

INTERNATIONAL A-LEVEL PSYCHOLOGY

PS03

Unit 3 Advanced Topics and Research Methods 2

Mark scheme

June 2026

Version: 1.0 Final

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

Section A: Psychology of Sleep

Total for this section: 30 marks

Question	Marking Guidance	Total Marks
01	<p>Which of the following statements does not describe REM sleep?</p> <p>Shade one box only.</p> <p>Answer key: D – Heart rate decreases</p>	<p>1</p> <p>AO1 = 1</p>

Question	Marking Guidance	Total Marks
02	<p>Outline one study into the effect of endogenous pacemakers on the sleep/wake cycle.</p> <p>Award marks as follows: 3 marks: the outline of one study into the effect of endogenous pacemakers on the sleep/wake cycle is detailed. The answer is clear with appropriate use of specialist terminology. 2 marks: the outline of one study into the effect of endogenous pacemakers on the sleep/wake cycle lacks detail. The answer lacks clarity in places. 1 mark: the outline of one study into the effect of endogenous pacemakers on the sleep/wake cycle is briefly presented. The answer is very limited, vague and/or muddled.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Siffre (1975) lived in a cave deep underground for seven months without access to natural sunlight. His sleep/wake cycle increased and varied between 18–52 hours, with an average of 25 hours. • Morgan (1995) used hamsters that had been bred with an abnormal sleep/wake cycle of 20 hours. When the SCN cells were transplanted into the brains of healthy hamsters, they adopted the same abnormal 20-hour sleep/wake cycle. • DeCoursey et al. (2000) used three groups of chipmunks. One group had their SCN lesioned, another had a different part of their brain lesioned and a third group was a non-surgical control. When they returned the chipmunks back to their natural habitats, far more of the SCN lesioned group had been killed by predators within 80 days due to disruption to their sleep/wake cycle. <p>Credit other relevant material.</p>	<p>3</p> <p>AO1 = 3</p>

Question	Marking Guidance	Total Marks															
03	<p>Briefly describe and evaluate one explanation for narcolepsy.</p> <p>Possible description</p> <ul style="list-style-type: none"> • Thought to be linked to a genetic defect (Lin et al., 1999) on chromosome 12. This is responsible for regulating brain receptors for a neurochemical called orexin/hypocretin. • Low levels of orexin/hypocretin (or its receptors) in the brain is thought to be the cause of narcolepsy. • Orexin/hypocretin plays an important role in maintaining wakefulness so a reduction in levels (or its receptors) is thought to be the reason why people with narcolepsy fall asleep uncontrollably. <p>Possible evaluation</p> <ul style="list-style-type: none"> • Use of supporting research evidence, eg Lin et al., (1999), Thannickal et al. (2000), Sakurai (2007), Wickens (2005). • Generalisability issues as much of the research comes from studying animals such as examining narcolepsy in dogs which reduces the validity of the explanations. • Limited explanation as scientists are currently unable to explain why there is a loss of orexin-producing neurons. <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>3</td><td>Knowledge of one explanation for narcolepsy is detailed and accurate. Evaluation is effective. The answer is clear with appropriate use of specialist terminology.</td><td>5–6</td></tr> <tr> <td>2</td><td>Knowledge of one explanation for narcolepsy is relevant but detail is lacking. Any evaluation is mostly effective. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.</td><td>3–4</td></tr> <tr> <td>1</td><td>Knowledge of one explanation for narcolepsy is very limited. Evaluation is limited, poorly focused or absent. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	3	Knowledge of one explanation for narcolepsy is detailed and accurate. Evaluation is effective. The answer is clear with appropriate use of specialist terminology.	5–6	2	Knowledge of one explanation for narcolepsy is relevant but detail is lacking. Any evaluation is mostly effective. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4	1	Knowledge of one explanation for narcolepsy is very limited. Evaluation is limited, poorly focused or absent. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO1 = 3 AO3 = 3</p>
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0	No creditable content.	0															

