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AS Psychology

Sample Assessment Materials

Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology (8PS0)

First teaching from September 2015

First certification from 2016

Issue 2

Pearson

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Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology (8PS0)

Sample Assessment Materials

First certification 2016

Pearson

Edexcel, BTEC and LCCI qualifications

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Summary of Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology SAMs Issue 2 changes

Summary of changes made between previous issue and this current issue	Page number
8PS0/01 Paper 1 and 8PS0/02 Paper 2 common	
Amended to ensure that shows Spearman's rank equation and standard deviation equation. Critical values have been updated.	6, 50
Chi-squared distribution formula – statement at the bottom changed to 'The calculated value must be equal to or exceed the critical value in this table for significance to be shown.'	7, 51
Critical values for the Mann-Whitney U test have been updated.	8–10, 52–54
8PS0/01 Paper 1 specific	
Question 2aiii been corrected to read 'The researcher collected 20 responses to this questionnaire.	13
Question 2b – AO has been corrected to read AO1 (1 mark).	28
Question 5 – AO1 indicative content been amended slightly.	33
8PS0/02 Paper 2 specific	
Question 10 level-based mark grid replaced.	92

If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

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All information in this document is correct at the time of publication.

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Contents

Introduction

The Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology is designed for use in schools and colleges. It is part of a suite of GCE qualifications offered by Pearson.

These sample assessment materials have been developed to support this qualification and will be used as the benchmark to develop the assessment students will take.

General marking guidance

- All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark scheme – not according to their perception of where the grade boundaries may lie.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification/indicative content will not be exhaustive.
- In a levels-based mark scheme there are two distinct parts – the indicative content and the levels descriptors:
    - Indicative content is exactly that – they are factual points that candidates are likely to use to construct their answer. It is possible for an answer to be constructed without mentioning some or all of these points, as long as they provide alternative responses to the indicative content that fulfils the requirements of the question. It is the examiner's responsibility to apply their professional judgement to the candidate's response in determining if the answer fulfils the requirements of the question.
    - The mark grid identifies which assessment objective is being targeted by each bullet point within the level descriptors, and describes the ways in which they will be evidenced across the ability range.
- When deciding how to reward an answer using a levels based mark scheme, a 'best fit' approach should be used:
    - Examiners should first decide which descriptor most closely matches the candidate answer and place it in that band.
    - The mark awarded within the band according to each of the assessment objectives will be decided according to how securely all bullet points are displayed at that level.
    - In cases of uneven performance, this will still apply. Candidates will be placed in the band that best describes their answer, and they will be awarded marks towards the top or bottom of that band depending how securely they have evidenced bullet points in that, or other descriptors.
- Detailed guidance how to apply all mark schemes, with exemplars for this unit, will be given at standardisation.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, a team leader must be consulted before a mark is given.
- Crossed-out work should be marked **unless** the candidate has replaced it with an alternative response.

Write your name here

Surname	Other names

Pearson Edexcel
Level 3 GCE

Centre Number	Candidate Number

Psychology

Advanced Subsidiary
Paper 1: Social and Cognitive Psychology

Sample assessment materials for first teaching September 2015
Time: 1 hour 30 minutes

Paper Reference
8PS0/01

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- The list of formulae and critical value tables are printed at the start of this paper.
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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1/1/1/1/1

S 4 7 5 3 5 A 0 1 2 0

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FORMULAE AND CRITICAL VALUE TABLES

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1-\frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

	N_b															
	5	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
N_a																
***p* ≤ 0.05 (one-tailed), *p* ≤ 0.10 (two-tailed)**																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

N_a	N_b = 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.01$ (one-tailed), $p \leq 0.02$ (two-tailed)																
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
18	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
19	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114

N_a	N_b = 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.025$ (one-tailed), $p \leq 0.05$ (two-tailed)																
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
17	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
18	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
20	20	27	34	41	48	55	62	69	76	83	90	98	105	112	119	127

N_a	N_b = 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.005$ (one-tailed), $p \leq 0.01$ (two-tailed)																
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1
  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
n	0.1	0.05	0.02
N=5	0	-	-
6	2	0	-
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Answer ALL questions.

SECTION A: SOCIAL PSYCHOLOGY

1 Emma was driving to work and stopped at a set of traffic lights.
A police officer opened her car door and demanded that she get out so that he could use her car.

(a) From your understanding of the psychology of obedience, identify **two** features of this situation that could lead to Emma being obedient.

(2)

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.....

(b) Emma refused to get out of her car and did not obey the police officer's demands.

Explain **one** factor, using psychology of obedience, that might account for Emma's behaviour.

(2)

.....

.....

.....

.....

(Total for Question 1 = 4 marks)

2 A researcher would like to investigate older people's perceptions of teenagers. She decides to use a questionnaire to find out their views. For the questionnaire, she uses a sample of participants from an adult education centre.

(a) (i) Write **two** closed questions that could be used in the questionnaire to investigate older people's perceptions of teenagers.

(2)

.....

.....

.....

.....

(ii) The data gathered from the researcher's questionnaire is quantitative. Define the term 'quantitative data'.

(1)

.....

.....

(iii) The researcher collected 20 responses to this questionnaire.

Describe **one** way that you would carry out an analysis on this data.

(2)

.....

.....

.....

.....

(b) Explain how **one** research method, other than using a questionnaire, could be used to study prejudice.

(3)

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(Total for Question 2 = 8 marks)

3 Sherif et al. (1954/1961) conducted research called The Robbers Cave Experiment.

(a) State **two** ways in which conflict was created between the groups of boys in the experiment.

(2)

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.....

(b) Using your knowledge of Sherif's research, explain **one** way to reduce prejudice in schools that are experiencing conflict between groups of students.

(3)

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(Total for Question 3 = 5 marks)

4 Psychologists used a questionnaire to investigate whether the attitudes of local people towards newcomers (non-locals) were positive or negative. They found the following results:

Participant	Mean number of positive attitudes (out of 10)	Mean number of negative attitudes (out of 10)
A	3	6
B	5	8
C	1	5
D	1	4
E	5	4
F	5	8
G	1	4
H	3	8
I	5	8
J	6	6
Mean ratings of attitudes of local people towards newcomers	3.5	6.1
Mode ratings of attitudes of local people towards newcomers		

Table 1

(a) (i) Complete the table above to show the modes from the data in **Table 1**.

(1)

(ii) Give **one** reason why the mode is not the most useful measure of central tendency when analysing this data.

(1)

.....

.....

(b) Another descriptive statistic for this data is dispersion. There are two measures of dispersion, range and standard deviation.

Explain which measure of dispersion is best for this data.

(2)

.....

.....

.....

.....

(Total for Question 4 = 4 marks)

5 Evaluate **one** contemporary study that has been used to explain human social behaviour.

(8)

(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 29 MARKS

SECTION B: COGNITIVE PSYCHOLOGY

6 Define the terms 'encoding' and 'capacity' as they are used in cognitive psychology.

Encoding

.....

.....

Capacity

.....

.....

(Total for Question 6 = 2 marks)

7 Barbara was investigating people's memory in a school classroom. Barbara placed in the classroom everyday classroom objects, such as books, and objects that would not normally be found in a classroom, such as a teapot. She invited participants to look around the classroom and later recall as many objects as they could. She chose to give participants a list of objects so that they could tick the objects they remembered. **Table 2** summarises her results.

