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EDEXCEL A LEVEL PSYCHOLOGY: QUESTIONS BY TOPIC

Health Psychology (Topic 8)

AS and A Level Psychology Topic 8

36 questions · 324 marks · Mark schemes included

Pearson Edexcel AS (8PS0) and A Level (9PS0) Psychology, June 2016 - June 2025

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HOW TO USE THIS BOOKLET

Questions are grouped by sub-topic and run from the lowest mark tariff to the highest.

Click any heading or question row below to jump straight to it.

On every question page, click ANSWER in the top-right corner to jump to its mark scheme.

Diagrams, graphs, tables and data are printed exactly as they appeared in the original papers.

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QUESTIONS

36 questions · 324 marks · grouped by sub-topic, lowest tariff first



SUB-TOPIC

EXPLANATIONS OF DRUG MISUSE AND ADDICTION

17 questions in this booklet



16 Describe **one** learning explanation for heroin addiction.



15 In your studies of health psychology you will have learned about treatments for alcohol addiction.

(a) Describe **one** treatment for alcohol addiction.

(2)

(b) Explain **one** strength of a treatment for alcohol addiction.

(2)



16 Ben is addicted to heroin. His parents want to find out about the causes of heroin addiction.

(a) Describe **one** biological explanation for heroin addiction.

(4)

This image shows a full page of blank primary-ruled paper. It features ten sets of horizontal lines across the page. Each set consists of three lines: a solid top line, a dashed middle line, and a solid bottom line, providing a guide for letter height and placement in handwriting practice. The paper is white and contains no other markings or text.

(b) Explain **one** weakness of **one** biological explanation for heroin addiction.

(2)

(Total for Question 16 = 6 marks)



16 Brie carried out an experiment to see the effect of a new drug for treating heroin addiction. The new drug was developed to reduce the impact of withdrawal symptoms. She selected heroin addicts from those who were available at a local rehabilitation centre one Monday.

She compared two groups of heroin addicts.

- Condition A: the heroin addicts who were not given the new drug.
- Condition B: the heroin addicts who were given the new drug.

Brie then asked the heroin addicts to rate the intensity of their withdrawal symptoms. A score of 7 was 'high intensity of withdrawal symptoms' and a score of 0 was 'low intensity of withdrawal symptoms'.

(a) Identify the sampling technique used by Brie in her experiment.

(1)

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The results from the experiment carried out by Brie are shown in **Table 4**.

	Condition A: the heroin addicts who were not given the new drug	Condition B: the heroin addicts who were given the new drug
Mean score (out of 7) for the intensity of the withdrawal symptoms.	5	3

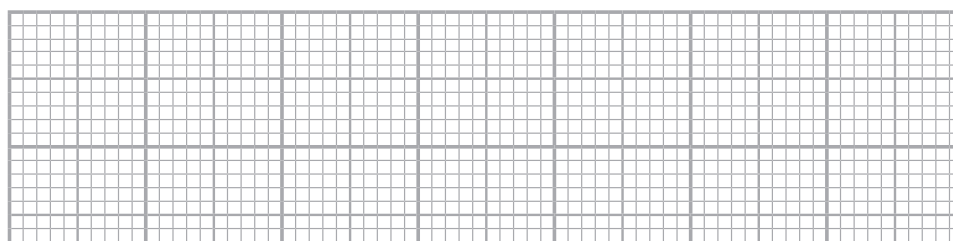
Table 4

(b) Draw a suitable graph to represent the results shown in **Table 4**.

(3)

Title

.....



(c) Brie used an independent groups experimental/research design.

Compare independent groups and matched pairs experimental/research designs as used in health psychology.

(3)



17 There are several treatments for heroin addiction.

Evaluate **one** treatment for heroin addiction.

(8)



16 Helen works with people addicted to alcohol. This includes offering treatments for their addiction to alcohol.

- (a) Describe how **one** treatment could be used by Helen with people addicted to alcohol.

(4)

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- (b) Explain **one** strength and **one** weakness of **one** treatment that is used with people addicted to alcohol.

(4)

Strength

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Weakness

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17 Rachel suffers from alcohol addiction. She started drinking alcohol at a young age, and now drinks excessive amounts of alcohol every day. If Rachel cannot drink alcohol at the start of the day, then she feels too unwell to go into work. Rachel's parents were both treated for alcohol addiction.

Discuss **one** biological explanation for Rachel's alcohol addiction. You must make reference to the context in your answer.

(8)

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17 Pat is addicted to alcohol and so is his father. When Pat was a child he saw his father drink alcohol. His father was often in a bad mood until he had his first alcoholic drink.

When Pat drinks alcohol he feels more relaxed and calm. He often has a drink after his evening meal, and now wants a drink every time he has his evening meal. He can now drink a lot of alcohol without feeling the effects.

Pat also drinks when he is out with his friends who praise the person that can drink the most alcohol. If Pat does not have a drink during the day he feels ill.

Discuss how far **one** learning explanation can account for Pat's addiction to alcohol.

You must make reference to the context in your answer.

(8)

Handwriting practice area with 25 horizontal dotted lines.

Total for Question 17 = 8 marks)

17 Peter is 17 years old and has just been diagnosed with alcohol addiction. His mother is also addicted to alcohol. She drinks alcohol from the moment she gets up in the morning and throughout the rest of the day.

Peter started to drink alcohol at the age of 13 in order to fit in with his group of friends, who also drink alcohol.

When at parties Peter finds that alcohol makes him feel more confident and he finds it easier to talk to other people. He now wants to drink alcohol every time he goes to a party.

Discuss how Peter's development may have affected his addiction.

You must make reference to the context in your answer.

(8)

16 Alicia conducted an experiment to investigate perceptions about whether a drug addict is more likely to commit a crime than a non-drug addict. She gave participants from a local town two different scenarios about a crime.

In the first scenario the participants had to say how likely it was that the person who was not a drug addict committed the crime (condition A). In the second scenario the same participants had to say how likely it was that the person who was a drug addict committed the crime (condition B).

The participants were asked to give a score from 1 to 10, where 1 was highly unlikely and a score of 10 was highly likely.

(a) Explain **one** weakness of Alicia collecting quantitative data.

(2)

(b) Alicia’s results are shown in **Table 3**. Complete **Table 3** and calculate the Wilcoxon Signed Ranks test for Alicia’s experiment.

(4)

Participant	Condition A: Likelihood of non-addict committing the crime	Condition B: Likelihood of drug addict committing the crime	Difference	Rank	Rank if positive	Rank if negative
A	1	5				
B	3	3				
C	2	7				
D	7	8				
E	5	10				
F	4	2				
G	3	6				
Total:						

Table 3

SPACE FOR CALCULATIONS

Wilcoxon T value

(c) Explain **one** improvement Alicia could make to her experiment.

(2)



16 Assess the effectiveness of **one** biological explanation to account for heroin addiction.

(8)



15 Alexei conducted an investigation into whether the use of high fear tactics influenced the amount of drugs that addicts took. Alexei used an opportunity sampling technique to recruit his participants for his investigation from a local alcohol addiction centre.

Half the participants saw a video on the minor short-term effects of taking drugs (condition A) and the other half of the participants saw a video showing the severe health effects of taking drugs (condition B). One week later, the participants had to record the amount of alcohol they had consumed (in units) in the past week.

- (a) Explain **one** strength and **one** weakness of the sampling technique used by Alexei in his investigation on the use of high fear tactics on drug taking.

(4)

Strength

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Weakness

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Table 3 shows the results of Alexei's investigation.

Condition A: Participants who watched a video showing the short-term effects of drugs	Amount of alcohol consumed in the past week (in units)	Condition B: Participants who watched a video showing the severe health effects of taking drugs	Amount of alcohol consumed in the past week (in units)
A	3	G	7
B	6	H	5
C	2	I	9
D	8	J	10
E	1	K	6
F	4	L	9

Table 3

- (b) Calculate the mean number of alcohol units consumed in the past week by participants in **condition A**.

(1)

SPACE FOR CALCULATIONS

Mean for **condition A**

- (c) Calculate the median number of alcohol units consumed in the past week by participants in **condition B**.

(1)

SPACE FOR CALCULATIONS

Median for **condition B**



- (d) Alexei carried out a Mann–Whitney U test on his data. His calculated/observed value was 4.5.

Determine whether Alexei's results were significant or not at $p \leq 0.05$ for a two-tailed (non-directional) hypothesis.

(1)

- (e) Explain **one** improvement that Alexei could make to his investigation.

(2)

18 Donald is addicted to nicotine. Both his parents and his friends smoke cigarettes. His friends started smoking because they thought it made them look more mature.