Question	Marking Guidance	Total Marks
04	<p>Jannah and Pedro are experiencing disruptions to their biological rhythms. Jannah works as a doctor in a busy hospital. She switches between working day and night shifts. Pedro is an aircraft crew member. He regularly flies to different countries, serving customers on the aircraft.</p> <p>Discuss research into the effects of shift work and jet lag. Refer to the possible effects of disrupting Jannah’s and Pedro’s biological rhythms within your answer.</p> <p>Possible content</p> <p>Shift work</p> <ul style="list-style-type: none"> • Working patterns dictate that some people are working when they should be sleeping. • Leads to desynchronisation of endogenous pacemakers/internal body clocks with exogenous zeitgebers/environmental cues. • Effects can include poor performance/attention/judgement during night shifts; increased risk of cancer and heart disease; increased risk of depression; sleep deprivation and fatigue due to interruptions to sleep during the day. <p>Jet lag</p> <ul style="list-style-type: none"> • Jet lag is a temporary disruption of the body’s circadian rhythms caused by rapid travel across multiple time zones. • It occurs because the endogenous pacemaker/internal body clock becomes desynchronised with the exogenous zeitgeber/external environment’s day/night cycle. • Jet lag is heavily influenced by the number of time zones that have been crossed within a short space of time and is more significant when travelling from west to east (phase advance). • Effects can include fatigue and sleep disturbances, cognitive impairments such as difficulty concentrating, irritability or low mood. <p>Possible application</p> <ul style="list-style-type: none"> • Both Jannah and Pedro are likely to experience desynchronisation to their biological rhythms (endogenous pacemakers). • As Jannah works shifts, she is likely to experience chronic sleep deprivation which might lead to an increased risk of health problems such as heart disease. She might also experience dips in cognitive performance such as concentration in the early hours of the morning (which could be dangerous in her job as a doctor). • As Pedro is experiencing jet lag, he might experience temporary fatigue and problems sleeping when arriving at a new location. It might take him several days to adjust to the local time. He might also experience reduced cognitive performance such as confusion, eg forgetting customer’s orders on the aircraft. These effects are likely to be more severe when he flies long distances from west to east. 	<p>20</p> <p>AO1 = 8 AO2 = 4 AO3 = 8</p>

Possible discussion

- Use of supporting evidence for the effects of shift work, eg Davis et al. (2001), Coren (1996); and jet lag, eg Cho et al. (2000; 2001), Coren (1996), Recht et al. (1995).
- Use of evidence for techniques devised to help people cope with the effects of shift work, eg Czeisler, Moore-Ede and Coleman (1982), Gordon et al. (1986), Phillips et al. (1991).
- Discussion of real-world applications of techniques devised to help people cope with the effects of shift work such as forward shift rotation, non-rotating shift work and rapid rotation; and jet lag such as use of melatonin supplements (Beaumont et al., 2004), avoiding caffeine and alcohol, adjusting clocks to the new time zone before travelling, eating meals to match the time in the new time zone.
- Much of the research into both shift work and jet lag is correlational, so it is difficult to establish causation in relation to whether the issues, such as health-related problems, result from disrupting biological rhythms, or whether other factors such as stress and poor diet might play a role.
- Individual differences, as some people suffer more severe effects of shift work and/or jet lag than others which can lead to problems with generalisability of findings.
- Much of the research into this area is based on western participants, due to different lifestyle patterns across cultures, there might be limited generalisability.

Credit other relevant material.

Level	Description	Marks
4	Knowledge of research into the effects of shift work and jet lag is accurate and generally well detailed. Discussion is effective. Application is appropriate. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear and focused. Specialist terminology is used effectively.	16–20
3	Knowledge of research into the effects of shift work and/or jet lag is evident but there are occasional inaccuracies and/or omissions. There is some effective discussion. There is some appropriate application. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately. OR discussion of jet lag or shift work at Level 4.	11–15

	2	Limited knowledge of research into the effects of shift work and/or jet lag is present. Any discussion/application is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately. OR discussion of jet lag or shift work at Level 3.	6–10	
	1	Knowledge of research into the effects of shift work and/or jet lag is very limited. Discussion/application is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used. OR discussion of jet lag or shift work at Level 2 or 1.	1–5	
	0	No creditable content.	0	

