Write your name here

Surname	Other names

Pearson Edexcel
International Advanced Level

Centre Number | | | | | |

Candidate Number | | | | |

Psychology

International Advanced Subsidiary
Paper 2: Biological Psychology, Learning Theories and Development

Thursday 19 October 2017 – Afternoon
Time: 2 hours

Paper Reference
WPS02/01

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 96.
- 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 statistical 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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Pearson

FORMULAE AND STATISTICAL 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.

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.

SECTION A

BIOLOGICAL PSYCHOLOGY

Answer ALL questions in this section. Write your answers in the spaces provided.

1 Charong picked up a hot pan and dropped it on the floor.

Describe the role of the central nervous system when Charong dropped the hot pan.

(Total for Question 1 = 3 marks)

2 Adriana carried out a correlation to determine whether there was a relationship between sleep and aggression. She recorded the average number of hours sleep participants had per night in a week, and the number of aggressive acts they carried out in the same week.

The results for the number of hours sleep and number of aggressive acts are shown in **Table 1** below.

	Average number of hours sleep in a night	Rank 1	Number of aggressive acts in a week	Rank 2	d	d^2
A	8	4	3	3.5	0.5	
B	10	8	5	6	-2	
C	6.5	2	3	3.5	1.5	
D	7	3	0	1	2	
E	9	6.5	6	7	-0.5	
F	8.5	5	4	5	0	
G	5	1	2	2	-1	
H	9	6.5	9	8	-1.5	

Table 1

(a) Complete **Table 1** and calculate Spearman's Rank test between the average number of hours sleep in a night and the number of aggressive acts in a week.

The formula can be found in the formulae and statistical tables at the front of the paper.

You **must** express your answer to two decimal places.

(4)

Space for calculations

Spearman's Rank test result .....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

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(b) Explain **one** strength and **one** weakness of using the correlational research method.

(4)

Strength

Weakness

(Total for Question 2 = 8 marks)

3 Tariro has been fighting. His mother thinks that Tariro's aggression is genetic as his father and grandfather have both been in trouble with the police for fighting.

(a) Describe the role of genes in Tariro's aggression.

(3)

(b) Explain **one** weakness of the role of genes in aggression.

(2)

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(Total for Question 3 = 5 marks)

4 In your studies of biological psychology you will have studied the following classic study in detail:

- Raine et al. (1997).

(a) State **one** aim from the classic study by Raine et al. (1997).

(1)

(b) Explain **one** improvement that could be made to the classic study by Raine et al. (1997).

(2)

(Total for Question 4 = 3 marks)

5 Gabriella is conducting an experiment to see if there is a difference between the mathematical ability of males and females using a mathematics test. She uses a volunteer sampling technique to gain 30 participants, of which 15 are male and 15 are female. Her participants are all 11 years old and from the same school.

(a) Describe how Gabriella may have obtained her volunteer sample.

(2)

(b) Describe why Gabriella used a volunteer sample for her experiment.

(2)

(c) Explain **one** weakness of the volunteer sampling technique.

(2)

(d) Identify **one** sampling technique other than volunteer sampling.

(1)

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(Total for Question 5 = 7 marks)

6 Assess the importance of the role of internal pacemakers (body clock) in the regulation of sleep.

(8)

(Total for Question 6 = 8 marks)

TOTAL FOR SECTION A = 34 MARKS

SECTION B

LEARNING THEORIES AND DEVELOPMENT

Answer ALL questions in this section. Write your answers in the spaces provided.

7 Amelia had a troubled relationship with her parents as a child, and she is now receiving therapy/treatment for problems in her relationship with her husband.

Amelia's therapist offers therapy/treatment from the object relations school of thought.

(a) Describe the therapy/treatment Amelia's therapist would offer.

(4)

(b) Explain **one** strength and **one** weakness of the object relations school of thought therapy/treatment.

(4)

Strength

Weakness

(Total for Question 7 = 8 marks)

8 Mateo investigated gender stereotypes in advertisements. He decided to carry out a content analysis on advertisements that appear on television.

(a) Describe how Mateo may have carried out his content analysis.

(4)

Mateo analysed his results using the mode.

(b) State why Mateo used the mode to analyse his results.

(1)

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Mateo carried out a chi-square statistical test on his data due to the type of data he had collected.

(c) Give **two** reasons, other than the type of data, why Mateo used a chi-square statistical test.

(2)

1 .....

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2 .....

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(Total for Question 8 = 7 marks)

9 In your studies of learning theories and development you will have studied one of the following contemporary studies in detail.

- Prot (2014)
- Bastian et al. (2011).

Chosen study

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(a) State **one** aim from the contemporary study you have chosen.

(1)

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(b) Explain **two** weaknesses of the contemporary study you have chosen.

(4)

1 .....

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2 .....

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(Total for Question 9 = 5 marks)

10 Naif carried out a participant observation. He was observing the behaviour of students in different classes to investigate whether they behaved differently for different teachers. Naif decided to do an overt observation.

(a) Describe how Naif could make his observation of the students overt.

(2)

(b) Explain **one** strength and **one** weakness of the observational research method.

(4)

Strength

Weakness

(Total for Question 10 = 6 marks)

11 Peter is 3 years old and his father is concerned about his safety near roads. He is worried Peter will be in an accident as he often runs into the road without looking to see if any vehicles are coming towards him. His father is trying to teach Peter to be more careful near roads.

Discuss, using operant conditioning, how Peter's father could teach him to be more careful near roads.

You **must** refer to the context in your answer.

(8)

(Total for Question 11 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

SECTION C

Answer ALL questions in this section. Write your answers in the spaces provided.

12 Evaluate Freud's psychosexual stages of development.

(12)

(Total for Question 12 = 12 marks)

13 Evaluate the structure of the brain **and** social learning theory as explanations of aggression.

(16)

(Total for Question 13 = 16 marks)

TOTAL FOR SECTION C = 28 MARKS
TOTAL FOR PAPER = 96 MARKS

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