuses on the thoughts and behaviours associated with the disorder. • It is usually carried out on a one to one basis with the therapist and the client over around 20 sessions or more if needed. • At the beginning of the treatment the client will be told the facts about their disorder, such as the effects on their body. • They will be told what the treatment entails so that they understand the process and feel part of the treatment. • The therapist will spend some sessions focussing on the reasons why the client has anorexia, looking at factors such as their body image. • The therapist will look at any rules the client has about food, and the thought processes involved in these rules. • Towards the end of the cognitive behavioural therapy the sessions may look at the client's thought processes to try and avoid the client relapsing in the future. • The client and therapist may also create a plan, that both agree on, to help stop the client from going back to their old eating habits. <p>AO3</p> <ul style="list-style-type: none"> • If the client is not willing to engage in the therapy from the beginning and is not motivated to change their eating habits, then the therapy will not be effective. • Pike et al. (2003) found that cognitive behavioural therapy was more effective than counselling for those who had anorexia nervosa, with a lower relapse rate. • Brown et al. (2013) found that the early therapeutic alliance between the therapist and the client did not affect completing cognitive behavioural therapy for anorexia nervosa, but that the therapeutic alliance at the middle of the treatment did. • Cognitive behavioural therapy does look at factors that affect anorexia nervosa so may be more effective than drug treatment which just aims to control the symptoms. • Zipfel et al. (2013) found that enhanced cognitive behavioural therapy was no more effective in weight gain compared to a focal psychodynamic therapy, so either treatment is effective. • Cognitive behavioural therapy can give the clients the ability to monitor and challenge their thought processes, so it can be used by the client in the long term, if they have any future issues. • It can be time consuming for the client, as they have to attend sessions at least once a week, as well as do homework outside the sessions. 	(20)

- Cognitive behavioural therapy can be used on outpatients, so the person with anorexia nervosa can carry out their daily lives, such as carry on working, which may be more convenient for them.
- Cognitive behavioural therapy focuses on current maladaptive thought processes so it does not look at other reasons for the development of anorexia nervosa, such as issues from childhood.
- Cognitive behavioural therapy can be quicker than other therapies such as psychoanalysis, which is important as the client may become very ill from the side effects of anorexia nervosa if it is not treated quickly.
- CBT can be carried out in group sessions, so it may be cheaper than other therapies which require one to one intervention.
- CBT requires the patient to be committed to the therapy, which may not be the case for people with anorexia as they may not think they need therapy.

E.g. Obsessive-compulsive disorder.

AO1

- In cognitive behavioural therapy the therapist will first look at the obsessive thoughts and compulsive behaviours of the client to understand what drives their behaviour.
- The therapist aims to challenge these thoughts by asking the client what makes the thoughts cause anxiety.
- The obsessive thoughts will also be tested to see if they are actually true, in the hope that this will reduce the anxiety caused by the thoughts.
- The clients may be asked to think about what would happen if they did not do a certain behaviour, such as checking, and these would be discussed to see what the most likely outcome would be.
- If the client avoids doing certain things due to their compulsion, such as eat in restaurants the therapist may use behavioural experiments to show what does actually happen in these situations.
- Clients may be asked to do certain tasks that trigger their anxiety outside of the sessions with the aim of them reducing their anxiety the more they carry out the tasks.
- Clients may also be given more adaptive thoughts to practise when carrying out tasks that make them anxious, such as 'I will not get ill if I only wash my hands once'.
- The client measures their anxiety levels throughout the sessions and also the homework, and to take notice of reductions to anxiety in different situations.

AO3

- March et al. (2004) found that cognitive behavioural therapy on its own, or combined with a drug treatment, was more effective in treating OCD in children and adolescents than a drug treatment on its own.
- March et al. (2004) found that the best treatment for OCD was a combination of CBT and sertraline, suggesting that CBT on its own is not as effective.