Section B: Schizophrenia

Total for this section: 30 marks

Question	Marking Guidance	Total Marks
05	<p>Explain one strength of using anti-psychotic drugs as a therapy for schizophrenia.</p> <p>Award marks as follows:</p> <p>3 marks: the strength of using anti-psychotic drugs is detailed. The answer is clear with appropriate use of specialist terminology.</p> <p>2 marks: the strength of using anti-psychotic drugs lacks detail. The answer lacks clarity in places.</p> <p>1 mark: the strength of using anti-psychotic drugs is briefly presented. The answer is very limited, vague and/or muddled.</p> <p>Possible strengths</p> <ul style="list-style-type: none"> • Use of evidence for effectiveness of anti-psychotic drugs, eg Davies et al. (1990), Thornley (2003), Adams et al. (2005), Cole et al. (1964), Meltzer (1999), McGlashan et al. (2006). • Anti-psychotic drugs are accessible for people as many of them can be taken in a variety of forms, eg tablets or injections for those who have memory problems. • Anti-psychotic drugs have revolutionised the treatment of schizophrenia and decreased the number of people who were previously separated from society because they had been isolated/hospitalised. <p>Credit other relevant strengths.</p>	<p>3</p> <p>AO3 = 3</p>

Question	Marking Guidance	Total Marks
06	<p>What is meant by culture bias and gender bias in the diagnosis of schizophrenia?</p> <p>For each term, award marks as follows: 2 marks: for a clear definition of culture/gender bias. 1 mark: for a muddled or vague definition of culture/gender bias.</p> <p>Possible content Culture bias</p> <ul style="list-style-type: none"> • There might be an assumption that a culture's way of interpreting symptoms to diagnose schizophrenia is applicable to all other cultures. • Western diagnostic criteria (eg DSM, ICD) may not align with non-Western cultural expressions of mental illness. • Doctors/psychologists/clinicians have a tendency to judge people in terms of their own cultural assumptions. <p>Gender bias</p> <ul style="list-style-type: none"> • Decisions made about the diagnosis of schizophrenia can be different depending on whether the person is male or female. • Most research into schizophrenia has been conducted into and on men, therefore assumptions are applied to women presuming that there are no differences between the genders. <p>Credit other relevant material, such as examples of cultural and gender bias in the diagnosis of schizophrenia.</p>	<p>4</p> <p>AO1 = 4</p>

Question	Marking Guidance	Total Marks
07	<p>Wendy is describing some symptoms to her doctor. After listening to her description, the doctor tells Wendy that she is demonstrating symptoms of avolition.</p> <p>What is meant by avolition? Suggest one example of how Wendy might show avolition.</p> <p>Award marks as follows: 2 marks: for a clear definition of avolition. 1 mark: for a muddled or vague definition of avolition.</p> <p>Possible content The loss/lack of motivation or inability to carry out goal-directed activities, resulting in lowered activity levels.</p> <p>Credit alternative wording.</p> <p>AND</p> <p>1 mark for a relevant example of how Wendy might show avolition.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Wendy might not be able to go to work/school. • Wendy might not be able to maintain her personal hygiene. • Wendy might not be able to attend social events. • Wendy might not be completing other daily activities such as cooking. <p>Credit other relevant suggestions.</p>	<p>3</p> <p>AO1 = 2 AO2 = 1</p>