He finds that nicotine helps him relax, and relieves any stress he feels. Donald finds that there are certain times during the day when he craves a cigarette, such as just after he has eaten.

Evaluate **one** learning explanation for nicotine addiction that could account for Donald smoking cigarettes.

You must make reference to the context in your answer.

(16)

18 Cassandra is addicted to nicotine, and smokes over 30 cigarettes a day. When she smokes a cigarette Cassandra feels the effects almost immediately. She sometimes feels more alert, and sometimes feels more relaxed. She also feels happier and finds her memory improves after smoking a cigarette.

When she started smoking cigarettes Cassandra only had around five cigarettes a day, but this quickly increased as she found that the cigarettes were not having as much effect.

To what extent can **one** biological explanation account for Cassandra's addiction to nicotine?

You must make reference to the context in your answer.

(16)

18 Mark is training to be a health psychologist. He is currently studying causes of heroin addiction using addicts he treats as his participants.

In one case Mark noted that the person took heroin in specific places, such as in the kitchen but not in the bedroom. He noted that overdoses are caused when people take heroin in places they do not normally take it.

Mark asked another addict the reasons why they took heroin. On some occasions they were positive, such as getting high, and sometimes negative to take away pain.

He also observed that a lot of heroin addicts had friends who are addicted to heroin, and some of the heroin addicts said that they started taking heroin because someone they knew also took it.

Evaluate **one** learning explanation for heroin addiction in relation to Mark's case studies.

You must make reference to the context in your answer.

(16)

17 Maxyme is addicted to alcohol. He always has a drink of alcohol after he has eaten, and every time he goes out, he needs to drink. He finds drinking makes him feel relaxed and more confident and says he started drinking when he was nervous about being in large groups.

Maxyme's friends used to say he was much more fun when he had a drink, but now that he drinks excessively they are embarrassed by his behaviour. Maxyme gets withdrawal symptoms if he does not have a drink of alcohol in the morning.

His mother used to drink a lot of alcohol, and when Maxyme was younger his group of friends often drank alcohol when they were at the park. When questioned about his alcohol addiction, Maxyme said it is due to seeing his mother drinking when he was a child.

Assess the effectiveness of **one** learning explanation to account for Maxyme's alcohol addiction.

You must make reference to the context in your answer.

(16)

17 Humphrey is addicted to alcohol. He drinks a can of beer as soon as he wakes up and then continues drinking throughout the day, often progressing to stronger alcohol such as bottles of vodka. His friends no longer go out with him or visit him at home due to his alcohol addiction.

Humphrey has lost his job due to being unable to carry out his work effectively because he was drunk. He was recently admitted to hospital as he was found unconscious after drinking. Whilst in hospital, Humphrey suffered withdrawal symptoms because he could not get any alcohol.

Humphrey has decided he wants to address his alcohol addiction and has admitted himself into a clinic which uses aversion therapy.

Evaluate aversion therapy as it could be used with Humphrey.

You must make reference to the context in your answer.

(16)

SUB-TOPIC

TREATMENTS FOR DRUG MISUSE

5 questions in this booklet



- 16** Marya has carried out a study to investigate whether a new treatment was effective for people addicted to alcohol. She wanted to see if it would stop them drinking alcohol. She compared the participants who had the new treatment (Condition A) with the participants who received no treatment (Condition B).

Marya recorded the number of alcoholic drinks consumed in a week six months after the treatment ended.

Marya's results are shown in **Table 4**.

Condition A Number of alcoholic drinks in a week for those who received the new treatment	Condition B Number of alcoholic drinks in a week for those who received no treatment
0	3
1	2
3	4
2	5
0	3
0	2
2	1
1	5
1	6
0	4
Range = 3	Range =

Table 4

- (a) Calculate the range of Condition B and complete **Table 4** with your answer.

(1)

SPACE FOR CALCULATIONS



(b) Marya used the mean as a measure of central tendency.

Explain why Marya used the mean rather than the mode in her study.

(2)

(c) Explain **one** improvement Marya could make to her study.

(2)



16 Noah is investigating the influence of a new drug treatment for heroin addicts.

He decided to conduct an experiment on rats. Before Noah conducted his experiment, he had to consider the ethics of using rats to study drug treatments.

(a) Describe the ethical issues that Noah would have had to consider when conducting his experiment.

(3)

(b) Later, Noah carried out an experiment on the effects of the new drug treatment for human heroin addicts using one human heroin addict.

He compared the behaviour of the heroin addict before they had the new drug treatment and after they had the new drug treatment.

Identify the experimental/research design Noah used in the experiment.

(1)



(c) For his experiment Noah gathered qualitative and quantitative data.

Explain **one** reason why qualitative data may be better than quantitative data when researching drug treatments.

(2)

(d) Explain **one** weakness of Noah's investigation using the human heroin addict.

(2)

16 Evaluate **one** treatment for nicotine addiction, **other than** aversion therapy.

(8)



18 Mr Leeming works at a local doctor's surgery. One of his responsibilities is to reduce the number of people in the local area who are addicted to nicotine. In order to do this, he offers help and advice to those addicted to nicotine as well as treatments.

Mr Leeming has recently hired a therapist who is qualified to administer aversion therapy, and he has decided to offer this to a small group of people who are addicted to nicotine to see if it is effective.

Evaluate aversion therapy in relation to the small group of nicotine addicts.

You must make reference to the context in your answer.

(16)



18 Mrs Smythe works at a local doctor's surgery as a community nurse. One of her responsibilities is to reduce the number of people in the local area who are addicted to nicotine. In order to do this, she offers help and advice to those addicted to nicotine as well as treatments. She has also set up a support group for the nicotine addicts.

Mrs Smythe has recently hired a therapist who is qualified to administer aversion therapy. She has decided to offer this to a small group of people who are addicted to nicotine. To see if the aversion therapy is effective Mrs Smythe will monitor the nicotine use of the group over a six-month period.

Evaluate aversion therapy as it is used for the group of nicotine addicts.

You must make reference to the context in your answer.

(16)

SUB-TOPIC

ANTI-DRUG CAMPAIGNS AND HEALTH PROMOTION

4 questions in this booklet



ANSWER ALL QUESTIONS

15 Benito carried out some research into the effects of an advertising campaign about healthy living. He recorded the number of times people exercised each week. The people who had viewed the campaign had a mean score of 7.9 exercise sessions. The people who had not viewed the campaign had a mean score of 3.4 exercise sessions.

(a) (i) State which statistical test Benito would use to analyse his data.

(1)

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(ii) State **three** reasons why Benito would use the statistical test you identified in (i).

(3)

1

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2

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3

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(b) Benito used a random sample.

Describe how he would have selected his sample.

(2)

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- 15** Saqlain investigated people's attitudes towards a new anti-drugs campaign. He gathered his participants from his village using a volunteer sampling technique.

Saqlain showed his participants a video of a new anti-drugs campaign. He showed two different groups of participants a different variation of the video. In condition A, he showed the participants a video including fear provoking messages, and in condition B, the video was changed to include factual information only.

- (a) Describe how Saqlain may have gathered his participants using a volunteer sampling technique.

(2)

- (b) Explain **one** weakness of Saqlain using a volunteer sampling technique for his investigation.

(2)

- (c) Saqlain used an independent groups design in his investigation.

Explain **one** strength of Saqlain using an independent groups design.

(2)



15 Rose is a health psychologist. She has been asked to create an anti-drugs campaign targeted at young adults. The anti-drugs campaign aims to prevent young adults misusing legal and illegal drugs. Rose wants her campaign to reach as many young adults as possible, and for it to offer memorable information.

(a) Describe how Rose could carry out her anti-drugs campaign.

(4)

(b) Rose wanted to see whether her anti-drugs campaign was effective. She collected quantitative and qualitative data from her target population.

Describe how Rose could analyse her data to see if her anti-drugs campaign was effective.

(3)

17 George is a health psychologist. He has been asked to create an anti-drugs campaign. The campaign is to be aimed at teenagers as there has been an increase in illegal drug use in the area.

George plans to use a social media celebrity, who is a recovered addict, as part of his campaign. He intends to ask the celebrity to talk about the highs and the lows of being addicted. George also plans to show graphic images of what drugs can do to the body and use statistics about the long-term effects of drugs.

Discuss the psychological strategies behind George's anti-drugs campaign.

You must make reference to the context in your answer.

(8)



SUB-TOPIC

METHODS AND STUDIES IN HEALTH PSYCHOLOGY

10 questions in this booklet



ANSWER ALL QUESTIONS.

- 15** Jason carried out a study on attitudes towards drugs, comparing the attitudes of teenagers (Condition 1) and the attitudes of those aged over 50 (Condition 2).

