OXFORD AQA

INTERNATIONAL QUALIFICATIONS

INTERNATIONAL A-LEVEL

PSYCHOLOGY

PS03

Unit 3 Advanced Topics and Research Methods 2

Mark scheme

June 2024

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**

<table>
<tr><th>Question</th><th>Marking Guidance</th><th>Total Marks</th></tr>
<tr><td>01</td><td>
Kazem is a nurse who regularly works shifts.

When Kazem arrives home at 9 am after his night shift he often struggles to fall asleep, despite feeling tired. Last night, at 2 am during his shift, he nearly switched off an important piece of medical equipment until a colleague stopped him. Recently, Kazem has been feeling ill and his doctor has sent him for medical tests.

Using your knowledge on the effects of shift work, explain Kazem's behaviour.

Possible application
• Kazem is experiencing a desynchronisation of his circadian rhythm. This is the insomnia caused by shift work as, despite feeling tired he struggles to get to sleep because it is morning time (after 9 am) rather than the night.
• Kazem is suffering from concentration problems/issues with decision making in the early hours of the morning (2 am) as he nearly switched off an important piece of medical equipment.
• Kazem is experiencing physical effects of shift work in terms of feeling ill and needing to undergo medical tests (possibly to investigate potential cancer or heart disease).

Credit other relevant material linked to the stem.

<table>
<tr><th>Level</th><th>Description</th><th>Marks</th></tr>
<tr><td>2</td><td>The application of effects of shift work to Kazem 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 application of effects of shift work to Kazem 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>
</table>
</td><td>4
AO2 = 4</td></tr>
</table>

	Our biological rhythms are influenced by endogenous pacemakers and exogenous zeitgebers.	

Question	Marking Guidance	Total Marks
02.1	**Using an example, what is meant by endogenous pacemakers?** **Award marks as follows** **1 mark** for a definition of endogenous pacemakers, eg internal body clocks that regulate many of our biological rhythms (commonly found in the brain). **1 mark** for an example of an endogenous pacemaker, eg suprachiasmatic nucleus (SCN), hypothalamus.	**2** **AO1 = 2**

Question	Marking Guidance	Total Marks
02.2	**Using an example, what is meant by exogenous zeitgebers?** **Award marks as follows** **1 mark** for a definition of exogenous zeitgebers, eg external cues/factors in the environment that influence the function of the endogenous pacemakers.**1 mark** for an example of an exogenous zeitgeber, eg light levels, social activities, meal times.	**2** **AO1 = 2**

<table>
<tr><th>Question</th><th>Marking Guidance</th><th>Total Marks</th></tr>
<tr><td>03</td><td>
Describe memory consolidation as a function of sleep.

Possible content
• Memory consolidation suggests that we need to sleep so events that have occurred during the day can become permanently stored as memories.
• REM sleep has a role in the development and storage of procedural memories.
• NREM sleep (particularly the deeper stages) plays a role in the development and storage of declarative memories.
• During NREM, declarative memories are reactivated in the hippocampus and stored as more permanent memories in the frontal cortex.
• Credit description of research, eg Karni et al. (1994) and Walker et al. (2002), only when used as part of a description of memory consolidation.

Credit other relevant material.

<table>
<tr><th>Level</th><th>Description</th><th>Marks</th></tr>
<tr><td>2</td><td>Knowledge of memory consolidation as a function of sleep 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>Knowledge of memory consolidation as a function of sleep 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>
</table>
</td><td>4
AO1 = 4</td></tr>
</table>

<table>
<tr><th>Question</th><th>Marking Guidance</th><th>Total Marks</th></tr>
<tr><td>04</td><td>
Explain one strength and one limitation of evolutionary explanations of sleep.

Possible strengths
• Use of supporting evidence for evolutionary explanations of sleep, eg Lesku et al. (2006), Berger and Phillips (1995), Lima and Rattenborg (2007), Zeplin and Rechtchaffen (1974), Capellini et al. (2008), Mukhametov (1987).
• Support that sleep has an adaptive function, eg unilateral sleep has evolved in some marine mammals and migratory birds suggesting that the evolution of sleeping patterns is a means of solving evolutionary pressures faced by these animal groups.
• Evolutionary explanations are not considered reductionist as it takes the whole animal, its lifestyle and environment into account.

