INTERNATIONAL A-LEVEL

PSYCHOLOGY

PS03

Unit 3 Advanced Topics and Research Methods 2

Mark scheme

January 2021

Version: 1.0 Final Mark Scheme

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.

Further copies of this mark scheme are available from oxfordaqaexams.org.uk

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
01.1	**Use your knowledge of psychology to briefly explain why Anum is more likely to experience jet lag after working on the international flight rather than on the internal flight.** Award marks as follows: **2 marks** for a clear explanation with some detail **1 mark** for a limited/vague/muddled explanation **Possible content:** • On the international flight, Anum is travelling across multiple time zones whereas on the internal flight she is not travelling across any time zones. • There is a positive correlation between the severity of jet lag and the number of time zones crossed so Anum is more likely to suffer the effects of jet lag on the international flight. Credit other relevant explanation	**2** AO2 = 2

Question	Marking guidance	Total marks
01.2	**Anum tends to experience worse jet lag than other flight attendants on the same international flight. Identify and briefly explain one possible reason for this.** Award marks as follows: **1 mark** for correctly identifying one factor eg age, phase tolerance Plus **2 marks** for a clear explanation with some detail **1 mark** for a limited/vague/muddled explanation **Possible content:** • Research (eg Sack *et al.*, 2007) has shown that jet lag tends to decrease with age so, as Anum is only 20 years old and is fairly young, she may be more likely to suffer severe effects of jet lag than an older member of aircrew on the same international flight. • Another member of aircrew on the same international flight may be phase tolerant and more resistant to the effects of jet lag than Anum. Therefore, Anum would be more likely to suffer more severe effects of let lag. Credit other relevant explanation	**3** AO1 = 1 AO2 = 2

Question	Marking guidance	Total marks
01.3	**Use your knowledge of psychology to briefly explain one way that Anum might be able to reduce her jet lag.** Award marks as follows: **2 marks** for a clear explanation with some detail **1 mark** for a limited/vague/muddled explanation **Possible content:** • Anum should try to avoid sleep deprivation by ensuring she sleeps well before the flight. • Anum should avoid drinking caffeine and/or alcohol as these have been shown to make the effects of jet lag worse. • Anum should adjust to local zeitgebers when she arrives eg by staying awake if it is daytime. Credit other relevant explanation	**2** **AO2 = 2**

Question	Marking guidance	Total marks
02	**Briefly explain one limitation of restoration theory as a function of sleep.** Award marks as follows: **2 marks** for a clear explanation of a limitation with some detail **1 mark** for a limited/vague/muddled explanation **Possible content:** • Contradictory findings in relation to the effects of exercise on sleep eg Horne and Minard (1985) found that vigorous exercise does not always lead to longer sleep. • Issues with supporting research eg use of case studies, lack of control, use of non-human animals, etc • Reductionist as only focuses upon the physiological processes of sleep. Credit other relevant limitations	**2** **AO3 = 2**

Question	Marking guidance	Total marks
03	**Describe and evaluate research studies into the sleep/wake cycle.**	9
	Possible description:	**AO1 = 5**
	• Siffre (1975) spent six months underground with no natural light and found that his days became longer and his sleep/wake cycle extended to between 25 and 32 hours. Siffre's sleep-wake cycle also became desynchronised with his body temperature circadian rhythm.	**AO3 = 4**
	• Stephan and Zucker (1972) damaged the SCN in rats which caused them to be more active during the dark and thus disrupted their sleep/wake cycle.	
	• Abraham, Gwinner and Van't Hof (2000) injected sparrows with melatonin which induced sleep.	
	Credit other relevant description	
	Possible evaluation:	
	• Use of supporting evidence eg Siffre – Aschoff (1965) found the sleep/wake cycle of students kept underground also extended to between 25 and 27 hours; Stephan and Zucker (1972) – Zucker, Boshes and Dark (1983) found similar effects of damaging the SCN in ground squirrels.	
	• Methodological issues eg Siffre – use of case study, lack of control; Stephan and Zucker – confounding variables such as severity of the operation, use of non-human animals.	
	• Implications of research eg usefulness such as in helping to combat insomnia.	
	• Ethical issues eg Siffre – reported feelings of depression, suicidal thoughts and memory problems during the study and long-lasting psychological problems after the study. Stephan and Zucker – suffering and death of non-human animals.	
	Credit other relevant evaluation	

