Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International Advanced Level

Time 2 hours

Paper reference **WPS02/01**

Psychology

International Advanced Level
PAPER 2: Biological Psychology, Learning Theories and Development

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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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 (a) State the function of neurotransmitters.

(1)

(b) Explain **one** weakness of the function of neurotransmitters as an explanation of human behaviour.

(2)

(Total for Question 1 = 3 marks)

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2 Serenity has carried out a correlation to determine whether there is a relationship between how old her participants are in years and the number of hours they slept on average per night.

(a) State the **two** fully operationalised co-variables in Serenity's correlation.

(2)

1 .....

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2 .....

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Serenity's results are shown in **Table 1**.

Age (years)	Average amount of sleep per night (hours)
21	9
18	10
30	8
27	9
24	7

Table 1

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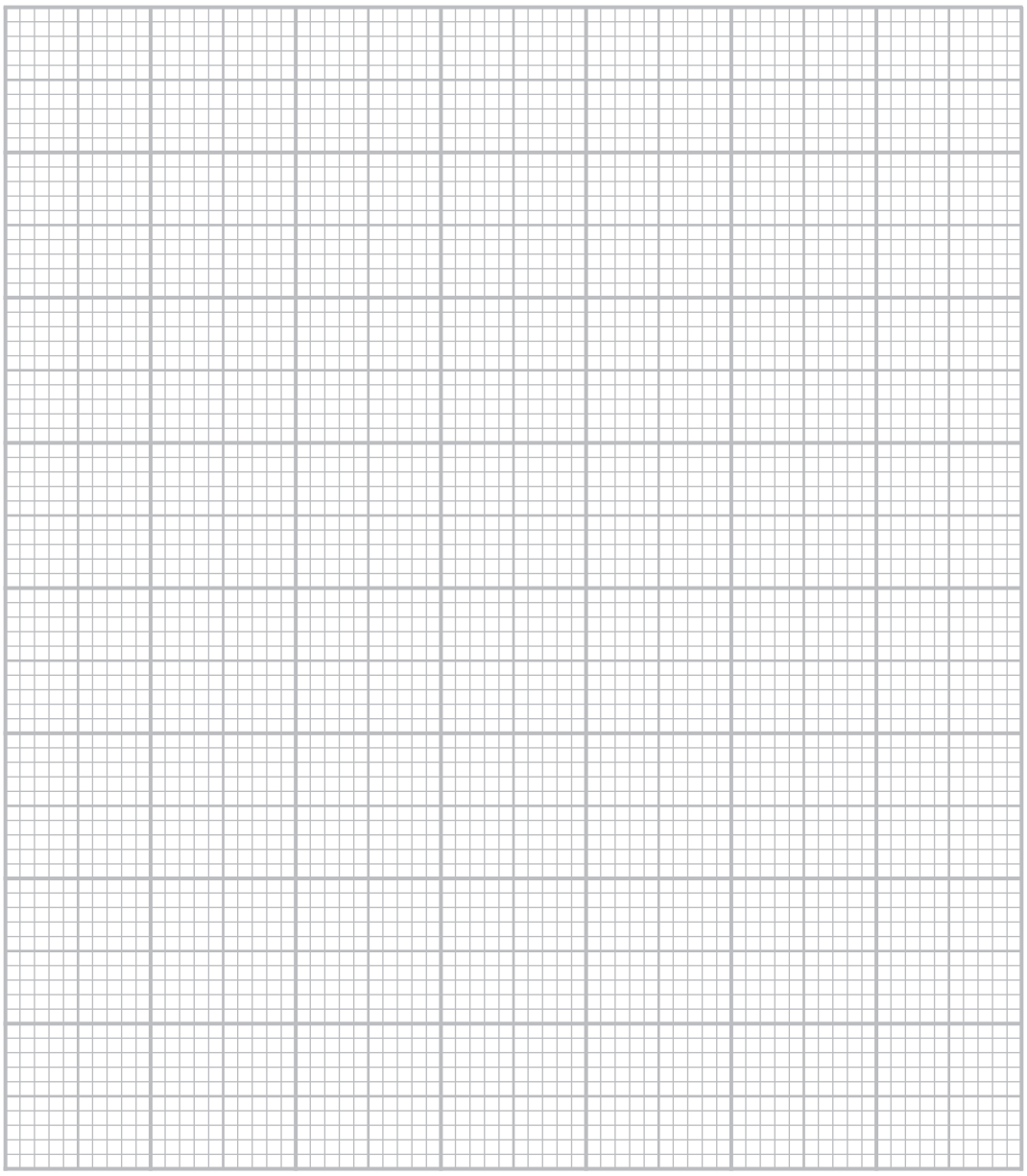
(b) Draw a scatter diagram to represent the data shown in **Table 1**.