- Cognitive behavioural therapy for OCD does not have any physical side effects, unlike drug therapy so can be seen as better for the client.
- It may not be effective for everybody, such as those who have more complicated mental health issues, as they may not be able to engage with the treatment and so may not change their behaviour.
- Sadri et al. (2017) found that CBT did reduce perfectionism and other symptoms for OCD in children, however this difference was not significant.
- Cognitive behavioural therapy focuses on thought processes, so it does not look at other reasons for the development of OCD, such as classical conditioning.
- CBT can be more cost effective than other therapies such as psychoanalysis, as it can be done in group sessions and takes less time.
- Abramowitz et al. (2005) found that cognitive behavioural therapy was just as effective in the treatment of OCD as exposure therapies.
- It can be time consuming for the client, as they have to attend sessions at least once a week, as well as do homework outside the sessions.
- Cognitive behavioural therapy is available free of charge on the NHS in the United Kingdom so may be more accessible to clients than other treatments which they may have to pay for.
- Cognitive behavioural therapy can give the clients the ability to monitor and challenge their thought processes, so it can be used by the client in the long term, if they find their compulsive behaviour is returning.
- If accessed through the NHS sessions may be limited in number, and so CBT may not be effective in treating OCD.

E.g. Unipolar depression.

AO1

- Cognitive behavioural therapy for clients with depression often lasts for 6 to 12 sessions on the NHS, with the clients receiving one or two sessions a week.
- It aims to challenge the client's maladaptive thoughts that have led to the depression.
- At the beginning of the treatment clients may be told how their thought patterns lead to their depression and behaviours.
- The therapist listens to the client's core beliefs about themselves to understand what the client is thinking and the processes involved.
- Clients may be taught how to notice when they are thinking maladaptive thoughts that lead to their depression.
- The therapist will help the client work through some more adaptive thoughts for given situations, which should reduce their depression.
- The client may be taught how to focus on how shouting at a child does not make them a bad parent, just a parent who may be tired at that point in time.
- Clients may be given homework to do outside the sessions, such as carry out a task, which will hopefully also challenge their negative thoughts.

AO3

- Williams et al. (2013) found that CBM-I combined with iCBT significantly reduced the symptoms of unipolar depression on all the measures they used.
- People with unipolar depression may not have the energy or motivation to engage with cognitive behavioural therapy, so it may not be useful without anti-depressants to start with.
- Ebert et al. (2015) in a review of 7 studies found that computer based CBT was effective for treating depression in children and adolescents
- Shallcross et al. (2015) found that a mindfulness based cognitive behavioural treatment was no more effective at preventing relapse in clients with depression than an active control condition.
- Cognitive behavioural therapy does not have physical side effects, unlike the use of anti-depressants, so can be considered more ethical.
- Cognitive behavioural therapy focuses on current maladaptive thought processes, so ignores other factors that may have caused the depression, such as a traumatic childhood.
- Cognitive behavioural therapy aims to give the client the tools they need to reduce their depression so the client can use these tools in the future if further life events may lead to depression.
- Johnsen and Friberg (2015) carried out a meta-analysis and found that CBT was not as effective in the treatment of depression now as it was in the 1970s when it was first used.
- CBT can be more cost effective than other therapies such as psychoanalysis, as it can be done in group sessions or on the computer.
- If the causes of depression are due to neurotransmitters, then cognitive behavioural therapy will not treat the depression, and anti-depressant medication would be more effective.
- CBT is available on the NHS, so can be accessed by any patient, unlike other therapies which may only be accessed by those who can afford them.
- CBT requires the patient to be able to express themselves, which patients with unipolar depression may not be able to do effectively.

Look for other reasonable marking points.

Level	Mark	Descriptor
AO1 (8 marks), AO3 (12 marks) Candidates must demonstrate a greater emphasis on evaluation/conclusion vs knowledge and understanding in their answer. Knowledge & understanding is capped at maximum 8 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)
Level 5	17–20 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 and presents a balanced response, leading to an effective nuanced and balanced conclusion. (AO3)

SECTION B - Criminological Psychology

Question Number	Answer	Mark
7 (a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for a statement in relation to the aim of their criminological psychology practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none">• Our aim was to investigate whether weapon focus affected the accuracy of the participant's recall of a video (1). <p>Answers must relate to the criminological psychology practical investigation.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark
7 (b)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Up to four marks for description in relation to their criminological psychology practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none">• First of all we picked two videos for the participants to watch, one of a crime with a gun and one of a crime without a weapon (1). We picked our participants through opportunity sampling, and asked them to come to a classroom individually to watch one of the videos of a crime (1). After they had watched the video of the crime they were given a distractor task for 5 minutes so they could not rehearse what they had seen (1). We then gave them questions about the crime, including a question that asked them to describe what the perpetrator had been wearing and what they looked like (1). <p>Answers must relate to the criminological psychology practical investigation.</p> <p>Look for other reasonable marking points.</p>	(4)