Level	Descriptor	Marks
3	Knowledge of research studies into the sleep/wake cycle is mostly accurate and generally well detailed. Evaluation is mostly effective. The answer is clear and organised. Specialist terminology is mostly used effectively.	7–9
2	Knowledge of research studies into the sleep/wake cycle is evident but with some inaccuracies/omissions. Evaluation is evident but lacks effectiveness in places. The answer lacks clarity and organisation in places. Specialist terminology is mostly used appropriately.	4–6
1	Knowledge of research studies into the sleep/wake cycle is limited. Evaluation is limited, poorly focused or absent. The answer lacks clarity and is poorly organised.	1–3

		Specialist terminology is either absent or inappropriately used.		
	0	No creditable content.	**0**	

Question	Marking guidance	Total marks
04	**Describe and evaluate the role of personality factors and genetics in insomnia.** **Possible description:** • Anxiety is associated with high levels of physiological arousal which acts against sleep so individual with anxious personalities are more likely to suffer from insomnia. • Schizophrenia and depression, which are both believed to have a significant genetic component, are associated with insomnia. • Whether you are more alert in the morning or evening is genetic and controlled by 'clock genes' (Chronotype). • Chronotype is based on the biological circadian rhythm and morning types are roughly two hours ahead of evening types. • Insomnia may reflect an inherited vulnerability in sleep mechanisms triggered by high arousal. Credit other relevant description **Possible evaluation:** • Use of supporting evidence – for anxiety eg Vahtera *et al.* (2007), Gregory *et al.* (2006), Heath et al. (1998); for association with mental illness eg Morin *et al.* (1999); for chronotypes eg Kerkhof and Van Dongen (1996), Van Dongen *et al*. (2005). • Use of therapies such as CBT which reduce arousal and anxiety levels are effective in helping insomnia. • Twin studies have shown evidence for a genetic component to insomnia eg Bastian and Morin (2000), Watson *et al.* (2006). • Oversimplistic – evidence has shown the environmental factors also play a role in insomnia eg Riemann *et al.* (2010). • Methodological issues with some research – small samples, correlational research etc. • Lack of understanding – Although we have identified several 'clock genes' we do not understand how these function to control chronotype and thus influence insomnia. Credit other relevant evaluation	**12** **AO1 = 6** **AO3 = 6**

Level	Descriptor	Marks
4	Knowledge of the role of personality factors and genetics in insomnia is mostly accurate and generally well detailed. Evaluation is mostly effective. Minor detail and/or expansion of argument is sometimes	10–12

		lacking. The answer is clear and focused. Specialist terminology is mostly used effectively.	
	3	Knowledge of the role of personality factors and genetics in insomnia is evident but there are occasional inaccuracies/omissions. There is some effective evaluation. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is mostly used appropriately.	**7–9**
	2	Limited knowledge of the role of personality factors and genetics in insomnia is present. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	**4–6**
	1	Knowledge of the role of personality factors and genetics in insomnia 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.	**1–3**
	0	No creditable content.	**0**

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

Question	Marking guidance	Total marks
05	**Explain how gender bias might reduce the reliability in the diagnosis of schizophrenia.** **Possible content:** • Practitioners may be less likely to diagnose females with schizophrenia as they are better at masking the symptoms. This would result in underdiagnosis of females and thus an unreliable diagnosis of schizophrenia based on gender rather than symptoms. • Females tend to have better functioning, including cognitive and social capabilities, than males and thus may be better at masking the symptoms of schizophrenia, so this would result in an unreliable diagnosis. Credit other relevant explanation <table><tr><th>Level</th><th>Descriptor</th><th>Marks</th></tr><tr><td>3</td><td>Explanation is detailed and appropriate. The answer is clear with appropriate use of terminology.</td><td>3</td></tr><tr><td>2</td><td>Explanation is relevant but detail is lacking. The answer lacks clarity in places.</td><td>2</td></tr><tr><td>1</td><td>Explanation is limited. The answer is vague/muddled.</td><td>1</td></tr><tr><td>0</td><td>No creditable content.</td><td>0</td></tr></table>	3 AO3 = 3