Jason used a ranked scale to gather his data, where 0 showed a negative attitude towards drugs and 5 showed a positive attitude towards drugs.

Jason's results are in **Table 4**.

Condition 1 Attitudes of teenagers towards drugs	Condition 2 Attitudes of the over 50s towards drugs
5	0
4	1
4	1
3	2
2	4
5	3
1	0
2	0
3	1
4	1
4	2
2	1
Total = 39	Total = 16
Mean =	Mean =

Table 4

- (a) Calculate the mean score for Condition 1 and the mean score for Condition 2 and complete **Table 4** with your answers to **two** decimal places.

(2)

SPACE FOR CALCULATIONS

- (b) Describe how Jason could use the findings of his study to support a learning explanation of drug addiction.

(2)

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15 You will have learned about one of the following contemporary studies in health psychology.

- Mundt et al.(2012)
- Dixit et al. (2012)
- Pengpid et al. (2012)

(a) State **two** findings of your chosen contemporary study.

(2)

Chosen study

1

2

(b) Explain **one** strength of your chosen contemporary study in terms of reliability.

(2)



15 During your studies in health psychology you will have carried out a practical investigation.

(a) State the aim of your practical investigation in health psychology.

(1)

(b) Describe the procedure of your practical investigation in health psychology.

(4)



14 In your studies of health psychology, you will have conducted a practical investigation.

(a) Describe the results of your practical investigation in health psychology.

(2)

(b) Explain **one** strength of your practical investigation in health psychology.

(2)

(c) Explain **one** improvement you could make to your practical investigation in health psychology.

(2)



14 In your studies of health psychology you will have learned about the classic study by Olds and Milner (1954).

(a) Describe the results from Olds and Milner (1954).

(2)

(b) Explain **one** strength and **one** weakness of the study by Olds and Milner (1954).

(4)

Strength

Weakness

15 Grace investigated the effect of alcohol on speech. The participants were split into two conditions:

- Condition A: The participants drank 3 pints of beer
- Condition B: The participants drank no beer.

Grace then asked her participants to read a page of a book out loud. She recorded the number of times each participant slurred a word.

The results for the participants who drank 3 pints of beer are shown in **Table 4**.

Participant	Number of words slurred whilst reading out loud
A	5
B	7
C	2
D	8
E	5

Table 4

- (a) (i) Calculate the standard deviation for the number of words slurred by the participants who drank 3 pints of beer using the data in **Table 4**. Show your working out and give your answer to **one** decimal place.

(4)

SPACE FOR CALCULATIONS

Standard deviation:

- (ii) The standard deviation for the number of slurred words from the participants who drank no beer was 2.1.

Using your answer from 15(a)(i), explain what the two standard deviations tell us about the data from Grace's investigation.

(2)

17 Evaluate the classic study by Olds and Milner (1954).

(8)



17 Jekaterina takes an illegal drug. At first, she only took the drug a couple of times a week, but she now takes the drug daily. She finds that she needs to take twice as much of the illegal drug compared to when she first took it in order to feel the same effects.

When she does not take the drug Jekaterina often gets severe headaches. She now thinks that she cannot cope with her stressful job if she does not take the illegal drug.

Discuss issues around drug taking with reference to Jekaterina's drug use.

You must make reference to the context in your answer.

(8)

18 You will have learnt about a key question from health psychology that is relevant to today's society.

Assess the key question from health psychology.

(16)

18 Ian carries out animal laboratory experiments to study drugs. He gave drugs to 35 monkeys and kept the monkeys in isolation during the experiment. After the experiment, Ian reintroduced the monkeys to their social group, but they were rejected by the other monkeys.

To what extent are animal laboratory experiments appropriate to study drugs?
You must make reference to the context in your answer.

(16)

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MARK SCHEMES

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Question Number	Answer	Mark
16	AO1 (3 marks) Up to three marks for a description of one learning explanation For example: • People who take heroin would receive a positive reinforcement in the form of the euphoria they feel after taking heroin (1). Heroin also gives a negative reinforcement as it can take away physical pain so rewards the user (1). Addicts suffer withdrawal symptoms, such as feeling hot and cold, so take the heroin to remove these withdrawal symptoms which is negative reinforcement (1). Look for other reasonable marking points.	(3)

Question Number	Answer	Mark
15 (a)	AO1 (2 marks) Credit up to two marks for a description of one treatment. For example: When using aversion therapy alcohol is paired with Antabuse that stops the oxidising of the acetaldehyde so a person will feel sick after drinking alcohol (1). The person then associates alcohol with the reflexive action of being sick so no longer drinks alcohol (1). Look for other reasonable marking points.	(2)

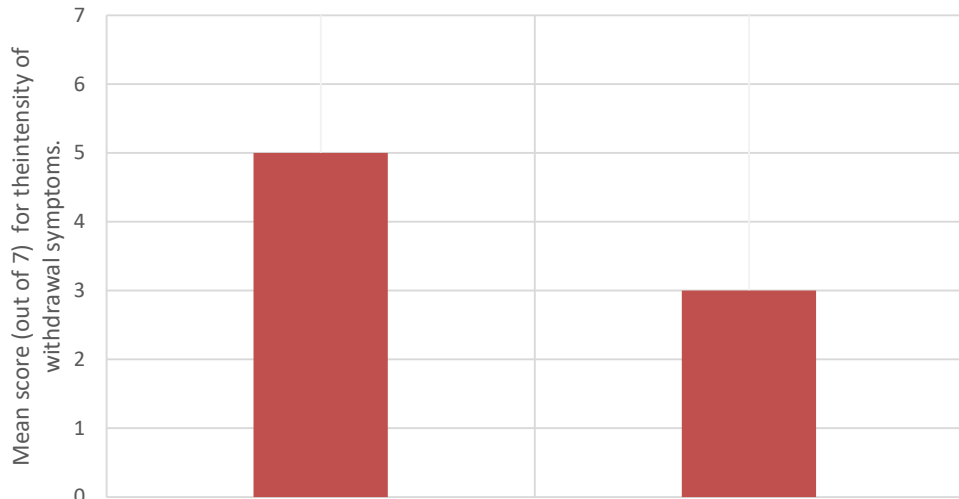
Question Number	Answer	Mark
15 (b)	AO1 (1 mark), AO3 (1 mark) One mark for identification of a strength (AO1) One mark for justification of the strength (AO3). For example: Howard and Howard (2009) showed the use of aversion therapy is effective for treating alcohol addiction so the therapy has validity (1) as they found that patients who had pharmacological aversion therapy were more confident that they would not drink in high-risk situations (1) Look for other reasonable marking points.	(2)

Question Number	Indicative Content	Mark
16a	AO1 (4 marks) Up to four marks for description. For example; Drugs affect the neurotransmitters in the brain, e.g. heroin mimics endorphins (1). This can lead to the brain readjusting the levels of neurotransmitters is naturally produces (1). When the brain does not receive any of the drug it may have reduce levels of a specific neurotransmitter leading to withdrawal symptoms (1). It also leads to tolerance so a person has to take more of the drug in order to get the initial effects (1). Look for other reasonable marking points.	(4)

Question Number	Indicative Content	Mark
16b	AO1 (1 mark) AO3 (1 mark) Up to one mark for identification of weakness. (AO1) Up to one mark for justification/exemplification of weakness. (AO2) For example neurotransmitters; The neurotransmitter explanation does not explain why someone starts to take drugs in the first place (1) as it looks at the effects on neurotransmitters once the drug has been taken (1) Look for other reasonable marking points.	(2)

Question Number	Indicative Content
	AO1 (4 marks), AO3 (4 marks)

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

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

Question Number	Answer	Mark
16 (c)	A03 (3 marks) 1 mark per explicit comparison. The answer must include at least one similarity and one difference otherwise max 2 marks. For example: 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). Look for other reasonable marking points.	(3)

17

AO1

- Methadone is a synthetic opiate that is used to treat heroin addiction.
- Heroin addicts take it once a day, and it stops the withdrawal symptoms of heroin.
- It is usually taken at the pharmacy to start with in a liquid form.
- Once the addict has stabilised on methadone they may be trusted to take the methadone home with them

AO3

- Hedrich (2012) found that prisoners who started a methadone programme in prison and had community support when released were more likely to remain drug free once released.
- Methadone is taken orally so avoids the health hazards, such as hepatitis, that come from using dirty needles.
- However, addicts may become dependent on the methadone, so they could just replace one addiction with another.
- In conclusion, methadone has many advantages when treating heroin addicts, but must be carefully monitored, otherwise addicts will stay on it which will cost the NHS a lot of money.