Question	Marking Guidance	Total Marks
08	<p>After hearing the doctor explain avolition, Wendy asks her doctor if she has schizophrenia. However, the doctor is not confident about giving Wendy an official diagnosis of schizophrenia.</p> <p>Using your knowledge of symptom overlap, suggest why the doctor is not confident about giving Wendy an official diagnosis of schizophrenia.</p> <p>Award marks as follows: 2 marks: for a clear suggestion of why the doctor is not confident about officially diagnosing Wendy with schizophrenia. 1 mark: for a muddled or vague suggestion of why the doctor is not confident about officially diagnosing Wendy with schizophrenia.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Wendy demonstrates symptoms of avolition, which is a symptom linked to schizophrenia, but it is also a symptom linked to many other psychological disorders (such as depression). • The doctor will not want to officially diagnose Wendy with schizophrenia as it might be an invalid diagnosis, as Wendy might have a different psychological condition that is not schizophrenia. • A misdiagnosis could lead to incorrect treatments being given to Wendy, which could be dangerous. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks															
09	<p>Evaluate cognitive explanations of schizophrenia.</p> <p>Possible evaluation</p> <ul style="list-style-type: none"> • Use of evidence to support or refute the cognitive explanations, eg Sterling (2006), O'Carroll (2000), Bowie and Harvey (2006), Betall et al. (1991), Shin et al. (2008). • Knowledge of dysfunctional thought processing in schizophrenia has formed the basis of effective treatments such as cognitive behavioural therapy. • Much of the evidence is correlational, so we cannot be sure if cognitive deficits cause schizophrenia or if having schizophrenia causes cognitive deficits. • Cognitive explanations can account for both positive and negative symptoms making this a more holistic explanation. • Some research has found that dysfunctional thinking occurs before the onset of schizophrenia suggesting that dysfunctional thinking cannot be an effect of having schizophrenia (O'Carroll, 2000). • Cognitive explanations cannot explain what led to the cognitive dysfunction and thus cannot explain the cause of schizophrenia. • Cognitive explanations can be considered limited and cannot account for the biological evidence (such as the dopamine hypothesis) of schizophrenia. • Cognitive theories point to the importance of attributional and reasoning biases, which may contribute to the maintenance of delusions in schizophrenia. <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>3</td><td>Evaluation of cognitive explanations of schizophrenia is effective. The answer is clear with appropriate use of specialist terminology.</td><td>5–6</td></tr> <tr> <td>2</td><td>Evaluation of cognitive explanations of schizophrenia is relevant, but effectiveness is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.</td><td>3–4</td></tr> <tr> <td>1</td><td>Evaluation of cognitive explanations of schizophrenia is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	3	Evaluation of cognitive explanations of schizophrenia is effective. The answer is clear with appropriate use of specialist terminology.	5–6	2	Evaluation of cognitive explanations of schizophrenia is relevant, but effectiveness is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4	1	Evaluation of cognitive explanations of schizophrenia is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO3 = 6</p>
Level	Description	Marks															
3	Evaluation of cognitive explanations of schizophrenia is effective. The answer is clear with appropriate use of specialist terminology.	5–6															
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0	No creditable content.	0															

Question	Marking Guidance	Total Marks
10	<p>Describe and evaluate two biological explanations for schizophrenia.</p> <p>Possible description</p> <p>Genetics</p> <ul style="list-style-type: none"> • Schizophrenia is hereditary and is caused by one or more candidate genes (COMT gene, C4 gene) that are inherited and passed on from parents to offspring. • Family, twin and adoption studies suggest that schizophrenia tends to cluster in families, eg identical twins have a higher concordance and adopted children have higher incidence if one or more of their natural parents has schizophrenia. • Research suggests that schizophrenia is polygenic (Ripke et al., 2014 has proposed that schizophrenia might involve up to 108 genes). • The genetic explanation also suggests a person inherits a genetic predisposition towards the disorder (diathesis) which then becomes activated via some environmental factor (stressor). <p>Neural Correlates</p> <ul style="list-style-type: none"> • The dopamine hypothesis suggests that reduced dopamine in the frontal area of the brain (hypodopaminergia) might be causing negative symptoms whilst increased dopamine in other areas (hyperdopaminergia) might be responsible for the positive symptoms. • The glutamate hypothesis suggests that glutamate activity has been found to be reduced in people with schizophrenia and this is linked to the NMDA receptors working less effectively. Glutamate acts to reduce dopamine, therefore if glutamate is reduced this will increase dopamine levels and result in schizophrenic symptoms. • Changes in the structure of the brain might be correlated to behavioural changes seen in schizophrenia, eg negative correlation between activity levels in the ventral striatum and the severity of overall negative symptoms, reduced activity in the superior temporal gyrus and the anterior cingulate gyrus is a neural correlate of the positive symptoms. <p>Possible evaluation</p> <ul style="list-style-type: none"> • Use of supporting evidence, eg Gottesman & Shields (1966 and 1982), Kety et al. (1968), Tienari et al. (1994), Ripke et al. (2014), Kim et al. (1980), Juckel et al. (2006). • Issues with research, eg twin studies have used small samples and evidence suggests that MZ twins are reared in a more similar environment than DZ twins, and therefore nurture might partly explain the higher concordance rate found for MZ twins. • Supporting evidence from the success of anti-psychotic drugs which block dopamine receptors and help to reduce symptoms. • Oversimplification of the dopamine hypothesis. Many neurotransmitter systems interact and the mapping of these cortical pathways needs further investigation. • Unreliable findings, eg Lewis (1990) reviewed 18 studies and found no significant link between enlarged ventricles and negative symptoms associated with schizophrenia. 	<p>12</p> <p>AO1 = 6 AO3 = 6</p>

- A variety of brain mechanisms seem to be implicated in schizophrenia, but none are yet sufficiently understood to provide a causal link.
- Environmental risk factors are implicated in the onset of schizophrenia; therefore it is likely that biological factors only contribute partially towards the development of schizophrenia (reductionist explanation).