Question	Marking guidance	Total marks
06.1	**Describe the dopamine hypothesis as an explanation for schizophrenia.** **Possible content:** • The original dopamine hypothesis suggested that high levels or excess activity of dopamine in the subcortex was associated with the development of schizophrenic symptoms. • More recent dopamine theories suggest that reduced dopamine in frontal parts of the brain such as the prefrontal cortex might be causing negative symptoms (hypodopaminergia) whilst increased dopamine in other areas might be responsible for the positive symptoms (hyperdopaminergia) Credit other relevant description	**4** **AO1 = 4**

Level	Description	Marks
2	The dopamine hypothesis is described in some detail. The answer is clear with appropriate use of terminology.	3–4
1	Description of the dopamine hypothesis is limited, vague or muddled. The answer lacks clarity.	1–2
0	No creditable content.	0

Question	Marking guidance	Total marks
06.2	**Explain one strength of the dopamine hypothesis as an explanation for schizophrenia.** **Possible content:** • Implications for treatment, eg the dopamine hypothesis has allowed further development of antipsychotic drugs which reduce dopamine (activity) and help to alleviate symptoms. • Use of supporting evidence from a variety of sources – post-mortems (Iverson, 1979), amphetamine studies (Curran *et al,* 2004), antipsychotic drug studies (Tauscher *et al,* 2014), brain psychology studies (Davis *et al,* 1991) etc Credit other relevant strengths	**3** **AO3 = 3**

Level	Descriptor	Marks
3	Strength is detailed and appropriate. The answer is clear with appropriate use of terminology.	3
2	Strength is relevant but detail is lacking. The answer lacks clarity in places.	2

1	Strength is limited. The answer is vague/muddled.	1
0	No creditable content.	0

Question	Marking guidance	Total marks
07	**Describe and evaluate the use of cognitive therapy as a therapy for schizophrenia.** **Possible description:** • Cognitive therapy including CBT can be used to help reduce the symptoms of schizophrenia and help to reduce the severity of psychotic episodes. • Identifying delusional beliefs. • Challenging beliefs and reality testing to reduce distress. • CBT can be used to help overcome delusional thinking. • Use of positive self-talk. • Coping strategy enhancement through education and symptom targeting. • Cognitive restructuring via ABCDE framework. Identifying activating event (A), exploring beliefs (B), recognising consequences (C), disputing irrational beliefs (D) and restructured belief (E). Credit other relevant description **Possible evaluation:** • Use of supporting evidence eg Morrison *et al.* (2014) Drury *et al.* (1996) etc • CBT requires self-awareness and willingness to engage with process which some schizophrenics lack. • Not all clients are suited to vigorous confrontation. • Not effective in treating all schizophrenic symptoms and so not effective for all schizophrenic patients. • Requires a course of sessions which may lead to drop out especially at times of severe psychotic episodes. • May not actually treat the symptoms of schizophrenia but teach patients strategies for dealing with symptoms (Trower et al, 2004) • CBT has been criticised for attempting to control patients' thoughts which may interfere with an individual's freedom of thought. • Comparison with other therapies eg side effects Credit other relevant evaluation	**20** **AO1 = 8** **AO3 = 12**

Level	Descriptor	Marks
4	Knowledge of cognitive therapy is mostly accurate and generally well detailed. Evaluation is mostly effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear and focused. Specialist terminology is mostly used effectively.	**16–20**

	3	Knowledge of cognitive therapy is evident but there are occasional inaccuracies/omissions. There is some effective evaluation. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is mostly used appropriately.	11–15	
	2	Limited knowledge of cognitive therapy is present. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	6–10	
	1	Knowledge of cognitive therapy 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.	1–5	
	0	No creditable content.	0	

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

Question	Marking guidance	Total marks
08	**Write a suitable hypothesis for this study.**	**3**
	Possible content:	**AO2 = 3**
	• There is a (positive/negative) correlation between aggression score on a 10-point scale and number of hours watching television.	
	Credit null version	
	Statements, questions and hypotheses referring to differences should get no marks.	