Look for other reasonable marking points.

Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation / conclusion in their answer.

Level	Mark	Descriptor
	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
16a	AO2 (4 marks) Up to four marks for description of a treatment Helen could use on those addicted to alcohol. For example; aversion therapy. Helen would give the addicts an emetic drug/disulfiram which stops the breakdown of acetaldehyde in their bodies (1). Helen would give her patient an alcoholic drink, such as wine, and the patient would be sick/feels sick due to the emetic drug (1). The patient eventually associates being sick with alcohol so avoids drinking alcohol (1). Helen gives the addict non-alcoholic drinks when the addict does not feel sick to stop generalisation of the response (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(4)

Question Number	Indicative Content	Mark
16b	AO1 (2 marks), AO3 (2 marks) One mark for identification of each strength/weakness up to a maximum of two marks (AO1) One mark for justification of each strength/weakness up to a maximum of two marks (AO3) For example; aversion therapy - There are studies that show that aversion therapy is an effective treatment for alcohol addiction (1). E.g. Howard (2001) found that after aversion therapy patients were more confident that they could resist alcohol (1). - Aversion therapy does not look at the underlying reasons why someone abuses alcohol (1), so they may start drinking alcohol again if these issues are not addressed (1). Look for other reasonable marking points.	(4)

Question Number	Indicative Content
	AO1 (4 marks), AO2 (4 marks)



17	AO1 - Alcohol is a depressant drug. - Alcohol inhibits serotonin in the brain. - Alcohol also increases the amount of GABA which is an inhibitory neurotransmitter. - The changes to the neurotransmitters can cause down regulation as the brain adjusts to the levels of serotonin and dopamine from the alcohol. AO2 - Alcohol decreases serotonin in Rachel's brain and so causes her to be depressed meaning she does not feel like she can go to work. - Alcohol also increases the amount of GABA in Rachel's brain, increasing the depressant effect on Rachel and meaning she needs an alcoholic drink in the morning. - Because Rachel's parents were also treated for addiction it could be due to genetics that Rachel is addicted to alcohol. - Due to down regulation Rachel will experience withdrawal symptoms if she does not have a drink leading to her drinking excessive amounts of alcohol to feel normal. Look for other reasonable marking points.
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Level	Mark	Descriptor
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
17	AO1 (4 marks), AO2 (4 marks) AO1 E.g. Classical conditioning - 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. E.g. Operant conditioning. - 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. E.g. Social learning theory. - 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 AO2 E.g. Classical conditioning. - 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)



	- 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. E.g. Operant conditioning. - 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. E.g. Social learning theory. - 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. Look for other reasonable marking points.	
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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
17	AO1 (4 marks), AO2 (4 marks) AO1 • Children will observe and imitate behaviours from role models such as their parents. • Social identity theory says that when we identify with a group we take on their norms and values. • Behaviours that are reinforced are more likely to be repeated in order to receive the reinforcement again. • According to classical conditioning anything associated with drugs can lead to a reflexive response so more drugs are needed to achieve the same effect. AO2 • As Peter saw his mother drinking throughout his childhood he will imitate this behaviour and become addicted to alcohol. • In order to identify with his group of friends Peter has taken on the norm of drinking alcohol. • Peter was positively reinforced by feeling more confident when at parties so this has led to his alcohol addiction. • Peter has associated going to parties with alcohol so he now feels he needs to drink more alcohol at parties to have the same effect.	(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	Answer	Mark
16 (a)	A02 (1 mark), A03 (1 mark) One mark for identification of a weakness in relation to the scenario (A02) One mark for justification of the weakness (A03). For example: Alicia only collects numerical data in a score from 1 to 10 in terms of the likelihood of the drug addict or non-addict committing the crime so her data lacks detail (1), therefore she does not get a full understanding of why the participants thought the drug addict or non-addict may or may not have committed the crime (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark																																																															
16 (b)	A02 (4 marks) <table><tr><th>Participant</th><th>Condition A: Likelihood of non-addict committing the crime</th><th>Condition B: Likelihood of drug addict committing the crime</th><th>Difference</th><th>Rank</th><th>Rank if positive</th><th>Rank if negative</th></tr><tr><td>A</td><td>1</td><td>5</td><td>-4</td><td>4</td><td></td><td>4</td></tr><tr><td>B</td><td>3</td><td>3</td><td>0</td><td></td><td></td><td></td></tr><tr><td>C</td><td>2</td><td>7</td><td>-5</td><td>5.5</td><td></td><td>5.5</td></tr><tr><td>D</td><td>7</td><td>8</td><td>-1</td><td>1</td><td></td><td>1</td></tr><tr><td>E</td><td>5</td><td>10</td><td>-5</td><td>5.5</td><td></td><td>5.5</td></tr><tr><td>F</td><td>4</td><td>2</td><td>2</td><td>2</td><td>2</td><td></td></tr><tr><td>G</td><td>3</td><td>6</td><td>-3</td><td>3</td><td></td><td>3</td></tr><tr><td colspan="5">Total:</td><td>2</td><td>19</td></tr></table> One mark for accurate completion of the difference column. One mark for accurate completion of the ranked difference column. On mark for accurate calculation of sum of both ranks. One mark for the correct value of T=2	Participant	Condition A: Likelihood of non-addict committing the crime	Condition B: Likelihood of drug addict committing the crime	Difference	Rank	Rank if positive	Rank if negative	A	1	5	-4	4		4	B	3	3	0				C	2	7	-5	5.5		5.5	D	7	8	-1	1		1	E	5	10	-5	5.5		5.5	F	4	2	2	2	2		G	3	6	-3	3		3	Total:					2	19	(4)
Participant	Condition A: Likelihood of non-addict committing the crime	Condition B: Likelihood of drug addict committing the crime	Difference	Rank	Rank if positive	Rank if negative																																																											
A	1	5	-4	4		4																																																											
B	3	3	0																																																														
C	2	7	-5	5.5		5.5																																																											
D	7	8	-1	1		1																																																											
E	5	10	-5	5.5		5.5																																																											
F	4	2	2	2	2																																																												
G	3	6	-3	3		3																																																											
Total:					2	19																																																											

Question Number	Answer	Mark
16 (c)	AO2 (1 mark), AO3 (1 mark) One mark for identification of an improvement in relation to the scenario (AO2). One mark for justification of the improvement (AO3). For example: Alicia could have used an independent groups design so the participants were only exposed to either the crime scenario with the addict or non-addict (1), which would increase the validity of the findings regarding the judgements of likelihood as they would not be affected by prior exposure to the other scenario (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Question Number	Indicative content	Mark
16	AO1 (4 marks), AO3 (4 marks) AO1 • Heroin binds to mu-opioid receptors in the brain and activates them mimicking the body's natural opioids. • As the mu-opioid receptors have been activated it causes the addict to feel less pain, both physical and emotional. • If the mu-opioid receptors in the brain's reward centre are activated this leads to an increase in dopamine, leading to the high from heroin. • The brain lowers its production of natural mu-opioids due to the heroin, so the addict needs to take more heroin in order to feel normal so leading to tolerance. AO3 • Wei et al. (2018) found that heroin increased the activation of dopamine receptors in the VTA and the activation of serotonin receptors for up to an hour after the mice took the heroin showing it is a credible explanation of heroin addiction. • The neurotransmitter explanation of heroin addiction does not explain why people first take heroin so it is not a complete theory of addiction. • The fact that drugs such as methadone, which act in a similar way to heroin by activating the opioid receptors, are successfully used to reduce cravings for heroin indicates the neurotransmitter explanation has credibility. • The neurotransmitter explanation is reductionist as it ignores environmental factors, such as the influence of family and peers, so it may not be a complete explanation of heroin addiction. 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)

Question Number	Answer	Mark
15 (a)	AO2 (2 marks), AO3 (2 marks) One mark for identification of each strength / weakness in relation to the scenario (AO2). One mark for justification of each strength / weakness (AO3). For example: Strength - As Alexei used an opportunity sample it would not take him a long time to gather his participants for his study on the effects of fear tactics on drug taking (1), as the participants were readily available as they were at a local clinic for alcoholics (1). Weakness - The participants that Alexei used for the effects of fear tactics on drug taking would have been from one area so they are not representative of all drug addicts (1), as drug addicts from a different area may have a different response to high fear tactics and this may affect Alexei's results (1). Answers must relate to the scenario. Look for other reasonable marking points. Generic answers score 0 marks.	(4)

Question Number	Answer	Mark
15 (b)	A02 (1 mark) One mark for correct calculation of the mean for condition A. • 4	(1)

Question Number	Answer	Mark
15 (c)	A02 (1 mark) One mark for correct calculation of the median for condition B. • 8.	(1)