Question Number	Answer	Mark
8(a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for identification in relation to the scenario.</p> <p>For example:</p> <ul style="list-style-type: none"> Brie used an opportunity sample as she used people who were available in the refectory that lunch time (1). <p>Answers must relate to the scenario.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark
8 (b)	<div><div>A02 (3 marks)</div><div>One mark for correct/appropriate title.</div><div>One mark for correct/appropriate labelling of axes.</div><div>One mark for correct plotting of both mean scores.</div><div><div><div>A bar chart to show mean score (out of 7) for the participants' perception of how likely the person was to commit a crime</div><div><div><div><div>Mean score (out of 7) for the participants' perception of how likely the person was to commit a crime</div><div><div><div><div>7</div><div>6</div><div>5</div><div>4</div><div>3</div><div>2</div><div>1</div><div>0</div></div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div><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Question Number	Answer	Mark
8 (c)	<p style="text-align: center;">AO3 (3 marks)</p> <p>1 mark per explicit comparison. The answer must include at least one similarity and one difference otherwise max 2 marks.</p> <p>For example:</p> <ul style="list-style-type: none"> Both independent groups and matched pairs have different criminals in the conditions of the study into anti-social behaviour (1). In matched pairs the researcher matches the criminals in each group on desired characteristics (such as number of convictions) whilst in independent groups the participants in each group could have different characteristics (1). Both independent groups and matched pairs are less likely to have demand characteristics than repeated measures, as the criminals only take part in one condition in a study into anti-social behaviour (1). <p>Look for other reasonable marking points.</p>	(3)

Question Number	Indicative Content	Mark
9	<p style="text-align: center;">AO1 (4 marks), AO2 (4 marks)</p> <p>AO1</p> <ul style="list-style-type: none"> • If the frontal lobe is damaged then the person has less control over their impulses, so this may make them more aggressive. • Damage to the frontal lobe also negatively affects our ability to consider alternative behaviours and think about possible consequences of aggression. • Damage to the amygdala can lead to less control over aggressive impulses, so making someone more aggressive. • Another explanation is personality, if someone scores high on extroversion, neuroticism and psychoticism they may be prone to being violent. <p>AO2</p> <ul style="list-style-type: none"> • If Pat hit the front of his head he may have damaged the frontal lobe, which may explain why he has been arrested for fighting. • Due to damage to the frontal lobe Pat may not think about the fact he may lose his friends due to his aggression towards them. • Pat may have damaged his amygdala, so cannot control his aggression which is why he shouts at his family members. • If Pat scores highly on extroversion he may have an underactive Reticular Activating System (RAS), which may be why he shouts at his family, to seek external stimulation. <p>Look for other reasonable marking points.</p>	(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)

Question Number	Indicative Content	Mark
10	<p data-bbox="507 237 1158 271" style="text-align: center;">AO1 (6 marks), AO2 (4 marks), AO3 (6 marks)</p> <p data-bbox="288 318 352 351">AO1</p> <ul data-bbox="339 358 1369 869" style="list-style-type: none"> • Race may affect the jury decision making process, if the jury is mainly white they are more likely to find people of a different race guilty. • White jurors may see themselves as the in group and discriminate against defendants of another race as they are the out group. • The more attractive a defendant is deemed to be the less likely they are to be found guilty of a crime, apart from fraud. • Juries may use their schemas based on the media, which portrays attractive people as the heroes and unattractive people as the villains. • Unpopular accents can influence the jury, and make it more likely that they will find the defendant guilty. • The further away a trial is from the place the unpopular accent originates from, the more of a negative influence the accent has on the jury. <p data-bbox="288 913 352 947">AO2</p> <ul data-bbox="339 954 1369 1267" style="list-style-type: none"> • Cassandra is white so if the jury is also mainly white they are less likely to find her guilty of the burglary. • As Cassandra is young and slim this may make her appear attractive to the jury and so they will not find her guilty of burglary. • Cassandra has an unpopular accent, so her accent may have a negative impact on the jury and the decision they make. • Being over a 100 miles from her home town may mean the jury find Cassandra guilty as they see her as a member of an out group. <p data-bbox="288 1312 352 1346">AO3</p> <ul data-bbox="339 1352 1369 2056" style="list-style-type: none"> • Carter and Mazzula (2013) used 210 mock jurors and found that there was in group and out group bias when deciding on the outcome of an employment case, so showing that race does affect the jury and their decision making. • The use of mock juries is not valid, as the jurors know there is no consequence of their decision, so in Cassandra's trial her race may not affect the decision of the jury. • Schvey et al. (2013) found that obese female defendants were judged more harshly by male jurors than slim female defendants, therefore showing that appearance does affect the decision making of a jury. • Schvey et al. (2013) only used male jurors so attractiveness may not affect the decision of the jury if the jury is mainly female, therefore the extent characteristics of the defendant affect the decision making may be limited. • Dixon et al. (2002) found that participants, thought that a defendant with a strong Birmingham accent were more guilty than a defendant with a standard English accent showing how a defendant speaks can affect the jury decision making process. 	(16)