Level	Descriptor	Marks
3	For an appropriate correlational hypothesis with both the co-variables operationalised	3
2	For an appropriate correlational hypothesis that lacks clarity or where only one co-variable is operationalised	2
1	For a muddled correlational hypothesis	1
0	No creditable content.	0

Question	Marking guidance	Total marks
09	**Explain why a correlation is a more appropriate method than an experiment for the researcher to use in this case.** **Possible content:** • It would be unethical to manipulate level of aggression to investigate cause and effect as this could lead to harm. • It may not be possible to manipulate level of aggression to investigate cause and effect as people respond differently to stimuli designed to evoke aggression. • It may not be possible to manipulate the number of hours watching television as this could be very time consuming and impractical. • The researcher may discover a link between aggression and time spent watching television which might suggest future research ideas. Credit other relevant explanation	3 AO2 = 3

Level	Descriptor	Marks
3	Explanation is detailed and appropriate. The answer is clear with appropriate use of terminology.	3
2	Explanation is relevant but detail is lacking. The answer lacks clarity in places.	2
1	Explanation is limited. The answer is vague/muddled.	1
0	No creditable content.	0

Question	Marking guidance	Total marks
10.1	**Use the data in Table 1 to calculate the median aggression score for participant 1. Show your workings.** **2 marks** for a correct answer = 4 **1 mark** for incorrect or absent answer but correct workings eg 1,2,3,4,6,6,10	**2** **AO2 = 2**

Question	Marking guidance	Total marks
10.2	**Use the data in Table 1 to calculate the range of the number of hours watching television for participant 1. Show your workings.** **2 marks** for a correct answer = 10 **1 mark** for incorrect or absent answer but correct workings eg 9 - 0 + 1 OR **2 marks** for a correct answer = 9 **1 mark** for incorrect or absent answer but correct workings eg 9 - 0	**2** **AO2 = 2**

Question	Marking guidance	Total marks
11	**Explain one reason why it is more appropriate to use the range rather than the standard deviation as a measure of dispersion for the number of hours spent watching television.** **Possible content:** • The number of hours spent watching television are only estimates of whole hours and not precise values. • The standard deviation uses every piece of data and requires precise values so it would not be appropriate to use it to measure the dispersion of the number of hours spent watching television. • The range only uses the days which recorded the highest and lowest number of hours spent watching television so only provides an estimate of dispersion and therefore does not require precise values. Credit other relevant explanation	3 AO2 = 3

Level	Descriptor	Marks
3	Explanation is detailed and appropriate. The answer is clear with appropriate use of terminology.	3
2	Explanation is relevant but detail is lacking. The answer lacks clarity in places.	2
1	Explanation is limited. The answer is vague/muddled.	1
0	No creditable content.	0

Question	Marking guidance	Total marks
12	**Explain what having a positive correlation means in relation to this study.** Award marks as follows: **2 marks** for a clear explanation with some detail related to the study **1 mark** for a limited/vague/muddled explanation related to the study **Possible content:** • When the median number of hours spent watching television increases, the median aggression score increases / the more hours spent watching television, the greater the aggression score.	2 AO2 = 2

Question	Marking guidance	Total marks
13	**The researcher then used a statistical test on her results.** **Explain the purpose of statistical testing.** **Possible content:** • To be confident that the result is significant/not down to chance (or vice versa). • To be able to draw sound conclusions about the results of a study. • To be able to infer something about what the data means. • To be able to make generalisations about the population from which the sample was drawn. There is no need to contextualise the answer to the study.	3 AO1 = 3