Credit other relevant material.

Level	Description	Marks
4	Knowledge of two biological explanations for schizophrenia is accurate and generally well detailed. Evaluation is effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear and focused. Specialist terminology is used effectively.	10–12
3	Knowledge of two biological explanations for schizophrenia is evident but there are occasional inaccuracies and or omissions. There is some effective evaluation. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately. OR one biological explanation at Level 4.	7–9
2	Limited knowledge of two biological explanations for schizophrenia is present. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately. OR one biological explanation at Level 3.	4–6
1	Knowledge of two biological explanations for schizophrenia is very limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used. OR one biological explanation at Level 2 or 1.	1–3
0	No creditable content.	0

Section C: Research Methods 2

Total for this section: 30 marks

	A psychologist was interested in studying people’s attitudes towards healthy living. The psychologist decided to construct a questionnaire. The questionnaire was distributed to a large number of people to obtain data into attitudes towards healthy living.	
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Question	Marking Guidance	Total Marks
11	<p>State the aim of this study.</p> <p>Award 1 mark for the following: The aim of this study is to investigate people’s attitudes towards healthy living. Credit alternative wording.</p>	<p>1</p> <p>AO2 = 1</p>

Question	Marking Guidance	Total Marks
12	<p>Write one open question and one closed question that would be suitable for the psychologist to include in this questionnaire about healthy living.</p> <p>For each type of question, award marks as follows: 2 marks: for a clear open/closed question that would be suitable for the questionnaire on healthy living. 1 mark: for a muddled or vague open/closed question that would be suitable for the questionnaire on healthy living.</p> <p>Possible content Open questions</p> <ul style="list-style-type: none"> • Explain what healthy living means to you. • Describe what changes, if any, you have made to try and live in a healthy way over the past year. • Explain what challenges you face when trying to maintain a healthy lifestyle. • Describe what you think motivates people to try and live a healthier lifestyle. • Why do you think some people struggle to follow a healthy lifestyle? Please explain your answer. <p>Note: No marks for an open question that could be answered with one word, eg simply saying yes or no, or a question that would generate quantitative data.</p> <p>Closed questions</p> <ul style="list-style-type: none"> • How many times per week do you go to the gym? (circle your answer). [0 1–2 3–4 4–5 6+]. • On a scale of 1–5, how important is healthy living to you? (circle your answer) [Not at all 1 2 3 4 5 Extremely]. • Do you actively monitor your diet for health reasons? [yes/no]. • Do you always try to get at least 7 hours of sleep each night? [yes/no]. • Do you regularly eat fruit and vegetables? [yes/no]. <p>Note: Maximum of 1 mark for a closed question that does not have suitable closed option choices included.</p> <p>Credit other relevant material.</p>	<p>4</p> <p>AO2 = 4</p>