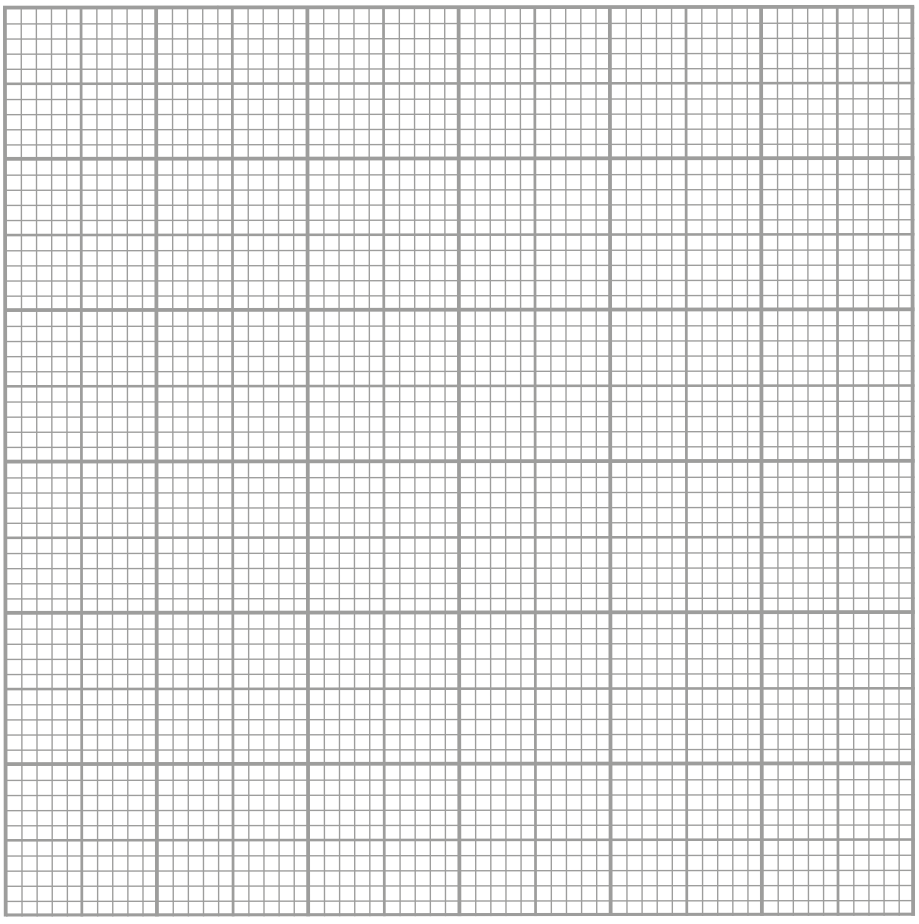
	Everyday classroom objects	**Objects not normally found in a classroom**
Mean number of objects recalled	20	5

Table 2

(a) Draw an appropriate graph to represent Barbara's results.

(3)

Title: .....



(b) Analyse Barbara's results to show if they support a prediction that could be made using the theory of reconstructive memory.

(3)

(c) Explain **one** way in which Barbara could have improved this investigation.

(2)

(Total for Question 7 = 8 marks)

8 Rashine found it difficult to revise while listening to music. Rashine's teacher said that the working memory model could explain this.

Explain, using the working memory model, why Rashine found it difficult to revise while listening to music.

(Total for Question 8 = 3 marks)

9 Henry Molaison (HM) suffered memory loss following a surgical procedure that left him with brain damage.

(a) Explain **two** ways in which the case of Henry Molaison (HM) contributes to our understanding of memory.

(4)

(b) Explain **one** strength and **one** weakness of using case studies of brain-damaged patients to inform our understanding of how memory works.

(4)

Strength

Weakness

(Total for Question 9 = 8 marks)

10 Mr Williams is in his early 70s and has lived alone since his wife died two years ago. Recently he has been having problems remembering if he has taken his medication. He repeatedly asks people what day it is and remembers the answer only briefly. He recognises his children but forgets that he has a new grandson who is two weeks old. The multi-store model of memory (Atkinson and Shiffrin 1968) has been used in practical applications to help people with memory loss.

Discuss the multi-store model of memory in terms of Mr Williams's ability to cope with everyday life.

(8)

(Total for Question 10 = 8 marks)

TOTAL FOR SECTION B = 29 MARKS

SECTION C

11 The laboratory experiment is used as a research method in cognitive psychology and social psychology.

Evaluate the use of the laboratory experiment in terms of its validity as a research method in comparison to the use of questionnaires.

(12)

.....

.....

(Total for Question 11 = 12 marks)

TOTAL FOR SECTION C = 12 MARKS
TOTAL FOR PAPER = 70 MARKS

AS Psychology Paper 1 Mark Scheme

Question Number	Answer	Mark
1(a)	**AO2 (2 marks)** One mark for each feature identified up to a maximum of two marks. • Legitimate authority of the police officer (1) • Proximity of the police officer was immediate (1) • Uniform of the police officer (1) • Lack of support if Emma is on her own (1) **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
1(b)	**AO2 (1 mark), AO3 (1 mark)** One mark for identifying a factor (AO2). One mark for an explanation of that factor (AO3). For example: • Perceived level of authority (1) as he may not have been in uniform, so she questioned his authority (1). OR • Her own views are important to her, and she is less affected by others (1) so may not have complied with the authority figure (1). OR • Individual differences in Emma's personality (1) may have led her to obey less than someone with a different personality might have done (1). • Emma was in an autonomous state (1) and took responsibility for her own behaviour (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
2(a)(i)	**AO2 (2 mark)** One mark for a feasible closed question. Ignore open questions; accept any type of closed question, including ranked scale/rating scale. Must be linked to gauging the perceptions of teenagers. For example: 1) Do you find teenagers easy to get along with? (closed ended; yes/no) (1) 2) On a scale of 1–5 (where 5 is very friendly and 1 is not friendly), how friendly would you rate teenagers? (1) 3) Place the following statements in order of your agreement with each: - I want to spend a lot of time with teenagers. - I do not want to spend any time with teenagers. - I would not mind spending more time with teenagers (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
2(a)(ii)	**AO1 (1 mark)** One mark for stating that quantitative means gathering numerical data.	**(1)**

Question Number	Answer	Mark
2(a)(iii)	**AO2 (2 marks)** One mark for identifying an appropriate analysis technique and one mark for how it would be used. No marks if the answer does not match either the question type (closed) or the data type stated (quantitative). For example: Quantitative data • Count the number of no/yes/scale responses (1) and add up the totals to see if there are any trends (1). • Use measures of central tendency/total/measures of dispersion (1) to analyse frequency/average/spread (1). • Use a statistical test (1) to analyse the significance of the results (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
2(b)	**AO1 (1 mark), AO3 (2 marks)** One mark for identifying an appropriate research method (AO1). Two marks for justifying the chosen research method, to show how it would link to research into prejudice (AO3). Accept interview, experiment (field, lab), observation, case study, correlation (if data are not gathered by questionnaire), content analysis, meta-analysis. To gain marks each point suggested must be ethical. For example, interview (accept structured interview, unstructured, semi-structured): • An interview would allow participants to talk about their opinions and beliefs about prejudice (1). • The researcher would acquire rich, in depth data about participants' prejudiced or non-prejudiced attitudes to others (1). • Unstructured interview would allow respondents more freedom of response, so data would be more valid than using a questionnaire (1). For example, case study: • One individual could be studied over a period of time using a case study to record their behaviour towards and thoughts about others (1). • The researcher could choose an individual with a role where they interact with different cultures, so might be in a position to discriminate or show prejudice (1). • And record their responses (thoughts and behaviour) to situations where prejudice might occur, so data would be more valid and relevant than using a questionnaire /A case study like this would be hard to replicate as the individual is unique and the situation is unique, so there might be a lack of reliability unlike using a questionnaire (1).	**(3)**

Question Number	Answer	Mark
2(b) cont.	For example, content analysis: • One or more newspapers could be content analysed, over a set period of time, to focus on prejudiced attitudes (1). • The researcher could use a highlighter pen, reading the whole newspaper(s) to spot any mentions of discrimination or prejudice such as adjectives or situations (1). • And then sort them into categories such as 'non-prejudiced' and 'prejudiced', an ethical idea as no participants are used, unlike using a questionnaire (1). **Look for other reasonable marking points.**	