Question Number	Answer	Mark
15 (d)	A02 (1 mark) One mark for accurate determination of whether the results are significant. For example: • There is a significant difference in the amount of alcohol consumed by addicts in the past week as the calculated value (4.5) is less than the critical value (5) (1). Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
15 (e)	AO2 (1 mark), AO3 (1 mark) One mark for identification of one improvement in relation to the scenario (AO2). One mark for justification of one improvement (AO3). For example: Alexei could have used people who were addicted to other drugs such as heroin as well as alcohol (1), so he could see if high fear tactics had any effect on a range of drugs rather than just alcohol (1). Answers must relate to the scenario. Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Number	Indicative Content	Mark
18	A01 (6 marks), A02 (4 marks), A03 (6 marks) A01 • According to social learning theory we need to observe the process of smoking a cigarette, such as how to inhale. • We are more likely to pay attention to a role model smoking if they are of relevance to us. • Smokers may be vicariously reinforced for smoking, such as appearing more relaxed, so this will increase the possibility of the behaviour being imitated. • People must be able to carry out the behaviour, so they must be able to physically light a cigarette. • The behaviours have to be retained in our memory, so in order to imitate smoking we have to remember how a cigarette is lit. • Once smoking has been tried for the first time people may be motivated to carry on with the behaviour as they are extrinsically motivated by the reaction of other people. A02 • Donald would have observed his friends inhaling cigarettes and then blowing the smoke out. • Donald will pay attention to his father smoking as he is of the same sex as Donald. • Donald may see other friends being praised for smoking and so is motivated to smoke in order to receive praise. • Donald may then be extrinsically motivated to carry on with smoking as his friends see him as cool and part of the gang. A03 • Bandura, Ross and Ross (1961) found that children will copy the aggressive behaviour of adult role models, so this may also explain why people start smoking. • Bandura, Ross and Ross (1961) used children aged three to five years old so it may not explain why people become addicted to nicotine as they tend to be older when they start smoking. • Ennett et al. (1994) found that having friends who did or did not smoke led to individuals having the same behaviour, so suggesting social learning theory can explain addiction to nicotine. • Social learning theory ignores biological factors such as the mode of action of nicotine so cannot be considered a full explanation of addiction to nicotine. • Social learning theory can be seen as a better explanation for addiction to nicotine than operant conditioning, as it explains why people carry on smoking even though they often find their first experience unpleasant. • One reason groups of friends all smoke could be that people choose to be friends with other smokers rather than because they are vicariously reinforced by their friends.	(16)

	Look for other reasonable marking points.	
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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 evaluation/conclusion in their answer. Application to the context is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1-4 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5-8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	9-12 marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	13-16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Indicative Content	Mark
18	A01 (6 marks), A02 (4 marks), A03 (6 marks) A01 - 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. A02 - 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. A03 - 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)

	withdrawn from nicotine, so neurotransmitters can effectively explain withdrawal symptoms experienced by smokers. • 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. Look for other reasonable marking points.	
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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	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) A judgement/decision may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5–8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) 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)
Level 3	9–12 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) 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)
Level 4	13–16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical argument, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments and presents a balanced response, leading to a balanced judgement/decision. (AO3)



Question Number	Indicative content	Mark
18	A01 (6 marks), A02 (4 marks), A03 (6 marks) A01 • Operant conditioning states that when people, such as heroin addicts are reinforced, they will repeat the behaviour e.g., taking heroin. • Positive reinforcement is when taking heroin gives the addict something they desire, such as feeling good. • Negative reinforcement is when something undesirable is avoided or removed after taking the heroin. • Positive reinforcement may explain why addicts take heroin again after the first time, as they associate taking heroin with a desirable outcome. • Negative reinforcement explains why they continue taking it once they are dependent on heroin as it removes withdrawal symptoms. • A primary reinforcer satisfies a basic need, in heroin addicts it may be that taking heroin allows them to fit in with their groups of friends. A02 • The addicts that Mark treats have been positively reinforced for taking heroin as they state that they enjoyed getting high. • Negative reinforcement may be a factor in why the heroin addicts continue to take heroin as they say they take it to take away the pain. • The heroin addicts are receiving a primary reinforcement as they have friends who also take it, so they are part of the group which satisfies the desire to belong. • The heroin addicts may be addicted due to social learning theory rather than operant conditioning as they knew people who took it, who may be their role models so they copied the behaviour. A03 • The principles of operant conditioning can be applied as a therapy, if not taking the heroin is rewarded in a way that is meaningful for the addict it can help them recover. • Operant conditioning does not explain why heroin addicts continue taking heroin if they have a bad experience, such as an overdose, as this should act as a punishment.	(16)



	• Olds and Milner (1954) found that positive reinforcement did lead to the rats pressing a lever to get the reinforcement of brain stimulation, so this may explain heroin addiction as well. • Mundt et al. (2012) found that adolescent alcoholics were influenced by their friends in their alcohol uptake, so it may be that heroin addicts start taking heroin due to imitating role models and not operant conditioning. • Operant conditioning for heroin addiction takes into account the biological processes of dependency and withdrawal symptoms so it focuses on nature as well as nurture. • Operant conditioning cannot explain why people first try heroin, as there is no associated reinforcement, but social learning theory says that they first take it in imitation of their role models.	
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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 evaluation/conclusion in their answer. Application to the context is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1-4 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5-8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	9-12 marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning, leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	13-16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)



Question Number	Indicative content	Mark
17	A01 (6 marks), A02 (4 marks), A03 (6 marks) A01 • Social learning theory states that people become addicted because they observe their role models using drugs, such as alcohol. • People pay attention to their role models drinking alcohol due to their role models having certain characteristics such as power. • Once drinking alcohol has been observed the actions are placed in the memory so they can be imitated at an appropriate time. • If the role model is reinforced for drinking alcohol, then the behaviour is more likely to be imitated. • If the person doing the imitating is reinforced once they have imitated the drinking of alcohol then they are more likely to drink alcohol again. • Intrinsic motivation, such as feeling happy after drinking alcohol, can motivate the person to repeat the behaviour and drink more alcohol. A02 • Maxyme will have observed his mother drinking alcohol, such as what type of alcohol she drank, and whether she drank out of a bottle and he will imitate that behaviour. • Maxyme's mother may act as a role model for Maxyme as she has power over him, which can explain why he started to drink alcohol. • Maxyme's friends may have been positively reinforced when they drank alcohol in the park, such as being seen as cool by other people. • Maxyme is extrinsically motivated to carry on drinking as he is reinforced when his friends say he is more fun after he has had a drink. A03 • Bandura, Ross and Ross (1961) found that children will imitate the aggressive actions of an adult towards a Bobo doll, so social learning theory is a credible explanation of addiction to alcohol. • Studies such as Bandura, Ross and Ross (1961) studied social learning theory in children, so it may not be an effective explanation of addiction in adults.	(16)

	• Social learning theory is a more complete explanation of addiction than operant conditioning because it focuses on cognitive processes as well as reinforcement. • Social learning theory focuses on nurture and ignores nature, such as genes, when explaining addiction so it is not a complete explanation of why people become addicted to alcohol. • Social learning theory can better explain why people start to drink alcohol compared to classical conditioning so it is a more effective explanation of addiction. • Mundt et al. (2012) found that adolescents chose friends with similar rates of drinking alcohol, rather than being influenced by friends to drink alcohol, so social learning theory may not explain alcohol addiction. Look for other reasonable marking points.	
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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	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) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	5–8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) 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	9–12 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning, leading to 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	13–16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) 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
17	AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) AO1 • Aversion therapy aims to teach the alcohol addict to learn a new reflexive response to alcohol so they will no longer want to drink it. • Aversion therapy is based on classical conditioning and pairs a stimulus which causes an unpleasant reaction to alcohol. • The alcohol addict will be given a drug such as disulfiram just before they drink any alcohol, to stop the body breaking down acetaldehyde quickly. • When the alcohol addict drinks alcohol, they will experience unpleasant symptoms such as feeling sick because the acetaldehyde is not broken down. • After several pairings the alcohol addict will associate feeling sick with alcohol and so will no longer drink alcohol to avoid feeling sick. • The alcohol addict must be given non-alcoholic drinks when not feeling sick so that their response does not generalise to all drinks. AO2 • Humphrey has a reflexive response of pleasure to beer and vodka so aversion therapy will aim to change this response to an unpleasant one. • Humphrey will take disulfiram just before having some beer so he will start to feel sick after he has drunk a few beers so he will not drink out with his friends. • After a few pairings of beer and vodka with feeling sick Humphrey will start to avoid alcohol, so his friends will be more likely to go out with him again. • The therapist may give Humphrey other drinks such as tea when he does not feel sick so that he will not have issues from dehydration so he will not need to go to hospital again. AO3 • Elkins et al. (2017) found that fMRI scans showed a reduction in craving related brain activity after patients had undergone aversion therapy for alcohol showing it has a biological basis.	16



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|--|---|--|
| | <ul style="list-style-type: none">• A criticism is that the aversion therapy is trying to socially control those with alcohol addiction, and tell them their addiction is not acceptable and they should change to fit in with society.• Aversion therapy is relatively quick as it only takes a few hours, so may be a better therapy than those which take longer such as cognitive behavioural therapy.• Aversion therapy may not last long term as after some time the association between alcohol and feeling sick may wear off and the person will start to drink again and realise they don't feel sick.• Smith and Frawley (1990) found that 71.3% of those who had undergone aversion therapy still abstained from alcohol 12 months later showing it is an effective treatment.• Aversion therapy does not address the reasons behind the alcohol addiction so it may not be effective in the long term as the long-term causes may still be there. | |
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Look for other reasonable marking points.