Level	Descriptor	Marks
3	Explanation is detailed and appropriate. The answer is clear with appropriate use of terminology.	3
2	Explanation is relevant but detail is lacking. The answer lacks clarity in places.	2
1	Explanation is limited. The answer is vague/muddled.	1
0	No creditable content.	0

Question	Marking guidance	Total marks

14	**With reference to level of measurement, explain why using Spearman's rho test would be suitable to analyse the results of this study.**
	
	1 mark for reference to ordinal level data
	
	• the aggression scores should be treated as ordinal data
	  OR
	• the number of hours spent watching television should be treated as ordinal data
	
	Plus
	
	1 mark for explaining why the data should be treated as ordinal
	
	• we cannot be sure the intervals between each aggression score are equal
	  OR
	• the number of hours spent watching television is a personal estimate and not a precise measurement of time.
		2
		
		AO2 = 2

Question	Marking guidance	Total marks
15	**When reporting the study, the researcher wrote an abstract. Which one of the following would not be typically found in an abstract?** Answer = C (Evaluation)	1 AO1 = 1

Question	Marking guidance	Total marks
16	**The researcher found a well-respected questionnaire that measured aggression. She decided to give this to the participants in her original study as an additional measure of aggression.** **Explain how the researcher could use a correlation with both measures of aggression to assess the concurrent validity of the aggression scores from the participant's diaries.** **Possible content:** • The researcher could correlate/compare the two sets of aggression scores for each participant (calculate the correlation coefficient between the two sets of aggression scores). • This would tell her the strength and direction of the relationship between the two sets of aggression scores. • If the calculated correlation coefficient was greater than +0.8 then this would indicate that the diary aggression scores had a high level of concurrent validity.	4 AO2 = 4

- Participants who score highly on the diary measure should also score highly on the questionnaire measure or vice versa. This would indicate concurrent validity.

Level	Description	Marks
2	Explanation is appropriate and in some detail. The answer is clear with appropriate use of terminology.	3–4
1	Explanation is limited, vague or muddled. The answer lacks clarity.	1–2
0	No creditable content.	0

Question	Marking guidance	Total marks
17	**The researcher found that one participant had a very high median aggression score and a very low median number of hours spent watching television.** **Explain how the researcher could use a case study to investigate this finding further.** **Possible content:** - The researcher could invite the participant to take part in a detailed study which collected large amounts of qualitative data over a period of time. - She could gather further information on aggression and television habits of the participant using a variety of methods to learn more about the relationship. - She could interview the participant and gather additional data on when during the day they watched television and the types of programmes watched. - She could conduct an observation of the participant's behaviour and gather additional data on the number and types of aggressive acts the participant demonstrated. Credit other relevant material.	3 AO2 = 3

Level	Descriptor	Marks
3	Explanation is detailed and appropriate. The answer is clear with appropriate use of terminology.	3
2	Explanation is relevant but detail is lacking. The answer lacks clarity in places.	2
1	Explanation is limited. The answer is vague/muddled.	1
0	No creditable content.	0

Question	Marking guidance	Total marks
18	**Briefly explain one limitation of the use of case studies in psychology.** Award marks as follows: **2 marks** for a clear limitation with some detail **1 mark** for a limited/vague/muddled limitation **Possible content:** • Cannot be replicated due to their individual nature so cannot be tested for reliability/lack scientific rigour. • The researcher can become over-involved in the study and lose objectivity. • Problems with generalisation. Credit other relevant limitations	**2** **AO3 = 2**

PS03 grid

	AO1	AO2	AO3	Total
Section A				
01.1		2		**2**
01.2	1	2		**3**
01.3		2		**2**
02			2	**2**
03	5		4	**9**
04	6		6	**12**
Section B				
05			3	**3**
06.1	4			**4**
06.2			3	**3**
07	8		12	**20**
Section C				
08		3		**3**
09		3		**3**
10.1		2		**2**
10.2		2		**2**
11		3		**3**
12		2		**2**
13	3			**3**
14		2		**2**
15	1			**1**
16		4		**4**
17		3		**3**
18			2	**2**
Unit total	**28**	**30**	**32**	**90**