Question Number	Answer	Mark
3(a)	**AO1 (2 marks)** One mark for each of two ways Sherif et al. used to create conflict, up to 2 marks. • Competitive games between the groups (1) • Differential rewards (1) • Competition for trophies (1) • Tug of war (1) • Baseball game (1) • Medals awarded (1) • Tent pitching (1) • Swimming gala (1) • Pocket knife prize (1) **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
3(b)	**AO2 (1 mark), AO3 (2 marks)** One mark for suggesting a way to reduce prejudice (1 AO2). Two marks for justification of it (2 AO3). For example: **Cooperation** • Introduce cooperative activities for students to carry out so that there is a goal they have to work together to achieve/so that there is a superordinate goal (1). • The students could be asked to work together as a team to pick up litter around the school/to tidy up when their school is being judged for a 'tidiest in the county' award (1). • Sherif et al.'s research shows that when boys cooperated to achieve a common goal there was less conflict, so the students should start to work together and conflict will be reduced as desired (1). OR **Equal status contact** • Make sure that students are treated equally/level playing field, so that when they meet up they see each other as equal (1). • Do not encourage a hierarchy, such as prefects and non-prefects (1). • Introduce uniforms and standard equipment that all students have to wear and use so that they are all equal and see themselves as equal. Then they would accept others from different groups from themselves – when the students see themselves as equal they will be in the same state as the boys when co-operating together (1). OR **Decategorisation** • Form the students into one group on the basis of belonging to the school and decategorise (1). • This means encouraging them to see themselves as all being in one group as part of the school and not as separate groups (1). • This should achieve the same reduction of prejudice as aiming for superordinate/shared goals achieved in the Sherif et al. study (1). **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
4(a)(i)	**AO2 (1 mark)** One mark for identifying the modes for the data subset. 5 AND 8	**(1)**

Question Number	Answer	Mark
4(a)(ii)	**AO2 (1 mark)** One mark for correct reason. Because this small data sample will not give a valid value.	**(1)**

Question Number	Answer	Mark
4(b)	**AO3 (2 marks)** An explanation that makes reference to the following two points. • Standard deviation is best because it takes account of all the figures. • Therefore the outliers have less of an effect on the dispersion. **Look for other reasonable marking points.**	**(2)**

Question Number	Indicative content	Mark
5	**AO1 (4 marks), AO3 (4 marks)** Credit any contemporary study used in research on social behaviour Three contemporary studies are given in the specification that could be used in this answer, and such comments as follows could be given: **Burger (2009)** **AO1** • Was investigating obedience. • Replicated Milgram's procedure using electric shocks with confederate and learners. • Designed his experiment so his participants went up to just 150 volts. • Participants had verbal prods and did not know that the 'victim' was a confederate. They also did not know that the shocks were not real. • Used artificial tasks. • Had a sample of 70 participants (29 men, 41 women). • Used a volunteer sample. • Was designed to investigate the situational effect vs personality effects. • Was constrained by ethics. • Deceived his participants in terms of the role of the confederates and the shocks not being real. **AO3** • Based on previous well known research so has previous data to use for comparisons. • Supported Milgram's work by showing that situational effects were significant but also showed that there are personality differences in social influence behaviour. • Lab conditions meant ecological validity was an issue but also meant controlled conditions were used so internal validity improved. • Also artificiality of tasks means mundane validity is an issue and so the extent to which the findings can be applied to everyday understanding of human behaviour is limited. • Ethically deception is an issue but required for successful/valid outcome.	**(8)**

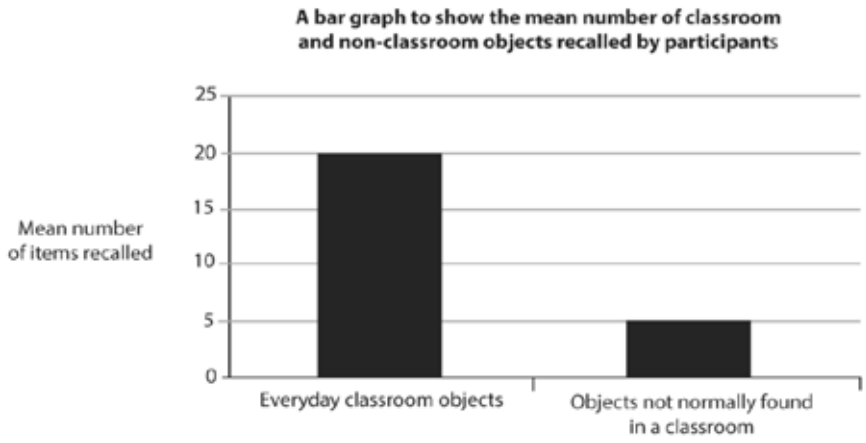
Question Number	Indicative content	Mark
5 cont.	• Only using 150 volts makes the study less traumatic for participants but maybe did not test obedience as well as Milgram had done. • Sample was limited and volunteers might suffer bias from self-selection issues i.e. types of participants might be skewed and small sample might not be representative of general public. • However 80 is considered an appropriate number for this type of study for a medium sized effect to be significant. **Credit any other reasonable comment on the quality of study** **Reicher and Haslam (2006)** **AO1** • Reicher and Haslam (2006) set up a study with the BBC as an experiment that would be televised. • Was looking at situational explanations of conformity and obedience. • They allocated participants to one of two groups, prisoners and guards, and set up a mock prison. • Their aim was to see if there would be in-group and out-group behaviour. • The looked at how this would affect the levels of conformity and obedience. • To see what the effect of the role would be on the behaviour. **AO3** • They found that prisoners did become an in-group in the end, but the guards resisted this influence. • They showed that authority alone cannot predict tyranny. • Because the prisoners did conform to their role, they proposed that it might be weakness that allows tyranny to rule. • The two groups were arbitrarily created, so this removes bias in allocation. • But certain types of personalities of people might have been included in the groups by chance, and so the situational influence might not be the only explanation for the level of obedience and/or conformity.	

Question Number	Indicative content	Mark
5 cont.	• Reicher and Haslam's situational manipulation was artificial, and so the measurement of level of conformity has less ecological validity. • Reicher and Haslam included an element of authority within the groupings and so might not only be measuring situational influence. • The effect on the participants of being observed might have been that they were role playing and not behaving naturally. • The promotion of prisoners to guards made the study less realistic and so compromises mundane validity. **Credit any other reasonable comment on the quality of study** **Cohrs et al. (2012)** **AO1** • Cohrs et al. (2012) carried out a study looking at personality and prejudice including social dominance and authoritarian personality and prejudice. • Their study was carried out in Germany. • It was a correlational piece of research. • They found that personality did link to prejudice. • They also looked at whether peer-report data would match self-report data as they commented that studies into prejudice, like theirs, tended to use just self-report data. • They found that self-report data did match peer-report data. **AO3** • The study could explain the prejudice effects based on individual personalities of the participants as opposed to situational effects. • The study focused on personality effects and so produced an in depth level of data on this aspect of prejudice. • They found that the effects of personality on prejudice are mediated by Right wing Authoritarianism and Social Dominance Orientation. • Using qualitative methods introduces subjectivity. • But comparing two techniques of self-report and peer reports introduces a check on this subjectivity and found agreement between the two techniques.	