Possible limitations
• Use of contradictory evidence for evolutionary explanations of sleep, eg Allison and Cicchetti (1976), Shapiro et al. (1981).
• Thought to be oversimplistic as it cannot explain the function of REM and NREM sleep as distinctive stages of sleep (which restoration theories can).
• Cannot explain why there is a strong need to sleep when sleep has been deprived.
• Retrospective as the explanations may have been relevant in our evolutionary past, but it is not true of human sleep within the modern world.
• Much of the research into evolutionary explanations of sleep has been conducted using animals so there are issues generalising it to humans.

Credit other relevant material.

<table>
<tr><th>Level</th><th>Description</th><th>Marks</th></tr>
<tr><td>3</td><td>Explanation of one strength and one limitation of evolutionary explanations of sleep is detailed and appropriate. The answer is clear with appropriate use of specialist terminology.</td><td>5–6</td></tr>
<tr><td>2</td><td>Explanation of one strength and/or one limitation of evolutionary explanations of sleep is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.
OR just one strength or limitation at Level 3.</td><td>3–4</td></tr>
<tr><td>1</td><td>Explanation of the one strength and/or one limitation of evolutionary explanations of sleep is very limited. The answer is vague/muddled. Specialist terminology is either absent or inappropriately used.
OR just one strength or limitation at Level 2.</td><td>1–2</td></tr>
<tr><td>0</td><td>No creditable content.</td><td>0</td></tr>
</table>
</td><td>6
AO3 = 6</td></tr>
</table>

Question	Marking Guidance	Total Marks
05	**Discuss the role of personality factors and genetics in insomnia.** **Possible knowledge** • Insomnia might arise because of an existing underlying factor (primary insomnia) or as a consequence of some other pre-existing condition or environmental factor (secondary insomnia). • Insomnia has been linked to anxiety (secondary insomnia) which is associated with high levels of physiological arousal. This prevents a person sleeping normally. • Neuroticism is a personality trait that has been correlated with anxiety. Those with anxious personalities are more likely to experience insomnia. • Some people are naturally more alert and can function better at different times of the day (chronotype) which has been linked to genetics (primary insomnia). This influences the circadian sleep-wake cycle resulting in difficulty sleeping. • Credit description of research studies into insomnia, eg Vahtera et al. (2007), Gregory et al. (2006), Heath et al. (1998), Morin et al. (1999), Kerkhof and Van Dongen (1996), Van Dongen et al. (2005). **Possible discussion** • Use of supporting research for link between anxiety and insomnia, eg Vahtera et al. (2007), Gregory et al. (2006), Heath et al. (1998); for link between anxiety and mental illness, eg Morin et al. (1999); for chronotypes, eg Kerkhof and Van Dongen (1996), Van Dongen et al. (2005). • Methodological issues with research, eg small sample sizes, much of the research being correlational. • Twin studies have shown evidence for a genetic component to insomnia, eg Bastian and Morin (2000), Watson et al. (2006). • Lack of understanding of the genes involved as, although several 'clock genes' have been identified, we do not understand how these functions control chronotype and influence insomnia. • Oversimplistic as the evidence has shown that environmental factors also play a role in insomnia, eg Riemann et al. (2010). • Use of therapies such as CBT which reduce arousal and anxiety levels, which seem to be effective in helping insomnia. Credit other relevant material.	**12** **AO1 = 6** **AO3 = 6**

Level	Description	Marks
4	Knowledge of the role of personality factors **and** genetics in insomnia is mostly accurate and generally well detailed. Discussion is mostly 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 the role of personality factors **and/or** genetics in insomnia is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately. **OR** just the role of personality or genetics at Level 4.	**7–9**
2	Limited knowledge of the role of personality factors **and/or** genetics in insomnia is present. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately. **OR** just the role of personality or genetics at Level 3.	**4–6**
1	Knowledge of the role of personality factors **and/or** genetics in insomnia is very limited. Discussion 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** just the role of personality or genetics at Level 2.	**1–3**
0	No creditable content.	**0**

Section B: Schizophrenia **Total for this section: 30 marks**

Question	Marking Guidance	Total Marks
06	**Using an example, explain the term dysfunctional thought processing.** **Award marks as follows** **1 mark** for a definition of dysfunctional thought processing, eg a person's internal information processing/cognitive system is not functioning normally. **1 mark** for an example of a dysfunctional thought, eg issues with perception, memory, reasoning, language deficits.	**2** **AO1 = 2**

	Asha is talking to her doctor. **"Recently, I have been struggling to find the motivation to leave the house to go to work. When I do go outside, I think that people from the government are recording my behaviour. At times, I also hear voices which comment on my actions."**	