	<ul style="list-style-type: none">• The impact of the instructions of the judge may also have a significant effect on the jury decision making, as found by Reed (1980) so it may be that the effect of the characteristics of the defendant are reduced depending on the judge's instructions. <p>Look for other reasonable marking points.</p>	
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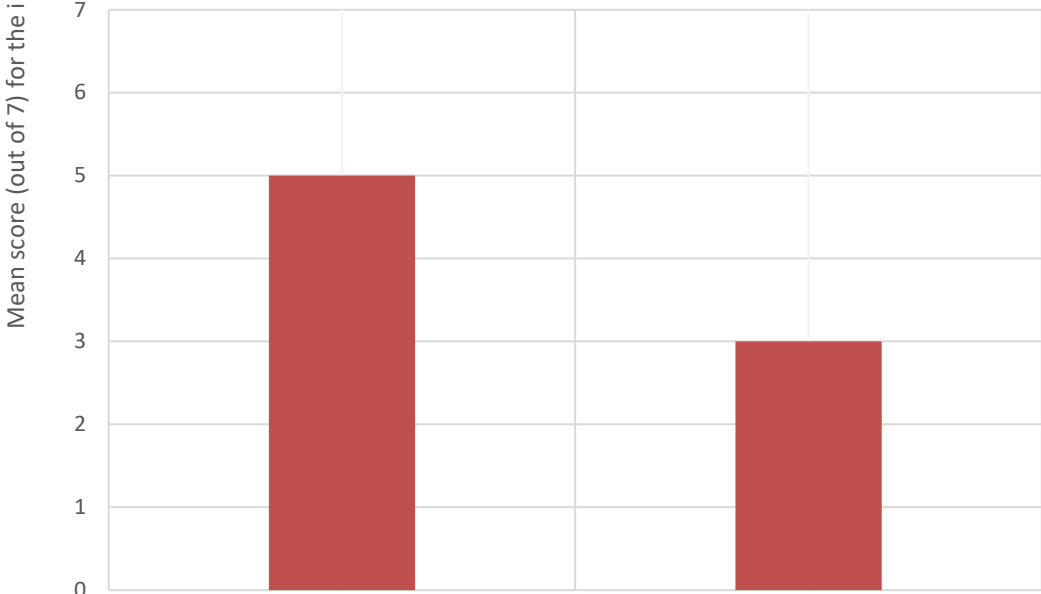
Level	Mark	Descriptor
AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs judgement/conclusion in their answer. Application to the scenario is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1–4 Marks	<p>Demonstrates isolated elements of knowledge and understanding. (AO1)</p> <p>Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)</p> <p>A judgement/decision may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)</p>
Level 2	5–8 Marks	<p>Demonstrates mostly accurate knowledge and understanding. (AO1)</p> <p>Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)</p> <p>Candidates will produce statements with some development in the form of mostly accurate and relevant factual material leading to a judgement/decision being presented. Candidates will demonstrate a grasp of competing arguments but response may be imbalanced. (AO3)</p>
Level 3	9–12 Marks	<p>Demonstrates accurate knowledge and understanding. (AO1)</p> <p>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)</p> <p>Displays a mostly developed and logical argument, containing mostly coherent chains of reasoning. Demonstrates an awareness of competing arguments, presenting a judgement/decision which may be imbalanced. (AO3)</p>
Level 4	13–16 Marks	<p>Demonstrates accurate and thorough knowledge and understanding. (AO1)</p> <p>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)</p> <p>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 a balanced judgement/decision. (AO3)</p>