Question	Marking Guidance	Total Marks
13	<p>420 people completed the questionnaire about healthy living. Out of the 420 people, 147 of them were male.</p> <p>Calculate the percentage of females who completed the questionnaire on healthy living. Show your workings.</p> <p>Award marks as follows: 2 marks: for the correct answer: 65%. 1 mark: for an incorrect answer but some correct calculation.</p> <p>Content $420 - 147 = 273$ females $273/420 \times 100 = 65\%$</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks												
14	<p>Outline one strength and one limitation of using questionnaires in psychological research.</p> <p>Possible strengths</p> <ul style="list-style-type: none"> Questionnaires tend to be less time consuming than other methods as they can be given to large groups of people to complete at the same time, unlike interviews which are usually much slower as they tend to be conducted on a one-to-one basis. Questionnaires can be more ethical as they can easily be made anonymous by not asking participants to include their name or any other personal details, this can encourage more honest (valid) answers. All participants respond to the same set of questions, this enhances reliability and comparability of the results. <p>Possible limitations</p> <ul style="list-style-type: none"> Participants might misinterpret/misunderstand the questions. This could make their responses (and therefore the findings/conclusions of the study overall) less valid. Participants may not be honest/show social desirability on questionnaires by answering the questions how they think the researcher wants them to, rather than what they actually believe, this lowers the validity of the study. Questionnaires can often have lower response rates, especially for postal or online questionnaires. This can result in problems generalising the results to a larger population. <p>Credit other relevant strengths and limitations.</p> <p>Note: Award a maximum of 3 marks for an answer that only focuses on either a strength or limitation.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>2</td><td>The strength and/or limitation of using questionnaires is accurate with some detail. The answer is clear with appropriate use of specialist terminology.</td><td>3–4</td></tr> <tr> <td>1</td><td>The strength and/or limitation of using questionnaires is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	2	The strength and/or limitation of using questionnaires is accurate with some detail. The answer is clear with appropriate use of specialist terminology.	3–4	1	The strength and/or limitation of using questionnaires is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>4</p> <p>AO3 = 4</p>
Level	Description	Marks												
2	The strength and/or limitation of using questionnaires is accurate with some detail. The answer is clear with appropriate use of specialist terminology.	3–4												
1	The strength and/or limitation of using questionnaires is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	1–2												
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	<p>The data from the questionnaire showed that there was a difference in attitudes towards healthy foods between younger and older people. The psychologist decided to investigate this further by conducting an experiment.</p> <p>The psychologist obtained two groups of participants. Group A: 20 young people, aged between 16–25 years old. Group B: 20 older people, aged between 56–65 years old.</p> <p>Each participant was shown pictures of 30 different foods that the psychologist had decided were either healthy or not healthy.</p> <p>The participants were asked to rate how healthy they thought each of the 30 different foods were on a scale of 1 to 10. 1 was not healthy at all and 10 was very healthy.</p>	
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Question	Marking Guidance	Total Marks
15	<p>Identify the operationalised independent variable in this experiment.</p> <p>Award marks as follows: 2 marks: for an operationalised independent variable: whether the participants were young people aged between 16–25 years old or older people aged between 56–65 years old. 1 mark: for a limited/vague/muddled independent variable which lacks operationalisation, eg age (of participants).</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks
16	<p>This experiment gathered ordinal data.</p> <p>What is meant by ordinal data? Briefly explain why the psychologist's data can be considered ordinal.</p> <p>Award 1 mark for each of the following:</p> <ul style="list-style-type: none"> • (Subjective) data that can be ranked/ordered from lowest to highest but the intervals between the ratings are not equal. • The psychologist asked participants to rate the foods on a (subjective) scale of 1–10 (where 1 was not healthy at all and 10 was very healthy). <p>Credit alternative wording.</p>	<p>2</p> <p>AO1 = 1 AO2 = 1</p>

Question	Marking Guidance	Total Marks
17	<p>The psychologist analysed the data from this experiment using a Mann-Whitney test.</p> <p>Apart from gathering ordinal data, explain two other reasons why it was appropriate to use a Mann-Whitney test for this experiment. Refer to the description of the experiment in your answer.</p> <p>For each reason, award marks as follows: 1 mark: for stating an accurate reason why a Mann-Whitney test was appropriate. AND 1 mark: for explaining this reason in relation to the experiment.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The psychologist was investigating a difference between younger and older people's attitudes towards healthy foods. • The psychologist used an unrelated/independent groups design as the participants were either young people or older people. <p>Credit alternative wording.</p>	<p>4</p> <p>AO2 = 4</p>

Question	Marking Guidance	Total Marks
18	<p>The result of the Mann-Whitney test found a significant result at the $p=0.05$ level.</p> <p>Explain what it means for this experiment if the results are significant at the $p=0.05$ level.</p> <p>Award 1 mark for each of the following:</p> <p>Possible content</p> <ul style="list-style-type: none"> • The psychologist can reject their null hypothesis and can accept their (experimental/directional/non-directional) hypothesis. • The psychologist can be confident that there is only a 5% chance/possibility that the results of the experiment are due to chance. • The psychologist can be confident that there is a statistically significant difference in attitudes towards healthy foods between younger and older people. <p>Credit other relevant material/wording, eg reference to reduction of making a Type I or Type II error.</p>	<p>3</p> <p>AO2 = 3</p>