Question	Marking Guidance	Total Marks
07.1	**Outline two symptoms of schizophrenia shown by Asha.** Award **1 mark** for any **two** of the following: • Asha is showing avolition as she is struggling to find the motivation to leave the house to go to work. • Asha is experiencing delusions (delusions of persecution) as she believes her actions are being recorded by the government. • Asha is demonstrating (auditory) hallucinations as she hears voices commenting on her actions. **Note**: simply naming symptoms cannot receive any credit.	**2** **AO2 = 2**

	Asha's doctor asks her to provide some information about her family's medical history. **Asha says, "My father was diagnosed with schizophrenia 3 years ago. I also think that my grandmother, my father's biological mother, had some symptoms of schizophrenia as she used to say that she heard voices. However, my grandmother was never medically diagnosed with the condition."**	

Question	Marking Guidance	Total Marks
07.2	**Using your knowledge of genetics as an explanation for schizophrenia, briefly explain why Asha might have developed schizophrenia.** **Award marks as follows** **2 marks** for a clear application of genetics to explain why Asha might have developed schizophrenia. **1 mark** for a muddled or vague application of genetics to explain why Asha might have developed schizophrenia. **Possible content** • Asha's grandmother is likely to have had a gene(s) linked to schizophrenia as Asha suggests her grandmother had shown symptoms of schizophrenia (even though she was not diagnosed). • Asha's father may have inherited the gene(s) from his mother/Asha's grandmother. • The gene(s) is likely to have been passed on from her father, who has also been diagnosed with schizophrenia, to Asha who is demonstrating symptoms of schizophrenia.	**2** **AO2 = 2**

<table>
<tr><th>Question</th><th>Marking Guidance</th><th>Total Marks</th></tr>
<tr><td>08</td><td>
Briefly evaluate the genetic explanation for schizophrenia.

Possible content
• Supporting research from twin studies, eg Gottesman & Shields (1966), Kallmann (1946), Schultz (2009).
• Supporting research from family or adoption studies, eg Kallmann (1938), Kety et al. (1968).
• Issues with using evidence from twin studies, concordance rates in MZ twins are never 100%, so the cause is unlikely to be only genetic.
• Reductionist explanation as it simplifies a complex disorder down to a single cause, eg gene(s).

Credit other relevant material.

<table>
<tr><th>Level</th><th>Description</th><th>Marks</th></tr>
<tr><td>2</td><td>The evaluation of genetics as an explanation for schizophrenia 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 evaluation of genetics as an explanation for schizophrenia 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>
</table>
</td><td>4
AO3 = 4</td></tr>
</table>

Question	Marking Guidance	Total Marks
09	**Discuss anti-psychotic drugs as a therapy for schizophrenia.** **Possible knowledge** • Drug therapy is based on the principle that schizophrenia is related to a biochemical (neurotransmitter) imbalance, which anti-psychotic drugs aim to redress. • Anti-psychotic drugs come in different forms: tablets, syrups or injections. • Typical anti-psychotic drugs (first-generation) primarily treat positive symptoms. They are based on the principle that schizophrenia is related to high levels of dopamine (hyperdopaminergia). • Typical anti-psychotic drugs (eg Chlorpromazine and Haloperidol) work by acting as antagonists in the dopamine system. They block dopamine (D2) receptors, preventing dopamine from binding. • Atypical anti-psychotic drugs (second-generation) treat both positive and negative symptoms. • Atypical anti-psychotic drugs (eg Clozapine and Risperidone) regulate levels of dopamine and serotonin. They bind to both dopamine and serotonin receptors on the post-synaptic neuron. **Possible discussion** • Side effects can cause high attrition rates, eg typical anti-psychotic drugs can cause problems such as confusion, weight gain, involuntary movement, so some people might stop taking them. • 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). • The fact that anti-psychotic drugs do work supports the dopamine hypothesis. • Not all people respond well to anti-psychotic drugs, they are more effective for some people compared to others, who would need alternative therapies. • Anti-psychotic drugs only treat the symptoms and do not offer a cure. Therefore, they must be taken regularly even when symptoms are not currently being experienced (dependency). • Anti-psychotic drugs are easily accessible and can be given in forms that best suit the person, eg injections for those who have memory problems. • Typical anti-psychotic drugs are relatively cheap but some of the newer atypical drugs are very expensive. • Comparison with other therapies. • Credit broader issues such as reductionism in relation to anti-psychotic drug therapy. Credit other relevant material.	**20** **AO1 = 8** **AO3 = 12**