Question Number	Indicative content	Mark
5 cont.	• However, the applicability of the research to understanding human social behaviour is limited as the research is only correlational. • The study was conducted on only one culture, so population validity is an issue. It was conducted only in Germany, although by using a large sample the historical nature of the culture could have resulted in a social desirability effect when answering questions concerning prejudice towards the target groups studied. • The limited nature of the sample introduces ecological validity and so a problem in extending the findings to other situations. • The particular dimensions of agreeableness and openness to experience can predispose particular world views and motivations that can result in adopting prejudiced ideals, suggesting that individual differences in personality can explain prejudice in society. **Credit any other reasonable comment on the quality of study**	

Level	Mark	Descriptor
AO1 (4 marks), AO3 (4 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.**		
Level 0	0	No rewardable material.
Level 1	1–2 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	3–4 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	5–6 marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	7–8 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Answer	Mark
6	**AO1 (2 marks)** One mark for defining encoding and one mark for defining capacity. For example: **Encoding** • Transforming sensory experience into a form that can be held/used by the memory system (1). **Capacity** • The amount of information that can be stored by the memory system (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
7(a)	**AO2 (3 marks)** One mark for correct/appropriate title, e.g. Title – A graph to show the (mean) number of classroom and non-classroom objects recalled by participants. One mark for correct/appropriate labelling of axes, e.g. Labelling (both axes) – y axis: (mean) number of items recalled, x axis – everyday classroom objects, objects not normally found in a classroom. One mark for correct plots in two bars.  	**(3)**

Question Number	Answer	Mark
7(b)	**AO2 (1 mark), AO3 (2 marks)** One mark for correct prediction using reconstructive memory theory (AO2). Two marks for correct analysis of the figures in support of this prediction (AO3). Example: • Reconstructive memory predicts that there should be more of the everyday objects remembered than the unfamiliar ones. These results support this (1). • People recall what they have seen based on an expectation of what is in a classroom rather than actuality (1). • People recall expected objects more than unexpected objects with 20 everyday objects compared to only 5 objects not normally found in a classroom, showing that schemas are used/memory is not like a tape recorder (1). **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
7(c)	**AO3 (2 marks)** Up to two marks for explaining one way in which the investigation could be improved. • Writing on a blank sheet would be better (1), so the method would be a measure of what the participants could recall / as it would mean no memories were missed by the list as the list could not contain all the objects that a participant might think of (1). • Barbara could have used a less familiar object than a tea pot (1) because it is less likely to be part of the classroom schema (more out of place) (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
8	**AO2 (1 mark), AO3 (2 marks)** One mark for identification of the problem (AO2). Two marks for justification (AO3). For example: • Working memory splits short-term memory into different parts, including phonological loop (1). • By listening to music and trying to revise at the same time, Rashine is trying to use the phonological loop for both activities (1). • The phonological loop has limited capacity, and so Rashine cannot cope with two auditory tasks simultaneously and is finding it difficult to revise(1). **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
9(a)	**AO1 (4 marks)** One mark for each point identified, and one mark for each justification for how it contributes to our understanding. Maximum of two marks if **two or more** points are made without explanation. • HM had a surgical procedure that resulted in no new memories being stored (1). • He could recall everything prior to the surgery but could not encode new memories (1). • This shows us that we have two types of memory: long term and short-term storage, as HM could maintain new information briefly/this shows us that the area damaged relates to new memories being encoded (1). • It informs us that short-term memories need to be transferred to long-term storage to be able to be retrieved again/it informs us which specific areas of the brain are likely to relate to memory (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
9(b)	**AO1 (2 marks) AO3 (2 marks)** One mark for each strength/weakness identified (AO1). One mark for justification of that strength/weakness (AO3). For example: **Strength** • Deliberate damage to the memory system/brains of human participants is not ethical (1), so case studies offer a unique insight into how our memory works whilst avoiding the ethical issue of invasive investigation (1). **Weakness** • Case studies are only based on one person or a small group (1). Therefore the resulting memory damage may not be the same for everyone and so makes the findings less generalisable/reliable (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Indicative content	Mark
10	**AO1 (4 marks), AO2 (4 marks)** **AO1** • The multi-store model suggests a sensory store, a short-term store and a long-term store. • The sensory store is the register for all information coming in from the senses but only some is attended to. • What is attended to goes into short-term memory (STM). • It lasts up to 30 seconds, and the capacity is between 5 and 9 items. • If the material is rehearsed in STM, it can go into long-term memory (LTM) otherwise it is lost. • LTM has unlimited capacity and duration. • STM is acoustic in coding, and LTM is mainly semantic though includes visual and acoustic elements. **AO2** **Details from Mr Williams's problems that can be used in evaluating the Multi-store model:** • He has a problem making new LTMs (he can't recall his new grandson or what day of the week it is). • His STM is intact because he can remember for short periods. • Transfer from STM to LTM is a problem. • So he has to keep asking the same question e.g. what day it is. • He is going to have problems with everyday activities such as cooking because he will not remember he has carried out things such as lighting a gas stove. • And forgetting to take his medication or taking it more than once because he will not transfer the information from STM to LTM. • His past episodic LTM is intact (he can recognise his children). But he will not update his family history even to the extent of a member dying or getting married or new members being born. **Look for other reasonable marking points.**	**(8)**

Level	Mark	Descriptor
AO1 (4 marks), AO2 (4 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs application in their answer.**		
Level 0	0	No rewardable material
Level 1	1–2 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 2	3–4 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Discussion is partially developed, but is imbalanced or superficial occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 3	5–6 marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Candidates will demonstrate a grasp of competing arguments but discussion may be imbalanced or contain superficial material supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 4	7–8 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical balanced discussion, containing logical chains of reasoning. Demonstrates a thorough awareness of competing arguments supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). (AO2)

Question Number	Indicative content	Mark
11	**AO1 (6 marks), AO3 (6 marks)** **AO1** • Lab experiments are studies done in an artificial and controlled environment. • One example is Baddeley (1966b) who looked at STM and LTM to study acoustic versus semantic memory and used careful controls such as controlling the lists used in the study. • This gives internal validity. • However, an unnatural setting threatens ecological validity. • Ethically experiments have to be careful about stressing participants. • Sherif et al. (1954/1961) used a field experiment which had a natural setting for the boys. • Reicher and Haslam (2006) aimed for a natural setting as they set up a mock prison. • Milgram (and Burger, 2009) carried out a series of experiments in a laboratory. • Questionnaires use written questions which can be standardised in giving each participant the same set of questions. • Cohrs et al. (2012) used questionnaires to gather data about prejudice related to social dominance orientation and right wing authoritarianism. • Questions can be closed or open. • Ecological validity of this data means that they are 'real life'. • Ethically, questionnaires must consider the questions that are asked, and this can embarrass participants if they refuse to answer them or perhaps if they answer them. **AO3** **For the use of laboratory experiments:** • Laboratory experiments generally ensure high levels of experimental/internal validity to establish cause and effect. • The use of questionnaires has little control over extraneous variables so cannot assess cause and effect in that respect.	**(12)**

Question Number	Indicative content	Mark
11 cont.	• Using procedures such as rehearsal suppression ensures that only STM is being tested, a control of Baddeley (1966b). • The use of questionnaires can't enforce prescribed procedures. • Field research often draws the same conclusions as laboratory research, suggesting that they are equally valid such as Sherif's findings about in group and out group prejudice, compared with Tajfel's own work in the laboratory. • Questionnaires about prejudice focus on self-report data, which might not be valid - though Cohrs et al. (2012) found that peer-report data correlated with self-report data, which suggests self-report data is reliable (presumably also valid as it comes from the individual concerned). • Social laboratory research is able to isolate human social behaviour, such as obedience to authority, without other numerous social behaviours influencing behavioural responses, which can help to study parts of the behaviour. However, this can mean the whole is missed, which points to lack of validity. • Questionnaires can assess behaviour based on a variety of questions that cover a range of social behaviours, and this is likely to mean more validity as real life covers a range of social behaviours. **Against the use of laboratory experiments:** • Laboratory research may lack ecological validity due to the controlled conditions, though obedience can happen in controlled conditions which means experiments looking at obedience might have some validity. • Questionnaires are carried out in natural situations so have increased ecological validity though they are asking what people say rather than recording actual real behaviour, and social desirability/demand characteristics can affect self-report data and its validity. • Learning lists of words is not a realistic task and does not reflect everyday use of memory (Baddeley, 1966b and other studies). • Questionnaires can be asked about memory in everyday life, so they are more realistic.	