Child Psychology

Question Number	Answer	Mark
11 (a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for a statement in relation to the aim of their child psychology practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"> • Our aim was to investigate whether parents thought that boys and girls should play with different toys (1). <p>Answers must relate to the child psychology practical investigation.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark
11 (b)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Up to four marks for description in relation to their child psychology practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"> • We decided to use a questionnaire using closed questions such as 'Is a doll a suitable toy for a boy? Yes or no' (1). Once we had devised our questionnaire we gave them out to parents who had children aged between 4 and 7 at a local primary school (1). We decided what would be typical girls' toys such as a doll and what would be typical boys' toys, such as cars and created a tally chart (1). Once we had collected all the questionnaires we noted how many had said yes to typical girls' and boys' toys and how many had said no in our tally chart (1). <p>Answers must relate to the child psychology practical investigation.</p> <p>Look for other reasonable marking points.</p>	(4)

Question Number	Answer	Mark
12 (a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for identification in relation to the scenario.</p> <p>For example:</p> <ul style="list-style-type: none"> Brie used an opportunity sample as she used mothers and babies who were available at the day care centre on that Monday (1). <p>Answers must relate to the scenario.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark						
12 (b)	<p style="text-align: center;">AO2 (3 marks)</p> <p>One mark for correct/appropriate title.</p> <p>One mark for correct/appropriate labelling of axes.</p> <p>One mark for correct plotting of both mean scores.</p> <div><p>A bar chart to show the mean score (out of 7) for the intensity of crying after the mother leaves a one-year-old in a playroom.</p><table><tr><th>Condition</th><th>Mean score (out of 7)</th></tr><tr><td>Condition A: the one-year-old spent less than 15 hours a week in day care.</td><td>5</td></tr><tr><td>Condition B: the one-year-old spent more than 30 hours a week in day care.</td><td>3</td></tr></table></div> <div><div>Condition A: the one-year-old spent less than 15 hours a week in day care.</div><div>Condition B: the one-year-old spent more than 30 hours a week in day care.</div></div> <p>Look for other reasonable marking points.</p>	Condition	Mean score (out of 7)	Condition A: the one-year-old spent less than 15 hours a week in day care.	5	Condition B: the one-year-old spent more than 30 hours a week in day care.	3	(3)
Condition	Mean score (out of 7)							
Condition A: the one-year-old spent less than 15 hours a week in day care.	5							
Condition B: the one-year-old spent more than 30 hours a week in day care.	3							

Question Number	Answer	Mark
12 (c)	<p style="text-align: center;">A03 (3 marks)</p> <p>1 mark per explicit comparison. The answer must include at least one similarity and one difference otherwise max 2 marks.</p> <p>For example:</p> <ul style="list-style-type: none"> Both independent groups and matched pairs have different children in the conditions of the study into development (1). In matched pairs the researcher matches the children in each group on desired characteristics (such as time in day care) whilst in independent groups the participants in each group could have different characteristics (1). Both independent groups and matched pairs are less likely to have demand characteristics than repeated measures, as each child only takes part in one condition in a study into development (1). <p>Look for other reasonable marking points.</p>	(3)

Question Number	Indicative Content	Mark
13	<p style="text-align: center;">A01 (4 marks), A02 (4 marks)</p> <p>A01</p> <ul style="list-style-type: none"> One cognitive explanation for autism is the theory of mind which states that a person with autism cannot understand another person's point of view. The theory of mind says that children with autism do not understand others facial expression which means they have difficulty understanding others non-verbal communication. According to the theory of mind people with autism are high systemisers, so they use rules to organise internal and external events. Another explanation is genetic which states that there are a variety of genes that interact and may cause autism. <p>A02</p> <ul style="list-style-type: none"> Pat cannot understand his brother's point of view when playing with him, and so finds it hard to understand why his brother says the box is a ship. The reason Pat may find it hard to socialise with other children is that he does not understand what emotions their facial expressions are showing. As he may be a high systemiser, this explains why Pat gets into arguments with other children if he thinks they have broken the rules of the game they are playing. 	(8)

	<ul style="list-style-type: none"> Pat may have the variety of genes that cause autism, whilst his brother does not have the same genes which explains why the brother does not have autism. <p>Look for other reasonable marking points.</p>	
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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)