Number	Answer	Mark				
16 (a)	AO2 (1 mark)	(1)				
	<table><tr><th>Condition A</th><th>Condition B</th></tr><tr><td>Number of alcoholic drinks in a week for those who received the new treatment</td><td>Number of alcoholic drinks in a week for those who received no treatment</td></tr></table>		Condition A	Condition B	Number of alcoholic drinks in a week for those who received the new treatment	Number of alcoholic drinks in a week for those who received no treatment
	Condition A		Condition B			
	Number of alcoholic drinks in a week for those who received the new treatment		Number of alcoholic drinks in a week for those who received no treatment			
	0		3			
	1		2			
	3		4			
	2		5			
	0		3			
	0		2			
	2		1			
	1		5			
	1		6			
	0		4			
Range = 3	Range = 5					
One mark for Range = 5						

Question Number	Answer	Mark
16 (b)	A02 (1 mark), A03 (1 mark) One mark for identification of why the mean is better for Marya's data (A02) One mark for justification of why the mean is better (A03) For example: The mean is better as it uses all the scores for the number of alcoholic drinks each participant had (1) so it is a more meaningful representation than the mode which would only use the most frequent number concerning the number of alcoholic drinks participants had (1). Answers must relate to the scenario Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
16 (c)	A02 (1 mark), A03 (1 mark) One mark for identification of improvement to Marya's study (A02). One mark for justification of improvement (A03). For example; Marya could gather her data after a few years rather than after six months (1), this would allow her to see if the new therapy had a long term effect on the amount of alcohol the participants drank (1). Answers must relate to the scenario. Look for other reasonable marking points.	(2)

Question	Indicative Content	Mark
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Question Number	Answer	Mark
16 (a)	A02 (3 marks) Up to three marks for a description of ethical issues of using rats in relation to the scenario. For example: Noah should only use the smallest number of rats he needs to gather his data about the effects of the new drug therapy for heroin addicts, so that no more rats than necessary suffer (1). Noah should ensure that if the new drug therapy for heroin addicts has an adverse effect on the rats that they are humanely killed if they cannot recover (1). Noah would have to make sure the housing and food for the rats is suitable when he is not using a new drug treatment (1). Look for other reasonable marking points. Answers must relate to the scenario Generic answers score 0 marks.	(3)

Question Number	Answer	Mark
16 (b)	A02 (1 mark) One mark for identification of the experimental/research design in relation to the scenario. For example: Noah used a repeated measures design in his experiment on the effectiveness of the new drug treatment (1). Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
16 (c)	AO1 (1 mark), AO3 (1 mark) One mark for identification of one reason (AO1). One mark for justification of the reason (AO3). For example: Qualitative data gathers more detailed information such as reasons for drug taking compared to quantitative data (1), as qualitative data allows drug addicts to explain the underlying reasons about why they take drugs, rather than being restricted in their responses (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
16 (d)	AO2 (1 mark), AO3 (1 mark) One mark for identification of one weakness in relation to the scenario (AO2). One mark for justification of the weakness (AO3). For example: Noah's study may lack validity as he only studied the effects of the new drug treatment on one heroin addict from one addiction centre (1), therefore the effects of the new drug treatment may be different for heroin addicts at a different stage of addiction or poly drug users (1). Look for other reasonable marking points. Answers must relate to the scenario Generic answers score 0 marks.	(2)

Question Number	Indicative content	Mark
16	AO1 (4 marks), AO3 (4 marks) AO1 - Nicotine replacement therapy releases nicotine into the blood at a lower rate than cigarettes where it travels to nicotine receptors in the brain. - Nicotine replacement therapy uses nicotine gum, patches or tablets to help those with nicotine addiction. - As the person is still getting nicotine it helps control the withdrawal symptoms such as feeling irritable and having trouble sleeping. - The amount of nicotine in the replacement therapy is gradually reduced until eventually the person is weaned off needing nicotine. AO3 - Hajek et al. (2019) found that e cigarettes were more effective at helping people stop smoking cigarettes than nicotine replacement therapy with 18% not smoking a year later compared to 9.9%. - Nicotine replacement therapy does help control withdrawal symptoms so it may be useful in allowing patients to access other therapies to help them stop smoking, such as hypnosis. - Alpert et al. (2012) found that about one third of people who used nicotine replacement therapy had relapsed and started smoking again and it was no more effective in stopping relapse than those who did not have nicotine replacements. - West and Zhou (2007) found the use of nicotine replacement therapy in smokers aged 35-65 years was associated with improved long term abstinence rates from smoking. 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
18	AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) AO1 • Aversion therapy is based on classical conditioning and aims to pair nicotine with an unpleasant response. • Those addicted to nicotine are asked to rapid smoke, inhaling a cigarette every few seconds for a period of time. • Smoking rapidly causes a person to feel sick. • The addict associates the feeling sick with the inhaling of the cigarette. • After several pairings the addict will feel sick when they see a cigarette and so avoid smoking. • The addicts may be given silver acetate which leaves an unpleasant taste when a cigarette is smoked. AO2 • The therapist will give the small group of patients a packet of cigarettes and ask them to rapidly smoke the cigarettes. • The small group of nicotine addicts will be made to carry on smoking even if they feel sick. • After a few sessions with the therapist the small group of nicotine addicts will feel sick when they see a cigarette. • When the Mr Leeming's patients associate cigarettes with feeling sick they will avoid smoking so that they will not feel sick. AO3 • Danaher (1977) used rapid smoking to treat smokers and found that it was effective for some smokers such as non-married couples but it wasn't effective for everyone. • Russell et al. (1976) found that using electric shocks as an aversive stimulus led to 65% of the smokers stopping smoking. • Aversion therapy does not address the psychological reasons why nicotine addiction occurred so it may not work long term. • Aversion therapy stops the person craving nicotine so they can then access other therapies to gain insight into the reasons for their addiction. • Nicotine addiction may return after aversion therapy if the patients tries a cigarette and realises they do not feel sick, so it may not be effective long term.	(16)



	Aversion therapy can be a quicker and cheaper treatment than other therapies so nicotine addicts may prefer it.	
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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 evaluation/conclusion in their answer. Application to the context is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1-4 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5-8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	9-12 marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning, leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	13-16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)



Question Number	Indicative content	Mark
18	AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) AO1 • Aversion therapy is based on classical conditioning and aims to pair nicotine with an unpleasant response. • Those addicted to nicotine are asked to rapid smoke, inhaling the smoke from a cigarette every few seconds for a period of time. • Smoking rapidly, causes a person to feel sick. • The addict associates the feeling sick to the inhaling of the cigarette. • After several pairings the addict will feel sick when they see a cigarette and so avoid smoking. • The addicts may be given silver acetate which leaves an unpleasant taste when a cigarette is smoked. AO2 • The therapist will give the small group of addicts a packet of cigarettes and ask them to rapidly smoke the cigarettes. • The small groups of nicotine addicts will carry on smoking even if they feel sick. • After a few sessions with the therapist the small group of nicotine addicts will feel sick when they see a cigarette. • When Mrs Smythe's patients associate cigarettes with feeling sick they will avoid smoking so that they will not feel sick. AO3 • Danaher (1977) studied rapid smoking and found that it was effective for some smokers, such as non-married couples, but it was not effective for everyone. • Russell et al. (1976) found that using electric shocks as an aversive stimulus led to 61% of the smokers stopping smoking. • Aversion therapy does not address the psychological reasons why nicotine addiction occurred so it may not work long term so may not be effective. • Aversion therapy stops the person craving nicotine, so they can then access other therapies to gain insight into the reasons for their addiction. • Nicotine addiction may return after aversion therapy if the patient tries a cigarette and	(16)



	realises they do not feel sick, so it may not be effective long term. • Aversion therapy can be a quicker and cheaper treatment than other therapies so nicotine addicts may prefer it. Look for other reasonable marking points.	
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Level	Mark	Descriptor
A01 (6 marks), A02 (4 marks), A03 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer. Application to the context is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1-4 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5-8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	9-12 marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning, leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	13-16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Indicative Content	Mark
15 ai	AO2 (1 mark) 1 mark for the correct statistical test. For example; • Mann Whitney U test (1) Look for other reasonable marking points.	(1)