Question Number	Indicative content	Mark
11 cont.	• Field research in cognitive psychology highlights that laboratory research may often underestimate the capacity of human memory (such as work by Loftus and others when they set up a situation and asked about eye witness testimony). • Laboratory research tends to use homogenous groups of people, so the external validity is low, and the application to the wider population cannot be established. • Questionnaires are more likely to use natural populations so application to wider populations if they are applicable. • Laboratory-based research into social psychological topics does not reflect normal everyday behaviour such as obedience in a classroom or to a police officer so lacks validity/lab-based research into social psychology does reflect normal behaviour in that it reconstructs a situation where someone is obeying authority and an unnatural setting can suit this scenario in some situations. **Look for other reasonable marking points.**	

Level	Mark	Descriptor
AO1 (6 marks), AO3 (6 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.**		
Level 0	0	No rewardable material.
Level 1	1–3 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	4–6 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	7–9 marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	10–12 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Write your name here

Surname	Other names

Pearson Edexcel
Level 3 GCE

Centre Number	Candidate Number

Psychology

Advanced Subsidiary
Paper 2: Biological Psychology and Learning Theories

Sample assessment materials for first teaching September 2015
Time: 1 hour 30 minutes

Paper Reference
8PS0/02

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- The list of formulae and critical value tables are printed at the start of this paper.
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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PEARSON

FORMULAE AND CRITICAL VALUE TABLES

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1-\frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

	N_b															
	5	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
N_a																
***p* ≤ 0.05 (one-tailed), *p* ≤ 0.10 (two-tailed)**																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

N_a	N_b = 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.01$ (one-tailed), $p \leq 0.02$ (two-tailed)																
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
18	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
19	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114

N_a	N_b = 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.025$ (one-tailed), $p \leq 0.05$ (two-tailed)																
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
17	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
18	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
20	20	27	34	41	48	55	62	69	76	83	90	98	105	112	119	127

N_a	N_b 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.005$ (one-tailed), $p \leq 0.01$ (two-tailed)																
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1
  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
n	0.1	0.05	0.02
N=5	0	-	-
6	2	0	-
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Answer ALL questions.

SECTION A: BIOLOGICAL PSYCHOLOGY

1 Positron Emission Tomography (PET) scans are often used to produce detailed 3D images of the brain.

(a) Describe Positron Emission Tomography (PET) as a brain-scanning technique.

(3)

Raine et al. (1997) used PET scans as part of their procedure.

(b) Give **one** aim of Raine et al's (1997) study.

(1)

(c) Give **one** conclusion of Raine et al's (1997) study.

(1)

(d) Explain **two** strengths of the methodology used in Raine et al's (1997) study.

(4)

1 .....

.....

.....

.....

2 .....

.....

.....

.....

(Total for Question 1 = 9 marks)

2 A researcher wanted to investigate whether there was a relationship between testosterone levels and aggression levels in males. An advert was placed in the magazine *Male Life* asking for males between 20 and 50 years old to take part in this research. Seven males were recruited and they were given a blood test to determine their testosterone levels and a questionnaire to assess their level of aggression out of 40.

The results of the questionnaire and the blood tests are displayed in **Table 1**.

Participant number	Aggression score /40	Testosterone level (nanograms per decilitre)
1	19	620
2	12	550
3	7	420
4	35	950
5	10	400
6	12	370
7	32	900

Table 1

(a) Name the sampling technique that was used for this investigation.

(1)

.....

.....

(b) Explain **one** limitation of the sampling technique used for this investigation.

(2)

.....

.....

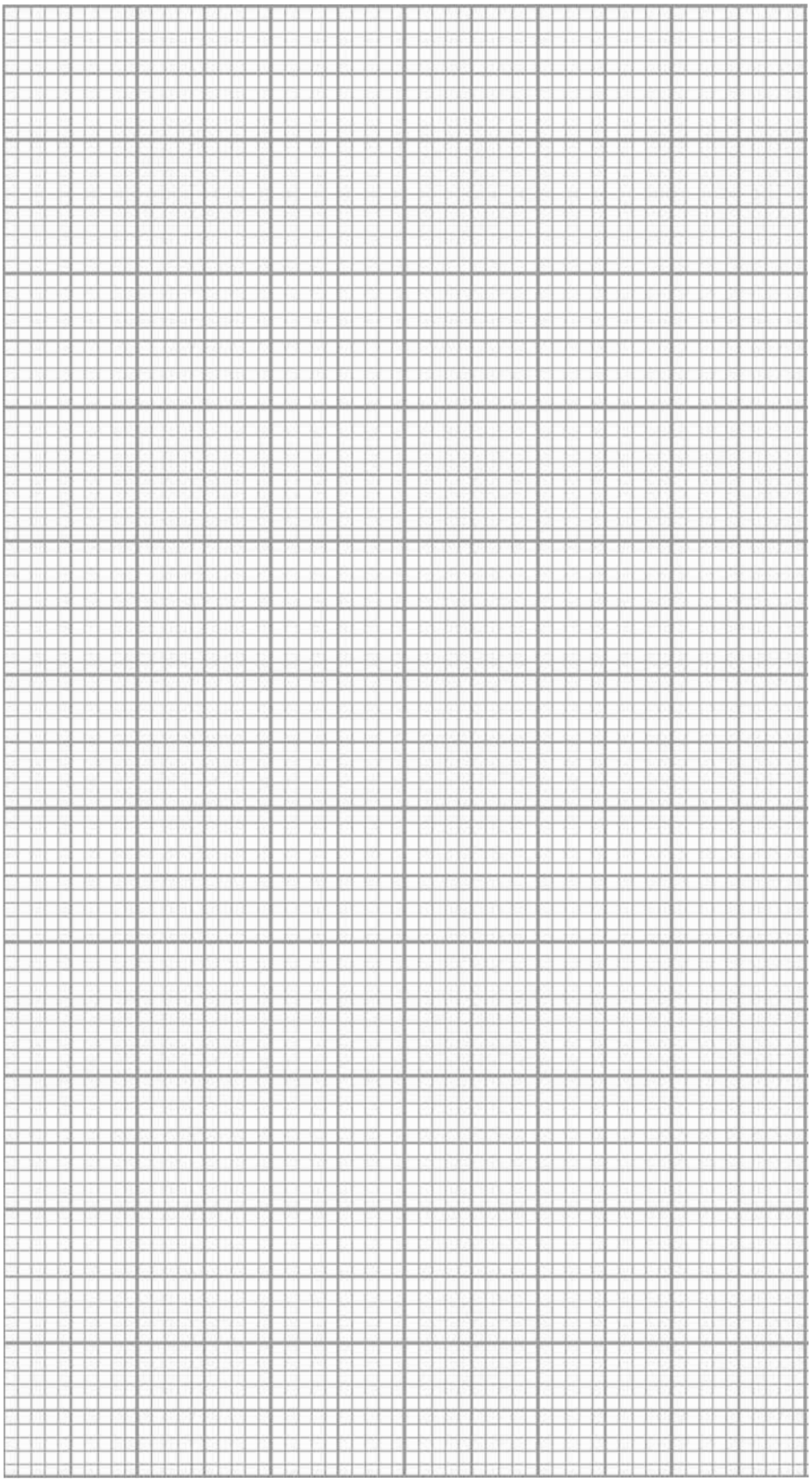
.....