Level	Description	Marks
4	Knowledge of anti-psychotic drugs as a therapy for schizophrenia is mostly accurate and generally well detailed. Discussion is mostly effective. 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 anti-psychotic drugs as a therapy for schizophrenia is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.	**11–15**
2	Limited knowledge of anti-psychotic drugs as a therapy for schizophrenia is present. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	**6–10**
1	Knowledge of anti-psychotic drugs as a therapy for schizophrenia is very limited. Discussion 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.	**1–5**
0	No creditable content.	**0**

Section C: Research Methods 2 **Total for this section: 30 marks**

	A psychologist wanted to investigate how new experiences affect a person's level of excitement. The psychologist was not aware of any previous research in this area. **The psychologist attended a major sporting event and asked people waiting inside the stadium if they would take part in a study. Each person who agreed was asked if they had attended a live sporting event before or not. They were then asked to rate their current level of excitement on a scale of 1–10, where 1 means 'not excited at all' and 10 means 'very excited'.**	

Question	Marking Guidance	Total Marks
10	**State the aim of this study.** Award **1 mark** for an accurate statement of the aim of this study. **Possible aim** • To investigate how new experiences/attending a live sporting event for the first time affect(s) excitement levels. • To see/investigate if there is a difference in excitement levels when the experience is new or not.	**1** **AO2 = 1**

Question	Marking Guidance	Total Marks
11	**Name the experimental method the psychologist is using in this study.** **1 mark** for stating natural experiment. **Note:** accept field experiment.	**1** **AO2 = 1**

Question	Marking Guidance	Total Marks
12	**Identify whether the psychologist should use a directional hypothesis or a non-directional hypothesis for this study. Explain your answer.** **Award marks as follows** **1 mark** for correctly identifying a non-directional hypothesis. **1 mark** for stating that the psychologist was not aware of any previous research in this area. Credit other relevant material.	**2** **AO2 = 2**

Question	Marking Guidance	Total Marks
13	**Write an appropriate hypothesis for this study.** **Award marks as follows** **3 marks** for an appropriate non-directional hypothesis with both the IV and DV operationalised. **2 marks** for an appropriate (non-)directional hypothesis that lacks clarity or where only the IV or DV is operationalised. **1 mark** for muddled (non-)directional hypothesis. **Note:** a maximum of 2 marks for a null or directional hypothesis where the IV and DV are operationalised. **Note:** no marks for a correlational hypothesis. **Possible content** There will be a (significant) difference in the ratings of excitement levels (on a scale of 1–10) between those who have not attended a live sporting event before and those who have attended a live sporting event before.	**3** **AO2 = 3**

	The results of this study can be seen in Table 1 below. **Table 1 Median excitement rating for those who had and had not attended a live sporting event before and the ranges for both groups**	

	Group 1 (had attended a live sporting event)	**Group 2 (had not attended a live sporting event)**
Median excitement rating	3.5	8
Range	6	2

Question	**Marking Guidance**	**Total Marks**
14	**Explain what the median and range values in Table 1 suggest about the effect of new experiences on excitement levels. Justify your answers.** **Award marks as follows** **Median:** **1 mark** people are more excited before new (sporting) experiences, compared to those who have experienced (sporting) events previously. **1 mark** the median excitement rating was much higher (8) for those who had not attended a live sporting event before compared to the median excitement rating of those who have attended a sporting event previously (3.5). **Range:** **1 mark** at least some people in group 1 (attended a sporting event before) were excited about the event, whilst other people in this group were less excited. However, those in group 2 (not attended a sporting event before) were all similarly excited about the event. **1 mark** the small range for group 2 (not attended a sporting event before) suggests their ratings were closely grouped around a rating of 8 (eg 6-8, 7-9, 8-10), whereas the high range for group 1 suggests more variability in excitement ratings (eg 1-7, 2-8, 3-9 and so on). Accept alternative wording.	**4** **AO2 = 4**

Question	**Marking Guidance**	**Total Marks**
15	**Identify the experimental design used by the psychologist in this study. Explain your answer.** **Award marks as follows** **1 mark** for correctly identifying independent groups' design. **1 mark** for stating that the participants were only in one group/condition – those that had attended a live sporting event before (group 1) and those who had not attended a live sporting event before (group 2).	**2** **AO2 = 2**