Question Number	Indicative Content	Mark
14	<p data-bbox="507 237 1158 271" style="text-align: center;">AO1 (6 marks), AO2 (4 marks), AO3 (6 marks)</p> <p data-bbox="288 318 352 351">AO1</p> <ul data-bbox="339 358 1369 869" style="list-style-type: none"> • Day care can affect attachment styles with children who spend more time in day care possibly developing insecure attachments. • A child in day care may become more anxious avoidant, so they are not affected by the absence of their mother. • One benefit of day care is that children socialise more, so they find it easier to make friends when they go to school. • Children who go to day care have to learn to share toys and interact with each other which helps them understand social rules. • Day care in the United Kingdom provides experiences that help enhance a child's cognitive development such as number games. • Ofsted rate day care providers in the United Kingdom, and part of that process is showing that they have a formal curriculum to help the child develop. <p data-bbox="288 954 352 987">AO2</p> <ul data-bbox="339 994 1337 1346" style="list-style-type: none"> • Julius could have developed an anxious avoidant attachment to his mother as he ignores her when she picks them up from the day care. • Alexander has developed a secure attachment to his mother as he is happy to see her when she returns from work. • Day care has helped Alexander develop socially as he has a lot of friends that he plays with at the day care. • The time spent playing word games has helped Alexander develop cognitively, as he is starting to recognise letters at an earlier age than Julius. <p data-bbox="288 1391 352 1424">AO3</p> <ul data-bbox="339 1431 1369 2020" style="list-style-type: none"> • Belsky and Rovine (1988) found that children who spent more than 20 hours in day care developed an insecure attachment to their mother, showing that day care can have a negative effect on the development of a child. • It could be the temperament of the child that affects the attachment they have with their mothers, so being in day care for long periods of time may not affect the development of a child. • Andersson (1992) found that day care had a positive effect on the social development of a child, as they had more friends and were more outgoing at school compared to children who did not attend day care. • Andersson (1992) carried out his study in Sweden which has better quality day care, and those whose children attend it at an earlier age came from high income families, so it may be the socio-economic status of the family that affected the development of the children, not the day care. 	(16)

	<ul style="list-style-type: none"> • The EPPE project (2004) found that children who attended day care before the age of 3 had better intellectual development, showing that day care can provide activities that help a child's intellectual development. • The EPPE project (2004) found that the amount of time spent in day care per week made no difference in the intellectual benefits of day care, so there may be other factors that influence the development of children attending day care. <p>Look for other reasonable marking points.</p>	
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Level	Mark	Descriptor
AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs assessment/conclusion in their answer. Application to the context is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1–4 Marks	<p>Demonstrates isolated elements of knowledge and understanding. (AO1)</p> <p>Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)</p> <p>Generic assertions may be presented. Limited attempt to address the question. (AO3)</p>
Level 2	5–8 Marks	<p>Demonstrates mostly accurate knowledge and understanding. (AO1)</p> <p>Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)</p> <p>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)</p>
Level 3	9–12 Marks	<p>Demonstrates accurate knowledge and understanding. (AO1)</p> <p>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)</p> <p>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)</p>
Level 4	13–16 Marks	<p>Demonstrates accurate and thorough knowledge and understanding. (AO1)</p> <p>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)</p> <p>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)</p>

Health Psychology

Question Number	Answer	Mark
15 (a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for a statement in relation to the aim of their health psychology practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"> • Our aim was to investigate whether modern pop songs reference drugs in a positive or negative manner (1). <p>Answers must relate to the health psychology practical investigation.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark
15 (b)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Up to four marks for description in relation to the health psychology practical investigation.</p> <p>For example:</p> <ul style="list-style-type: none"> • We decided to pick the songs that were at numbers 1 to 40 in the UK and US charts on the week we planned our content analysis (1). We then printed the lyrics to each of the forty songs as a group and noted down any references to drugs, and what exactly those references were (1). Once we had all the references to drugs we decided what the most common themes were and put them in a tally chart under positive and negative (1). We then watched music videos to check that the references were drug related. (1) <p>Answers must relate to the health psychology practical investigation.</p> <p>Look for other reasonable marking points.</p>	(4)

Question Number	Answer	Mark
16 (a)	<p style="text-align: center;">AO2 (1 mark)</p> <p>One mark for identification in relation to the scenario.</p> <p>For example: Brie used an opportunity sample as she used heroin addicts who were available at the rehabilitation centre on that Monday (1).</p> <p>Answers must relate to the scenario.</p> <p>Look for other reasonable marking points.</p>	(1)