.....

(c) Draw a scatter diagram to represent the data displayed in **Table 1**.

(3)

Title: .....



(d) Describe the relationship between testosterone levels and aggression levels shown by the results of this investigation.

(2)

.....

.....

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.....

(Total for Question 2 = 8 marks)

3 Sophie is experiencing trouble at school due to her inability to control her temper. She has been referred to the school counsellor who upon talking to her suspects that the problem is partly due to the recent events in her life.

In one of the sessions he assessed Sophie using the teenage version of a well-known scale that measures the level of stress due to life events and gives an arbitrary score for every time a particular event happens. These scores are added up to give an overall score. The size of this score gives an indication of a person's level of stress which could be the cause of the recent increase in aggressive behaviour.

Below is a portion of the scale showing the events that have happened and how she scored on it.

Event	Arbitrary Score	Times occurred in the year	Total for each type of event
Divorce of parents	65	1	65
Puberty	65	1	65
Death of a family member	60	1	60
Serious personal injury	45	1	45
Starting a new school	45	2	90
Parent remarries	35	1	35
		Total	380

(a) State **one** aspect of Sophie's situation that could be described as nature and **one** aspect that could be described as nurture.

(2)

(b) Describe how the counsellor would use this data to advise his client to reduce her aggression.

(2)

(Total for Question 3 = 4 marks)

4 Evaluate the use of biological and psychodynamic explanations of human behaviour.

(Total for Question 4 = 8 marks)

TOTAL FOR SECTION A = 29 MARKS

SECTION B: LEARNING THEORIES

5 (a) Identify the type of reinforcement being used in the following examples.

(i) If Grishma cleans her mother's car, she gets extra pocket money.

(1)

.....

.....

(ii) Sally always takes medication to get rid of her headache as she knows that within 15 minutes she will feel much better.

(1)

.....

.....

(b) Explain which type of reinforcement could ensure that a student keeps their room tidy.

(2)

.....

.....

.....

.....

(Total for Question 5 = 4 marks)

6 A psychology student is investigating behaviour at road crossings controlled by pedestrian signalling systems. A green light indicates that it is safe to cross the road. A red light indicates that pedestrians should wait.

Behaviour was recorded only for people arriving at the crossing when the light was red. The student observed six separate crossings of groups of pedestrians.

Table 2 shows the results of each observation.

Sets of lights	Males		Females	
	Waited for green light	Did not wait for green light	Waited for green light	Did not wait for green light
A	4	7	8	2
B	3	6	2	3
C	5	7	7	1
D	4	5	5	5
E	7	2	4	3
F	6	4	7	2

Table 2

(a) (i) Calculate the mean number of females who waited for the green light.

(1)

.....

.....

(ii) State the range of the data set for the males who did not wait for the green light.

(1)

.....

.....

(iii) Give a reason why standard deviation might be a more useful measure of dispersion than range.

(1)

.....

.....

(b) Give a suitable directional alternative hypothesis for this study.

(2)

One situational variable that could have affected the results of this study could have been the weather.

(c) Explain how poor weather conditions could have affected the results of this study.

(2)

(Total for Question 6 = 7 marks)

7 Watson and Rayner (1920) investigated the effectiveness of classical conditioning in humans, looking specifically at whether an infant could be conditioned to have a phobia of a white rat.

Little Albert was removed from the study before Watson and Rayner could cure his phobia.

Explain how **one** treatment from learning theory could have been used to cure Little Albert of his phobia.

(Total for Question 7 = 2 marks)

8 For your practical investigations you will have conducted at least one observation that yielded qualitative data requiring thematic analysis.

(a) Describe how qualitative data was gathered during your observation.

(2)

(b) Describe the sampling method you used for your observation.

(2)

(c) Explain **two** ways you could improve your observation in the future.

(4)

(Total for Question 8 = 8 marks)

9 Evaluate the use of non human animals in psychological research. You should make reference to Pavlov's use of dogs in your answer.

(Total for Question 9 = 8 marks)

(TOTAL FOR SECTION B = 29 MARKS)

SECTION C

10 'Of all biological factors, hormones play the most important role in explaining human aggression, however they have little role to play in social learning theory explanations'.

To what extent do you agree with this statement?

(12)

.....

.....

(Total for Question 10 = 12 marks)

TOTAL FOR SECTION C = 12 MARKS
TOTAL FOR THE PAPER = 70 MARKS

Question Number	Answer	Marks
1(a)	**AO1 (3 marks)** One mark for each point related to PET which in combination provides a logical description (excluding that it produces 3D as that is in the question), up to 3 marks. For example: • A PET scan is a way of measuring brain activity (1). The person requiring the scan has some radioactive glucose/isotope injected into their arm/blood circulation/vein. The tracer emits positrons which give out gamma rays that can be detected by the scanner (1). The radioactive glucose is detected by the PET scanner as it moves to the parts of the brain (that are required to complete a task) that are working at that moment in time (1). **Look for other reasonable marking points.**	**(3)**

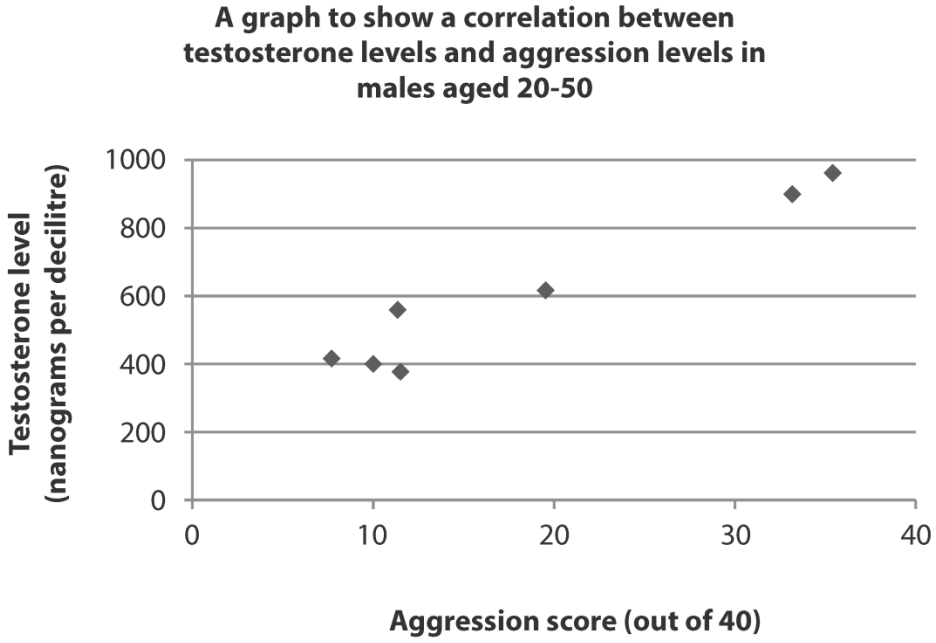
Question Number	Answer	Marks
1(b)	**AO1 (1 mark)** One mark for giving an aim related to Raine et al.'s (1997) study. For example: • Raine et al. wanted to see if there was a difference in the prefrontal cortex of murderers/people pleading not guilty to murder through diminished responsibility and a control group OR • Raine et al. (1997) wanted to see if there was brain abnormality in people pleading not guilty to murder by reason of insanity. **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Marks
1(c)	**AO1 (1 mark)** One mark for giving a conclusion of Raine et al.'s (1997) study. For example: • They concluded that the brain structure/brain activity of murderers was significantly different from the brain structure/brain activity of non-murderers. OR • They concluded that there was a difference in corpus callosum activity between the NGRI participants and the control group, which might suggest a lack of emotional expression and other features that led to aggression. **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Marks
1(d)	**AO1 (2 marks), AO3 (2 marks)** One mark for each strength identified (2 AO1). One mark for justification of each strength (2 AO3). For example: • Raine et al. used a matched control group, which means that an accurate and valid comparison could be made between the groups (1). The detail of the matched control group meant that more accurate comparisons could be made, e.g. there were five people with schizophrenia in both groups (1). • Compared to studies of this kind, this is a relatively large sample (of 41) (1), which means that the results are more representative and can be generalised, especially as the 41 participants were people actually charged with aggressive behaviour (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Marks
2(a)	**AO2 (1 mark)** One mark for identifying the technique used. • Volunteer (sampling)/self-selecting.	**(1)**