Question Number	Indicative Content	Mark
15 aii	AO2 (3 marks) Up to 3 marks for correct statement of reasons why Benito used the statistical test identified in (i) For example Mann Whitney U test; • Benito was looking for a test of difference (1). • He used independent groups design (1). • The data he collected was ordinal (1). Look for other reasonable marking points.	(3)

Question Number	Indicative Content	Mark
15 b	AO2 (2 marks) Up to 2 marks for describing how Benito would select his random sample For example; • Benito could put all the names of the Participants/people in a hat (1). He would then pick out names from the hat until he had the correct number of participants (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
15 (a)	AO2 (2 marks) Up to two marks for a description of volunteer sampling in relation to the scenario. For example: • Saqlain could have put a notice up in the village hall asking for participants for his investigation into the new anti-drugs campaign (1). He would have included the dates and a phone number for participants to contact him about taking part in the experiment on the anti-drugs campaign (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
15 (b)	AO2 (1 mark), AO3 (1 mark) One mark for identification of a weakness in relation to the scenario (AO2). One mark for justification of the weakness (AO3). For example: The villagers who volunteered may all already have a negative attitude to drugs (1), which means the results about whether which anti-drugs campaign was more effective may not be representative of the target population so could not be generalised to all people who would watch the campaign (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
15 (c)	AO2 (1 mark), AO3 (1 mark) One mark for identification of a strength in relation to the scenario (AO2). One mark for justification of the strength (AO3). For example: Saqlain used an independent groups design to avoid practice effects as each group only got to see the video with either fear provoking messages or factual information (1), which increases the validity of the results as the participants answers about the campaign would not be affected by their previous exposure to the other campaign video (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Number	Answer	Mark
15 (a)	AO2 (4 marks) Up to four marks for description in relation to the scenario For example: Rose should use a variety of media in order to reach a large number of young adults, including the internet and adverts on the television (1). Rose could use humour and language that is easy to understand so that the young adults are engaged with the campaign (1). Rose could add helpline numbers or website addresses so the young adults who want more information know where to look for it (1). Rose could use the Yale model of communication and have a credible person leading the campaign such as a celebrity who has overcome drugs (1). Answers must relate to the scenario. Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
15 (b)	AO2 (3 marks) Up to three marks for description of analysis in relation to scenario. For example: Rose could conduct a thematic analysis on the qualitative data by looking for common themes in the young adults' comments on the anti-drugs campaign (1). With the quantitative data Rose could create a bar chart showing the drug use of the young adults before and after her anti-drugs campaign (1). Rose could use a Wilcoxon test to see whether there was a statistically significant difference in drug use before and after the anti-drugs campaign (1). Answers must relate to the scenario. Look for other reasonable marking points.	(3)

Question Number	Indicative content	Mark
17	AO1 (4 marks), AO2 (4 marks) AO1 • The use of role models in campaigns means the target audience should identify with them so observe and imitate their behaviour. • The person who is delivering the message should be a credible source in order to change people's attitudes to drugs. • The Hovland-Yale model of communication campaigns that give both sides of the argument are more likely to be effective. • Fear arousal within a drugs campaign can be used to change people's behaviour as they may feel that they may be negatively affected by the drug. AO2 • The use of a social media celebrity means that the celebrity should be a role model for teenagers, so they are more likely to imitate not taking drugs. • As the celebrity has previously taken drugs they may been seen as a credible source, as they have experienced the highs and lows of drug taking. • George's drug campaign should be more effective according to the Hovland-Yale model of communication as the celebrity is going to talk about the positives of drug taking as well as the negatives. • George should ensure his graphics are not too fear arousing, as high fear tactics have been shown to lead to people ignoring the message.	(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
15a	AO2 (2 marks)	
	Attitudes of teenagers towards drugs.	Attitudes of the over 50s towards drugs.
	5	0
	4	1
	4	1
	3	2
	2	4
	5	3
	1	0
	2	0
	3	1
	4	1
	4	2
	2	1
	Total = 39	Total = 16
	Mean = 3.25	Mean = 1.33
One mark for each correct mean up to 2 decimal places (see table above).		

Question Number	Indicative Content	Mark
15(b)	AO2 (2 marks)	(2)
	Up to two marks for description of how results could support a learning explanation of drug addiction. For example Jason's results could support the operant conditioning explanation of drug addiction as teenagers may get more positive reinforcement for taking drugs through acceptance from their peers (1), and Jason's results showed that teenagers have a more positive attitude to drugs than the over 50s (1). Answer must refer to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	

Question Number	Answer	Mark
15 (a)	AO1 (2 marks) One mark for statement of each finding of their chosen contemporary study. For example: Mundt et al. (2012): Finding one • They found that 13% of the participants who dropped out between wave 1 and wave 2 were weekly alcohol users (1). Finding two • The frequency that parents drank alcohol was not significantly associated with alcohol consumption in adolescence (1). Dixit et al. (2012): Finding one • 86.6% of the participants denied ever having an alcoholic drink, with 5.07% saying they currently drunk alcohol (1). Finding two • Participants that were considered well paid professionals were less likely to use alcohol compared to unemployed participants (1). Pengpid et al. (2012): Finding one • Both the treatment group and the control group had a significant reduction in heavy drinking scores over time (1). Finding two • Harmful alcohol use for the treatment group dropped from a mean of 43 to a mean of 5 at 6 months (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
15 (b)	AO1 (1 mark), AO3 (1 mark) One mark for identification of one strength in terms of reliability (AO1). One mark for justification of the strength in terms of reliability (AO3). For example: Mundt et al. (2012): - Participant variables did not affect the results about alcohol consumption between wave 1 and 2 so increasing reliability (1), as 14,738 of the original participants were used in wave 2 making it a repeated measures design (1). Dixit et al. (2012): - The results on alcohol consumption are not affected by the researchers picking participants who would support their hypotheses so increasing reliability (1), as a maximum of two participants were taken from each household to stop any bias in the type of households participants came from (1). Pengpid et al (2012): - There was no selection bias in who had the treatment improving the reliability of the results as the process can be repeated with another sample (1), because patients were randomly assigned to the control group or the treatment group using numbered sealed envelopes (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
15 (a)	AO2 (1 mark) One mark for a statement in relation to the aim of their health psychology practical investigation. For example: • Our aim was to investigate whether modern pop songs reference drugs in a positive or negative manner (1). Answers must relate to the health psychology practical investigation. Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
15 (b)	AO2 (4 marks) Up to four marks for description in relation to the health psychology practical investigation. For example: • 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) Answers must relate to the health psychology practical investigation. Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
14 (a)	AO2 (2 marks) Up to two marks for a description of the results in relation to their health psychology practical investigation. For example: Participants aged 18 to 28 had a more positive attitude towards the use of illegal drugs compared to participants aged 50 to 60 (1). There was a significant difference in attitudes towards drugs between younger and older adults as the calculated value of Mann Whitney was less than the critical value (1). Answers must relate to the health psychology practical investigation. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
14 (b)	AO2 (1 mark), AO3 (1 mark) One mark for identification of a strength in relation to their health psychology practical investigation (AO2). One mark for justification of the strength (AO3). For example: We used a standardised procedure as each participant was asked the same questions, about how positive their attitude to illegal drugs was (1), which increases reliability, as others can replicate our study investigating younger and older people's attitudes to illegal drugs and check the results are consistent over time (1). Answers must relate to the health psychology practical investigation. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
14 (c)	AO2 (1 mark), AO3 (1 mark) One mark for identification of an improvement in relation to their health psychology practical investigation (AO2). One mark for justification of the improvement (AO3). For example: We could have used open questions as well as closed questions for our questionnaire about attitudes to drugs to increase validity (1) as this would allow the younger and older participants to explain their attitudes towards drugs, giving us more detailed data to compare the attitudes of the age groups (1). Answers must relate to the health psychology practical investigation. Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
14 (a)	AO1 (2 marks) Credit up to two marks for a description of the results from Olds and Milner (1954). For example: • Olds and Milner (1954) found that when the electrodes were placed in the septal area of the brain, the rats spent between 75% and 92% of their acquisition time responding (1). When the electrodes were moved to the caudate nucleus, the acquisition scores showed stimulation of these areas had no effect (1). • Olds and Milner (1954) found that the septal area of the brain had the greatest reduction in pressing the lever during the extinction phase compared to other areas of the brain (1). When the electrodes were moved to the caudate nucleus, the acquisition scores showed stimulation of these areas had no effect (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
14 (b)	AO1 (2 marks), AO3 (2 marks) One mark for identification of a strength and a weakness (AO1). One mark for justification of the strength and the weakness (AO3). For example: Strength. - Olds and Milner (1954) used a standardised Skinner Box for all the rats, which had the same dimensions and a lever to access the electrical stimulation (1), which increases the reliability of their experiment as other researchers can use the same type of box to check for consistent results (1). - Olds and Milner (1954) only used 15 male hooded rats which makes the study more ethical as they followed reduction (1), so they used the minimal number of rats possible, meaning fewer rats were harmed by having an electrode placed in their brain (1). Weakness. - Olds and Milner (1954) used 15 male hooded rats so the results about a potential reward area in the brain may not be true for humans (1), as the brains of humans are more complex than the brains of rats so stimulating those areas may not be as rewarding for humans (1). - Only 15 male hooded rats were used, and in some cases, there was only one rat for an area of the brain such as the hippocampus (1), which reduced the generalisability of the results as we cannot be sure that the results are representative of the effect of brain stimulation in all rats (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
15 (ai)	AO2 (4 marks) One mark for squaring the values of the errors from the standard interview minus the mean (5.4) for each score $(x - \bar{x})^2$ -0.4², 1.6², -3.4², 2.6², -0.4² One mark for calculating the sum of these values = 21.2 One mark for dividing this by 4 (n-1) = 5.3 One mark for calculating the square root = 2.3 to one decimal place. Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
15 (aii)	AO2 (1 mark), AO3 (1 mark) One mark for identification of what the two standard deviations show (AO2). One mark for justification of what the two standard deviations show (AO3). For example: - The two standard deviations show that the spread of the scores for the number of words slurred is similar in both those who had not had beer and those who had 3 pints of beer (1), as there is only a difference of 0.2 slurred words between the two standard deviations for those who had beer and those who had not had beer (1). - The two standard deviations show that there is a greater spread of scores for the number of words slurred after 3 pints of beer (1), as the standard deviation was 2.3 which is higher than 2.1 (1). Answers must relate to the scenario. Generic answers score 0 marks. Look for other reasonable marking points.	(2)