Question	Marking Guidance	Total Marks
19	<p>When reflecting on the experiment, the psychologist became concerned about extraneous variables.</p> <p>Identify one possible extraneous variable in this experiment. Briefly suggest how this extraneous variable could have been dealt with.</p> <p>Award marks as follows: 1 mark: for identifying a relevant extraneous variable in this experiment.</p> <p>AND</p> <p>1 mark: for a relevant suggestion of how this extraneous variable could have been dealt with.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The psychologist selected the pictures of healthy and unhealthy foods themselves. To deal with this, the psychologist should have asked another (unbiased) person to select the pictures. • Possible cultural differences as people from different cultures might have different views on what constitutes healthy and unhealthy food. This could be dealt with by ensuring all participants are from the same cultural background. • Issues with interpreting the ratings on the scale as often people do not use the extreme ends. To deal with this the researcher could ask participants to score health in another way such as estimating number of calories in the food. • How familiar the participants were with the foods chosen to rate. This could be dealt with by ensuring that all foods chosen are common within the participant's culture. • If participants have specific health conditions, eg diabetes, they might have different views on healthy and unhealthy foods. To deal with this, the psychologist could ensure that all participants do not suffer from any food-related health conditions. • Whether participants had eaten that day. If they were hungry this may have influenced their perception of the food. This could be dealt with by providing all participants with a standardised lunch prior to completing the experiment. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

	<p>The psychologist wanted to further investigate the participants' attitudes towards healthy foods.</p> <p>The psychologist gave each of the 40 participants from Group A and Group B a food diary to complete every day for two weeks.</p> <p>The participants were asked to keep a record of what they ate throughout the day. They had to give each food a health rating on a scale of 1–10. 1 was not healthy at all and 10 was very healthy. The participants also had to write how they felt after eating.</p> <p>At the end of the two-week period, the psychologist collected each participant's food diary and conducted a content analysis.</p>	
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Question	Marking Guidance	Total Marks												
20	<p>Explain how the psychologist could have conducted a content analysis on the participants' feelings, after eating, that were written in the food diaries.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The psychologist should read through each of the participants' food diaries to gain an understanding of their content, such as recurring themes in the participants' ratings and feelings about the foods they ate. • The psychologist would need to develop a coding system to use to analyse the diary entries, eg grouping foods into low, moderate and high health ratings and categorising feelings into positive, neutral or negative emotions. • The psychologist would then need to re-read each food diary again and use their coding system, such as tallies, to record the content. • The psychologist could then count how often each category or code appeared (by counting the tallies to gather quantitative data). • The psychologist could also conduct a thematic analysis where they categorise the findings into overall themes and concepts that emerged about healthy eating (to gather qualitative data). <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>2</td><td>The explanation of how the psychologist could have conducted a content analysis is accurate with some detail. The answer is clear with appropriate use of specialist terminology.</td><td>3–4</td></tr> <tr> <td>1</td><td>The explanation of how the psychologist could have conducted a content analysis is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	2	The explanation of how the psychologist could have conducted a content analysis is accurate with some detail. The answer is clear with appropriate use of specialist terminology.	3–4	1	The explanation of how the psychologist could have conducted a content analysis is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>4</p> <p>AO2 = 4</p>
Level	Description	Marks												
2	The explanation of how the psychologist could have conducted a content analysis is accurate with some detail. The answer is clear with appropriate use of specialist terminology.	3–4												
1	The explanation of how the psychologist could have conducted a content analysis is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	1–2												
0	No creditable content.	0												

Question	Marking Guidance	Total Marks
21	<p>Outline one limitation of conducting content analysis.</p> <p>Award marks as follows: 2 marks: for a clear limitation of conducting content analysis. 1 mark: for a muddled or vague limitation of conducting content analysis.</p> <p>Possible limitations</p> <ul style="list-style-type: none"> • Issues with cause and effect as causality cannot be established. This is because content analysis involves a description of content such as behaviours or thoughts, rather than explanations of it. • There is a lack of objectivity as content analyses are open to subjective interpretation of the content being analysed. This can lead to researcher bias. • There can be a lack of context in content analysis as they can often overlook the broader contexts such as cultural, social or situational factors. This can lead to oversimplified conclusions. <p>Credit other relevant limitations.</p>	<p>2</p> <p>AO3 = 2</p>

PS03 grid

	AO1	AO2	AO3	Total
Section A				
01	1			1
02	3			3
03	3		3	6
04	8	4	8	20
Section B				
05			3	3
06	4			4
07	2	1		3
08		2		2
09			6	6
10	6		6	12
Section C				
11		1		1
12		4		4
13		2		2
14			4	4
15		2		2
16	1	1		2
17		4		4
18		3		3
19		2		2
20		4		4
21			2	2
Unit total	28	30	32	90