Question Number	Answer	Marks
2(b)	**AO2 (2 marks)** One mark for identifying a limitation in this investigation and one mark for justifying that limitation. For example: • The sampling method technique means that only a certain type of person is likely to respond to an advert in *Male Life* (1). This may not be representative of the target population of males required, which may limit the generalisability of the findings (1). OR • Only certain people who read *Male Life* and are motivated to find out the link between testosterone levels and aggression levels may volunteer to take part (1), which means that the results may not be generalised to the general population only to specific 'types' of male (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Marks
2(c)	**AO2 (3 marks)** One mark for correct/appropriate title. A graph to show a correlation between testosterone levels and aggression levels in males aged 20-50. One mark for correct/appropriate labelling of axes. Y axis: Testosterone level (nanograms per decilitre). X axis: Aggression score out of 40. One mark for correct plots on the graph.  Maximum of two marks awarded if one of the components (aggression levels/tolerance levels) is missing. Maximum of one mark awarded if two of the components are missing.	**(3)**

Question Number	Answer	Marks
2(d)	**AO2 (2 marks)** One mark for each point linked to the relationship, which, in combination, provides a logical description, up to 2 marks. • As the aggression score increases so does the testosterone score/this is a positive correlation (1). • There is a linear relationship between the two scores/the line of best fit would show that the lower scores on aggression also have lower testosterone levels (and vice versa) (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Marks
3(a)	**AO2 (2 marks)** One mark for an answer relating to nature. One mark for an answer relating to nurture. Nature • Level of hormones (testosterone). • Puberty. • Gender. • She may have brain dysfunction. Nurture • Divorce of parents. • Death of family member • Personal injury. • New step parent. • Starting a new school. **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Marks
3(b)	**AO2 (2 marks)** One mark for each point, which, in combination, provides a logical description, up to 2 marks. The counsellor will explain to Sophie that • She has suffered some serious events to affect her aggression e.g. divorce of her parents (1). • There are some events she can do something about (e.g. making new friends at school) and some she can't (e.g. parents' separation) (1). • Looking at the figures will get her to rationalise her situation (1). • Devising a strategy (e.g. to increase her circle of friends) will reduce the environmental causes of her aggression and help her to control her anger (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Indicative content	Marks
4	**AO1 (4 marks), AO3 (4 marks)** **AO1** • The psychodynamic approach looks at three parts of the personality: the id, ego and superego. • The superego is the conscience and gives society's rules, the id is the 'demanding' part of the personality and the ego sets about getting a balance between the demands and the rules. • Aggression can release unconscious desires and wishes and can be cathartic. • The biological approach covers areas such as genes, hormones and brain functioning/structure. • Testosterone levels, for example, may explain why male aggression is more common than female. **AO3** • Biological research methods tend to gather quantitative data, which is useful when looking at brain functioning, whereas psychodynamic research methods tend to focus on qualitative data, which is important in explaining such aspects as emotions. • Biological research focuses on neurotransmitters, which have been shown to be important in brain functioning and which will link to aggressive thoughts, whereas psychodynamic research focuses on the unconscious, which can explain such aspects of behaviour as personality. • The biological approach ignores the influence of early experiences on behaviour except perhaps development of testosterone/hormones. But attachment studies have shown this to be very important in adult behaviour, and the psychodynamic approach ignores the influence of genes and hormones, which can explain such behaviours as aggression. • The biological approach suggests that behaviour is determined by physical aspects of the person such as hormones, genes and brain functioning, whereas the psychodynamic approach suggests that the different parts of the mind, (which is part of the human nature so in a way biological)– determine behaviour.	**(8)**

Question Number	Indicative content	Marks
4 cont.	• The biological approach holds that aggression is from areas of the brain such as the limbic system and prefrontal lobe functioning whereas the psychodynamic approach sees aggression as being cathartic, releasing energy that was being used to repress anger. Both together give a rounded explanation of aggression from the cause to the behaviour. • Some behaviours are better explained by biology such as the role of brain functioning in aggression. • Some behaviours are better explained by psychodynamic such as the role of catharsis in releasing aggression. • The use of psychodynamic therapies show that psychodynamic theory has some relevance, such as uncovering unconscious wishes and thoughts to release them and free the person from aggressive tendencies. • Personality differences can be explained using the psychodynamic ideas of ID, ego and superego. • Biological concepts of genes and arousal levels can also explain personality differences. **Look for other reasonable marking points.**	

Level	Mark	Descriptor
AO1 (4 marks), AO3 (4 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.**		
Level 1	0	No rewardable material.
Level 1	1–2 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	3–4 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	5–6 marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	7–8 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Answer	Marks
5(a)(i)	**AO2 (1 mark)** One mark for identifying the correct reinforcement type. Positive reinforcement	**(1)**

Question Number	Answer	Marks
5(a)(ii)	**AO2 (1 mark)** One mark for identifying the correct reinforcement type. Negative reinforcement	**(1)**

Question Number	Answer	Marks
5(b)	**AO2 (2 marks)** One mark for type of reinforcement used with the student identified. One mark for justification of that type. For example: • Positive reinforcement: if the student is rewarded by positive comments from their peers/family (1), then they will continue to keep their room tidy in order to receive more praise (1). OR • Negative reinforcement: if the student is criticised by their peers/family for being untidy (1), then they will continue to keep their room tidy to stop the criticism (1). **Look for other reasonable marking points.** Negative reinforcement, positive reinforcement and punishment could be used to answer this question as long as the answer is justified. **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Marks
6(a)(i)	**AO2 (1 mark)** One mark for calculating the mean for the data subset. 5.5	**(1)**

Question Number	Answer	Marks
6(a)(ii)	**AO2 (1 mark)** One mark for correctly stating the range for the data subset. Range = 5 Accept the population range, 4 (n-1)	**(1)**

Question Number	Answer	Marks
6(a) (iii)	**AO1 (1 mark)** One mark for an appropriate reason for the SD being more useful / advantage of standard deviation. For example: • The standard deviation takes account of all the figures in the data set individually whereas the range does not, it just takes the bottom score from the top score (1). OR • The standard deviation can take account of the effect of outliers, and the range takes the most outlying scores into account but just the top and bottom scores (1). **Look for other reasonable marking points.**	**(1)**