(3)

Title



(c) Serenity used the Spearman's rank test to see if her results were significant.

Give **two** reasons why Serenity used the Spearman's rank test for her data.

(2)

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2 .....

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(Total for Question 2 = 7 marks)

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3 In your studies of biological psychology, you will have learned about the infradian rhythm of the menstrual cycle.

(a) Describe the infradian rhythm of the menstrual cycle.

(4)

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(b) Explain **two** strengths of infradian rhythms as an explanation of human behaviour.

(4)

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(Total for Question 3 = 8 marks)

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4 During your studies of biological psychology, you will have learned about one of the following contemporary studies in detail:

- McDermott (2008)
- Hoefelmann et al. (2006).

(a) Describe your chosen contemporary study.

(4)

Chosen study

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(b) Explain **two** weaknesses of your chosen contemporary study in terms of validity.

(4)

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(Total for Question 4 = 8 marks)

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5 Evaluate the use of brain-scanning techniques in biological psychology.

(8)

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(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 34 MARKS

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SECTION B

LEARNING THEORIES AND DEVELOPMENT

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

6 Jasmine has learned how to clean her shoes after she paid attention to her sister cleaning shoes.

(a) Describe 'attention' as it is used in social learning theory, using Jasmine as an example.

(2)

(b) Explain **one** weakness of social learning theory.

(2)

(Total for Question 6 = 4 marks)

7 Elijah has been asked to investigate whether today's teenagers feel more stressed compared to teenagers ten years ago and twenty years ago.

He created a questionnaire that contains open questions. Elijah asked 10 teenagers, 10 people in their mid-twenties and 10 people in their mid-thirties to answer them.

Once Elijah had all the questionnaires back, he noted down the age of the participants and carried out a thematic analysis on the data.

(a) Describe how Elijah could carry out a thematic analysis on his data.

(4)

(b) Explain **two** improvements Elijah could make to his investigation.

(4)

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2 .....

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(Total for Question 7 = 8 marks)

8 Willow has started psychoanalysis to treat her phobia of expressing her opinion. She has an important meeting in three months' time where she needs to be able to state what she thinks.

The psychoanalyst uses free association as part of the therapy. During free association Willow accidently mentioned her father when talking about her husband. In another session Willow was talking about how she did not like her boss and then mentioned how her mother had the same colour hair as her boss.

The psychoanalyst wanted to focus on these statements, but Willow felt embarrassed about her mistakes and tried to talk about something else. She felt the mistakes were not important.

(a) Describe free association as used in Willow's psychoanalysis.

(4)

(b) Explain **one** strength and **one** weakness of free association as a treatment for Willow.

(4)

Strength

Weakness

(Total for Question 8 = 8 marks)

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9 Rose has conducted an investigation into whether males or females spend more time doing jobs around the house. She asked her participants to estimate how many hours a week they spent on average doing jobs around the house.

Rose's results for males are shown in **Table 2**.

Participant	Average number of hours a week males spend doing jobs around the house	$(x - \bar{x})$	$(x - \bar{x})^2$
A	4	–1.83	
B	7	1.17	
C	10	4.17	
D	5	–0.83	
E	7	1.17	
F	2	–3.83	
Mean	5.83	Sum of differences^2 =	
Standard deviation = ...			

Table 2

(a) Calculate the standard deviation to two decimal places for the data gathered by Rose by completing **Table 2**.

You must show your calculations.

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

(4)

Space for calculations

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(b) Explain **one** reason why Rose used the standard deviation for her investigation.

(2)

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(Total for Question 9 = 6 marks)

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10 Axel has a young dog. He is taking it to puppy class to teach it how to sit and how to wait. He also wants to teach the puppy how to do tricks such as roll over and put a paw into his hand.

The puppy class instructor has told him to use treats and praise to teach the puppy. Axel's father says that if the puppy misbehaves then it should be put in a cage for a short while. Axel is concerned about giving the puppy treats all the time.

Discuss how operant conditioning can be used to train Axel's puppy.

You must make reference to the context in your answer.

(8)

(Total for Question 10 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

SECTION C

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

11 To what extent can genes be used as an explanation of aggression?

(12)

(Total for Question 11 = 12 marks)

12 In your studies of biological psychology and learning theories, you will have learned about the following studies:

- Brendgen et al. (2005)
- Watson and Rayner (1920).

Evaluate the studies by Brendgen et al. (2005) and Watson and Rayner (1920).

(16)

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(Total for Question 12 = 16 marks)

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

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