Question	Marking Guidance	Total Marks
16	**The psychologist wanted to analyse the results of the study using a statistical test.** **Briefly explain the purpose of statistical testing.** **Award marks as follows** **3 marks:** The explanation of the purpose of statistical testing is detailed. The answer is clear with appropriate use of specialist terminology. **2 marks:** The explanation of the purpose of statistical testing lacks detail. The answer lacks clarity in places. **1 mark:** The explanation of the purpose of statistical testing is briefly presented. The answer is very limited/vague/muddled. **Possible content** • Statistical tests provide a (mathematical) way of determining whether a psychologist's null hypothesis should be retained or rejected. • Statistical tests are used to inform psychologists whether the differences/relationships between variables are statistically significant or whether the results occurred by chance. • If results are significant, a psychologist will reject the null hypothesis and accept the alternative hypothesis. • Statistical testing can allow psychologists to draw appropriate conclusions about the results of their study. Credit other relevant material.	**3** **AO1 = 3**

Question	Marking Guidance	Total Marks
17	**Name an appropriate statistical test that the psychologist could use to analyse the data in this study. Explain three reasons for your choice in the context of this study.** **Award marks as follows** **1 mark** for Mann-Whitney. For **each** of the following award: **2 marks** for a clear and coherent reason explicitly linked to the study. **1 mark** for a limited reason implicitly linked to the study. • The psychologist is testing to see if there is a difference between participants who have attended a live sporting event before and those who have not. • The psychologist is using an independent group design as participants are either in the group who have attended a live sporting event before or the group that has not. • The data collected by the psychologist is treated as ordinal as it is a measurement of levels of excitement on a scale of 1–10/the rating is not a direct measurement of excitement. **Note:** appropriate reason can be credited even if an incorrect test is named or no test is given. **Note:** where more than three reasons are given, only the first three should be marked. **Note:** accept unrelated t-test if justification is given that the test is more powerful/robust than Mann-Whitney, or the data can be treated as interval.	**7** **AO2 = 7**

Question	Marking Guidance	Total Marks
18	**At the end of the study the psychologist produced a scientific report.** **Identify the correct order of the sections of a scientific report.** **Answer key** **B** - Abstract, introduction, method, results, discussion and referencing	**1** **AO1 = 1**

	The psychologist decided to conduct a follow-up study to investigate if there is a correlation between excitement ratings and the number of times a person has attended a live sporting event. **The psychologist attended another major sporting event and asked 10 people how many sporting events they had been to in the past 6 months.** **They were then asked to rate their current excitement level on a scale of 1–10, where 1 means 'not excited at all' and 10 means 'very excited'.**	

Question	Marking Guidance	Total Marks
19	**Identify the co-variables in this follow-up study.** Award **1 mark** for each co-variable identified. • Number of sporting events attended (in the past 6 months). • Excitement rating (on a scale of 1–10). Accept alternative wording.	**2** **AO2 = 2**

Question	Marking Guidance	Total Marks
20	**Explain one strength and one limitation of correlations in psychological research.** **Possible strengths** • Correlations can be a useful starting point for future study because once a researcher knows there is a relationship between two co-variables, it may suggest hypotheses for further experimental investigation. • Correlations allow us to investigate variables that would be impractical and/or unethical to do any other way (eg link between stress and illness). • Correlations allow researchers to clearly and easily identify if there is a relationship between variables, which can be clearly displayed in a graphical form. **Possible limitations** • Correlations only show that there is a relationship/link between the co-variables, they do not tell us why or how these co-variables are related. • A researcher cannot establish cause and effect from a correlation study as there may be multiple other factors (extraneous/'third' variables) that could be influencing the results. • The results of correlations can be significantly affected by sample sizes as the smaller the sample the less useful the results of the correlation will be. Credit other relevant material. **Note:** award a maximum of 3 marks if only a strength or limitation is presented.	**4** **AO3 = 4**

Level	Description	Marks
2	The explanation of one strength and one limitation of correlations is accurate with some detail. The answer is clear with appropriate use of specialist terminology.	**3–4**
1	The explanation of one strength and one limitation of correlations is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	**1–2**
0	No creditable content.	**0**

PS03 grid

	AO1	AO2	AO3	Total
Section A				
01		4		**4**
02.1	2			**2**
02.2	2			**2**
03	4			**4**
04			6	**6**
05	6		6	**12**
Section B				
06	2			**2**
07.1		2		**2**
07.2		2		**2**
08			4	**4**
09	8		12	**20**
Section C				
10		1		**1**
11		1		**1**
12		2		**2**
13		3		**3**
14		4		**4**
15		2		**2**
16	3			**3**
17		7		**7**
18	1			**1**
19		2		**2**
20			4	**4**
Unit total	**28**	**30**	**32**	**90**