Question Number	Answer	Marks
6(b)	**AO2 (2 marks)** One mark for a partially correct operationalised directional hypothesis and two marks for a fully correct operationalised directional hypothesis. For example: • 'Females will stop more times than males'. (1) • 'Females will stop and wait for the green light more times than males stop and wait for the green light.' (2). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Marks
6(c)	**AO2 (2 marks)** One mark for point identified in the study relating to weather conditions (AO2). One mark for justification of that point in how it might affect the results (AO3). For example: • In poor weather conditions, people's behaviour at lights may not be normal/representative (1) as if it is raining, for example, people will be less likely to wait for a green light because they do not want to get wet (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Marks
7	**AO1 (2 marks)** One mark for identifying and briefly describing the treatment in relation to Little Albert's phobia (what would be done). One mark for explaining how the phobia would be 'cured' (how it would work). For example: • The experimenters could have used the technique of flooding by continually presenting Little Albert with a white rat (1). Eventually Little Albert's fear response would diminish as it would be extinguished through fatigue (1). OR • Little Albert could have been counter-conditioned, e.g. the rat could have been paired with food or a favourite toy (1). This results in him associating the rat with a feeling of pleasure, rather than fear (1). OR • Little Albert could have been gradually introduced to the rat whilst maintaining relaxation such as when happily playing (using systematic desensitisation) (1) so that he would replace his fear response with relaxed/happily playing response (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Marks
8(a)	**AO2 (2 marks)** One mark for each point related to data collection procedures, which, in combination, provide a logical description, up to 2 marks. For example: • Qualitative data was gathered by describing what was observed with regard to polite behaviours shown by each gender (1), for example stating that females tended to say thank you whereas males nodded their head (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Marks
8(b)	**AO2 (2 marks)** One mark for each point related to the sampling method, which, in combination, provides a logical description, up to 2 marks. For example: • An opportunity sample was used from the school's sixth form group (1). The sixth form common room was observed at each break time for a week and people were observed who were available at the time (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Marks
8(c)	**AO3 (4 marks)** One mark for identifying each improvement and one mark for each justification of that improvement. Maximum two marks if two or more points made without any justification. For example: • By conducting the observation on a busier day (e.g. a Saturday) there would be a wider range of participants/people observed (1). This would mean that the sample was more representative of a target population in terms of age and gender, for example (1). • By repeating the observation in more locations over a period of time, there would be a larger sample (1), which means that more generalisable conclusions can be drawn as the sample is more likely to be representative (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Indicative content	Marks
9	**AO1 (4 marks), AO3 (4 marks)** **AO1** • Non-human animals are used in psychology such as Skinner's work on operant conditioning and Pavlov's work on classical conditioning. • There are ethical issues with using non-human animals, such as needing to have a licence and having to use appropriate caging. • Also endangered species are avoided, and there has to be minimal use. • Other ways of studying the area must be considered such as using humans or computer simulation. • There are also practical issues with non-human animals such as them representing human processing to an extent but not fully. • The APA has Guidelines for Ethical Conduct in the Care and Use of Animals to guide researchers. • The UK has the Animals (Scientific Procedures) Act 1986 to adhere to. • Pavlov's dogs may have suffered from being restrained. • There was apparatus and a qualified person would be needed to run the study, with anaesthetic as required. **AO3** **For the use of non-human animals in research** • It is possible to have more control over extraneous variables when using non-human animals compared to humans. This allows us to be more certain about the cause of a specific behaviour as only one thing is changed between the groups of non-human animals. • For example, Pavlov was able to make sure the dogs were hungry and to maintain environmental conditions in the laboratory to cut out other stimuli (other than the IV). • Skinner built a box to make sure that the environment was controlled. • Non-human animals reproduce at a faster rate than humans. This means that we can study the effect of something such as genes over the generations.	**(8)**

Question Number	Indicative content	Marks
9 cont.	• Van den Oever et al. (2008) were able to condition animals to have a heroin addiction, then extinguish the addiction, then re-introduce cues in a relatively small space of time, none of which would be possible on ethical or practical grounds using humans. • It is possible to do things to non-human animals (such as cause brain damage) that would be unethical in humans, e.g. Skinner gave electric shocks to the rats in the Skinner box; we wouldn't be able to give electric shocks to humans in the same way. • Some non-animal studies are not in a laboratory and animals are observed in their natural setting, which is more ethical than when non-human animal studies are laboratory-based. This can be hard in practical terms, as animals can perhaps sense themselves being observed. • Pavlov's work was used to develop therapies for human use such as systematic desensitisation, so his findings help humans. **Against the use of non-human animals in research** • Some people argue that we should never do things to non-human animals that we would not do to humans, and all non-human animal studies are unethical. • While we may expect a benefit to come from the research, we cannot know there will be any benefit until after the research has been completed. • Results from non-human animals such as rats may not be true for humans, which means that they have been used in vain so making it unethical. • There may be issues of cost (caging, facilities). • Social animals, such as monkeys, should not be used in experiments and, if they are, they should not be isolated any more than is essential to the experiment. • The human brain is more complex than an animal's brain (such as our use of emotions, consciousness and reasoning), which is higher-order compared with animals. Therefore, findings from non-animal studies might not be generalisable enough to humans.	

Question Number	Indicative content	Marks
9 cont.	**General points** • Using Bateson's cube, non-human animal studies are ethical if we are certain there will be a benefit, their suffering is low and the research is of high quality. • It is important to make sure that there is no alternative way (e.g. computer simulations) to carry out the study without the use of non-human animals. • If the non-human animals are going to suffer after the experiment, there should be facilities to humanely euthanise them. **Allow other appropriate marking points.**	

Level	**Mark**	**Descriptor**
AO1 (4 marks), AO3 (4 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.**		
Level 0	0	No rewardable material.
Level 1	1–2 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	3–4 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	5–6 marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	7–8 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Indicative content	Marks
10	**AO1 (6 marks), AO3 (6 marks)** **AO1** **Hormones** • Hormones are seen as playing a part in behaviour, such as in aggression, where testosterone is linked. • The biological approach also considers genes as being responsible for behaviour. • Genes (sex genes) link with hormone production. • Hormones such as testosterone have been linked to aggression and adrenaline for fight or flight behaviour and to social dominance. • Hormones should be at a certain balance in an individual's body, and an imbalance of certain hormones can cause the temperament of individuals to change. **SLT** • Role modeling imitation is used in explaining why children copy an adult abusing a bobo doll. • Vicarious reinforcement explains why children will copy a model who is rewarded for aggression. • Biological factors have little role in SLT. • Boys are seen to imitate male models being aggressive more than female models (e.g. Bandura et al., 1961, 1963). **AO3** **For hormone levels playing a role in explaining human behaviour** • Research with animals clearly shows a link between testosterone and aggression, giving evidence that hormones do influence behaviour (e.g. Archer, 1991). • However, children have been shown to copy an adult abusing a bobo doll with no role of testosterone (e.g. Bandura et al, 1961/1963), supporting the social learning explanation. • The fact that males and females have different levels of hormones and that they present very different nurturing behaviours demonstrates the clear role hormones play in determining behaviour.	**(12)**

Question Number	Indicative content	Marks
10 cont.	• The hormones adrenaline and noradrenaline are released in a threatening situation showing a clear link between hormones and behaviour. • Hormones such as testosterone have been linked to aggression and adrenaline for fight or flight behaviour. **Against hormone levels playing a role in explaining human behaviour** • Researchers such as Raine et al. (1997) and case studies of individuals such as Phineas Gage have shown that brain areas such as the prefrontal cortex, and not hormones, are responsible for influencing human behaviour. • Archer (1991) suggests that in animals aggression and testosterone go together, but a review of studies using humans is less conclusive, and there is a suggestion the link is not that strong. • Mims (2007) suggests that testosterone might link to aggression to an extent, but one does not cause the other. • Simpson (2001) sees testosterone as maybe part of what leads to aggression, but environmental issues and previous experience (which might link to social learning theory) are likely to be stronger as causes. • Research has shown that neurotransmitters may be more important than hormones in influencing human behaviour, e.g. serotonin has been consistently linked to depression and dopamine to schizophrenia. • Further evidence for the role that neurotransmitters play in influencing human behaviour is the fact that drugs that alter neurotransmitter levels have a positive impact on behaviour. Drugs can be prescribed for aggression but would be more linked to aggression from psychosis than 'pure' aggression. However, this does support the idea that neurotransmitter functioning is involved. **Allow other appropriate marking points.**	

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

Level	Mark	Descriptor
AO1 (6 marks), AO3 (6 marks)		
	0	No rewardable material.
Level 1	1-3 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	4-6 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	7-9 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	10-12 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

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