Number	Indicative Content	Mark
17	A01 (4 marks), A03 (4 marks) A01 • The aim of the study was to see if electrical stimulation of rats' brains had a reinforcing effect. • Fifteen male hooded rats were used in the study, and they had to press a lever to deliver an electrical current to their brain. • The rats had six to twelve hours where they received an electrical stimulation every time they pressed the lever and one to two hours where pressing the lever did not lead to electrical stimulation. • When the electric stimulation went to the septal area of the brain the rats pushed the lever in increasing amounts, up to 7500 times in one rat. A03 • The results have validity as the rats had free access to food and water apart from when they were in the Skinner box, so the electrical stimulation did not reduce any other drive, and was reinforcing in its own right. • As rats brains are not exactly the same as human brains the results of the study may not apply to humans. • The study can be seen as unethical as the rats had to go up to twelve hours without food and water, and can be seen as inappropriate caging when the time spent in without food or water could be shorter. • The data are objective as the number of times the rats pressed the lever was used, therefore increasing the reliability of the results as it was not due to subjective interpretation of the rats behaviour. 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	Indicative Content	Mark
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Question Number	Indicative content	Mark
17	AO1 (4 marks), AO2 (4 marks) AO1 • A person is said to be physically dependent on a drug when they have developed tolerance and experience withdrawal symptoms. • Tolerance is when the body has adapted to the drug and more needs to be taken to feel the same effect as the first time it was taken. • When a person who is addicted stops taking the drug they experience physical symptoms as the drug levels in their body decrease. • Psychological dependency occurs when the addict believes they cannot manage their daily life without taking the drug. AO2 • Jekaterina is physically dependent on the illegal drug as she has withdrawal symptoms and has become tolerant to the drug. • Jekaterina needs to take twice as much of the drug, daily, in order to feel the same effects as when she first took it. • When she does not take the illegal drug Jekaterina has physical symptoms such as severe headaches. • Jekaterina has developed psychological dependency as she feels she cannot manage her stressful job without taking the drug. 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)

Question Number	Indicative Content
18	AO1 (6 marks), AO2 (4 marks) AO3 (6 marks) For example can we encourage the cessation of smoking? AO1 • Before health psychologists can help someone stop smoking they have to know the reasons why someone started smoking. • It could be because they saw family members or friends smoke so therefore started. • Health psychologists also need to look at how to reinforce the dangers of smoking rather than the smokers focus on the pleasure of smoking. • Smokers know the health dangers of smoking but ignore those and carry on smoking. • There are also the issues of addiction and habit that need to be addressed if the cycle is to be broken. AO2 • Campaigns should highlight the positives and negatives of smoking, and come to a conclusion rather than just highlight the negatives. • Smokers must be motivated to stop, according to the elaboration likelihood model, so health psychologists should offer some motivation such as entry to a prize draw for every day/week without a cigarette. • Using fear arousal graphic pictures have been put on the back of cigarette packs in the hope smokers will notice them and it will motivate them to stop smoking. • However, smokers may ignore the picture, or not take much notice of it as they are familiar with the pictures, so reducing its effectiveness. AO3 • The Hovland-Yale model of persuasion states that if both sides of the argument are presented and a solid opinion given then this is more effective than just presenting one side of the argument (Maguire 1964). • Pengpid et al (2013) found that if people were aware of the risks of a substance they were as likely to stop using that substance compared to if they had undergone brief intervention treatments, supporting the Hovland-Yale model. • The elaboration likelihood model does not cause a quick change in attitudes, therefore does not cause a quick change in behaviour so money may be a factor in its effectiveness when used in stop smoking campaigns. • Hammond et al (2003) found graphic pictures of cigarette packs were more likely to change smokers' behaviour than written warnings. • If treatment is to be effective it is important that the smoker wants to change their behaviour, and are ready to stop smoking otherwise they are more likely to start again when they experience difficulties such as cravings. • Health psychology can be used to help people stop smoking but it needs to be a holistic approach which deals with the causes of starting smoking, the physical addiction and the psychological addiction otherwise it is not as likely to be effective. Look for other reasonable marking points.

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.		
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–4 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	5–8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) 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	9–12 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning, leading to 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	13–16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) 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
18	AO1 (6 marks), AO2 (4 marks) AO3 (6 marks) AO1 • Laboratory experiments have a clear hypothesis which states what the experimenter hope to find out. • A laboratory experiment using animals is carried out in controlled conditions. • An IV is manipulated to see the effect on the DV. • Laboratory experiments can look at the effects of the drugs on the brain/long term effects of the drugs/effects of treatment programmes. • An independent measures design can be used where different participants are used in each condition. • They could use a repeated measures design where the same animals are used in both conditions. AO2 • Ian can control what other drugs the monkeys have previously taken so he will know the effects of the specific drug he has given them. • Because the monkeys were kept in isolation Ian can be sure any effects were caused by the drug so it is a useful method for him to use. • Monkeys are not genetically identical to humans so Ian's results may not be useful as they may not be the same for humans. • Ian used 35 monkeys which may be seen as a small number so the results may not be useful when Ian tries to generalise them. AO3 • The use of controlled conditions means a clear cause and effect can be established so they are appropriate. • Humans take drugs in social conditions not controlled conditions so the use of animals may not be appropriate. • As animals such as mice have a short life span it is possible to look at the long term effects of drugs making it more appropriate to study animals compared to humans. • Social animals, such as monkeys should not be kept in isolation unless absolutely necessary therefore Ian's use of the monkeys was not appropriate. • The minimum number of animals should be used to keep experiments into drug research ethical so Ian's use of only 35 monkeys is appropriate. • If the animals cannot join their social groups after the study then the experimenters need to ensure they are kept in as reasonable conditions as possible, such as putting all the rejected animals in their own social group so it may be more appropriate to study non-social animals. Look for other reasonable marking points.

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	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) A judgement/decision may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5–8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) 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)
Level 3	9–12 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) 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)
Level 4	13–16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical argument, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments and presents a balanced response, leading to a balanced judgement/decision. (AO3)