Question Number	Answer	Mark
16 (b)	<div><div>AO2 (3 marks)</div><div><p>One mark for correct/appropriate title.</p><p>One mark for correct/appropriate labelling of axes.</p><p>One mark for correct plotting of both mean scores.</p></div><div><div><div><div>A bar chart to show the mean score (out of 7) for the intensity of withdrawal symptoms when given the new drug or not.</div><div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>7</div><div>6</div><div>5</div><div>4</div><div>3</div><div>2</div><div>1</div><div>0</div></div><div><div>Mean score (out of 7) for the intensity of withdrawal symptoms.</div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div><div><div>Condition A: the heroin addicts were not given the new drug</div><div>Condition B: the heroin addicts were given the new drug</div></div></div></div></div></div></div>	(3)
Look for other reasonable marking points.		

Question Number	Answer	Mark
16 (c)	<p style="text-align: center;">AO3 (3 marks)</p> <p>1 mark per explicit comparison. The answer must include at least one similarity and one difference otherwise max 2 marks.</p> <p>For example:</p> <ul style="list-style-type: none"> Both independent groups and matched pairs would have different addicts in the conditions of a study into drugs (1). In matched pairs the researcher matches the addicts in each group on desired characteristics (such as length of addiction) whilst in independent groups the participants in each group could have different characteristics (1). Both independent groups and matched pairs are less likely to have demand characteristics than repeated measures, as the addicts only take part in one condition in a study into drugs (1). <p>Look for other reasonable marking points.</p>	(3)

Question Number	Indicative Content	Mark
17	<p style="text-align: center;">AO1 (4 marks), AO2 (4 marks)</p> <p>AO1</p> <p>E.g. Classical conditioning</p> <ul style="list-style-type: none"> • Originally the neutral stimulus is alcohol as it has no conditioned effect on the body so the person is not addicted to it. • If a person drinks alcohol often enough then they will associate the alcohol with pleasurable feelings. • When alcohol is drunk at a specific time or place then the time/place will become associated with the alcohol and crave it. • Opening a bottle of alcohol can lead to the body automatically expecting the alcohol and the body will release antagonists to counter act the alcohol. <p>E.g. Operant conditioning.</p> <ul style="list-style-type: none"> • Operant conditioning works through the process of reinforcement, if a person is reinforced for a behaviour then they are more likely to repeat the behaviour. • Alcohol acts as a positive reinforcement because it makes people feel more relaxed, and lowers their inhibitions. • Withdrawal symptoms from alcohol are unpleasant, such as a headache, so act as a punishment for not drinking alcohol. • Drinking alcohol gets rid of the unpleasant withdrawal symptoms, so it acts as a negative reinforcement so leading to addiction. <p>E.g. Social learning theory.</p> <ul style="list-style-type: none"> • People addicted to alcohol will have observed a role model drinking alcohol. • If the role model who drinks alcohol has relevance, then the person is more likely to pay attention to that behaviour and remember it. • Vicarious reinforcement, such as seeing the role model enjoy the alcohol, will make it more likely that the behaviour will be repeated. • When imitating the drinking of alcohol, if the person is further reinforced they will then repeat the behaviour again and again <p>AO2</p> <p>E.g. Classical conditioning.</p> <ul style="list-style-type: none"> • When Pat first started to drink alcohol it would not lead to addiction as he has not associated it with feeling relaxed or calm. • Because he drinks alcohol every day it now causes a conditioned response of relaxation so he needs alcohol to feel relaxed. • As Pat drinks alcohol after the evening meal he has associated the evening meal with alcohol and he craves it with the evening meal. 	(8)

	<ul style="list-style-type: none"> Pat is addicted to alcohol and has become more tolerant to it because his body automatically responds as though he has already drunk the alcohol when he opens a bottle. <p>E.g. Operant conditioning.</p> <ul style="list-style-type: none"> Pat is reinforced for drinking alcohol as his friends praise him if he drinks the most alcohol, so he will repeat the behaviour. The feelings of relaxation and calm that he gets after drinking alcohol acts as a positive reinforcement. When he does not drink alcohol during the day Pat suffers from withdrawal symptoms, which may include hallucinations as he is addicted, so he is punished for not drinking alcohol. To get rid of the withdrawal symptoms Pat drinks more alcohol, so is negatively reinforced and so becomes addicted. <p>E.g. Social learning theory.</p> <ul style="list-style-type: none"> When Pat was a child he saw his father drink alcohol, so he has been exposed to the actions involved. His father is a relevant role model to Pat, as he is the same sex and in a position of power, so Pat is more likely to remember the actions associated with drinking alcohol. His father was reinforced for drinking alcohol, as the first drink improved his mood, so Pat is vicariously reinforced. Pat's friends praise him if he drinks the most alcohol so this further motivates Pat to repeat the behaviour. <p>Look for other reasonable marking points.</p>	
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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)

Question Number	Indicative Content	Mark
18	<p data-bbox="507 237 1158 271" style="text-align: center;">AO1 (6 marks), AO2 (4 marks), AO3 (6 marks)</p> <p data-bbox="288 318 352 351">AO1</p> <ul data-bbox="339 358 1369 869" style="list-style-type: none"> • Nicotine acts on neurotransmitters within a few seconds, as it goes from the lungs into the blood stream and then into the brain. • Nicotine molecules are a similar shape to acetylcholine (ACh) molecules and binds to ACh receptors in the brain. • After nicotine has attached to the ACh receptors it makes that neuron fire more frequently leading to feelings of alertness. • Nicotine also increases dopamine levels in the reward pathway leading to increases feelings of happiness. • The smoke from cigarettes may also decrease the level of monoamine oxidase, (MAO), which means that the dopamine is not broken down as quickly so it has more of an effect on the reward system. • Norepinephrine levels are also increased due to the excess ACh, leading to better memory functioning. <p data-bbox="288 954 352 987">AO2</p> <ul data-bbox="339 994 1361 1384" style="list-style-type: none"> • As Cassandra smokes cigarettes the nicotine will get to her brain in a few seconds, explaining why she feels the effects almost immediately. • The nicotine has bound to her ACh receptors which leads to Cassandra feeling more alert after smoking a cigarette. • Cassandra feels happier after smoking because the nicotine has increased the levels of dopamine in the reward pathway in her brain. • Because Cassandra's brain has got used to the levels of neurotransmitters due to nicotine it has adjusted the natural production of these neurotransmitters, which explains why she now smokes over 30 a day. <p data-bbox="288 1433 352 1467">AO3</p> <ul data-bbox="339 1473 1369 2056" style="list-style-type: none"> • Kenny and Markou (2006) found that rats that self-administered nicotine had an increased the sensitivity of brain reward systems, suggesting that dopamine does increase and lead to nicotine addiction. • Animal experiments to look at the effects of nicotine on the brain may not explain how nicotine affects the human brain as there are biological differences, so may not explain nicotine addiction in humans. • Burnzell et al. (2010) found that rats who had specific nicotine sensitive ACh receptors self-administered nicotine more than the rats who did not have the same receptors, showing that neurotransmitters do affect whether people become addicted to nicotine or not. • The neurotransmitter explanation cannot explain why people smoke their first cigarette, therefore it is not effective in explaining the starting process towards addiction. • Markou et al. (1998) found that there was a significant decrease in the activity of the brain reward pathway in rats when the rats were 	(16)

	<p>withdrawn from nicotine, so neurotransmitters can effectively explain withdrawal symptoms experienced by smokers.</p> <ul style="list-style-type: none"> • There are alternative explanations to nicotine addiction, such as the positive reinforcement due to the activation of the dopamine reward pathway, so the biological explanation may not be a complete explanation on its own. <p>Look for other reasonable marking points.</p>	
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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.		
	0	No rewardable material.
Level 1	1–4 Marks	<p>Demonstrates isolated elements of knowledge and understanding. (AO1)</p> <p>Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)</p> <p>A judgement/decision may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)</p>
Level 2	5–8 Marks	<p>Demonstrates mostly accurate knowledge and understanding. (AO1)</p> <p>Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)</p> <p>Candidates will produce statements with some development in the form of mostly accurate and relevant factual material leading to a judgement/decision being presented. Candidates will demonstrate a grasp of competing arguments but response may be imbalanced. (AO3)</p>
Level 3	9–12 Marks	<p>Demonstrates accurate knowledge and understanding. (AO1)</p> <p>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)</p> <p>Displays a mostly developed and logical argument, containing mostly coherent chains of reasoning. Demonstrates an awareness of competing arguments, presenting a judgement/decision which may be imbalanced. (AO3)</p>
Level 4	13–16 Marks	<p>Demonstrates accurate and thorough knowledge and understanding. (AO1)</p> <p>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)</p> <p>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 a balanced judgement/decision. (AO3)</p>