

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Pearson Edexcel
International
Advanced Level

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--	--

Thursday 14 January 2021

Afternoon (Time: 2 hours)

Paper Reference **WPS02/01**

Psychology

International Advanced Subsidiary

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.
- Check your answers if you have time at the end.

Turn over ►

P66617A

©2021 Pearson Education Ltd.

1/1/1



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

N	Level of significance for a one-tailed test				
	0.05	0.025	0.01	0.005	0.0025
N	Level of significance for a two-tailed test				
	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.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E}$$

$$df = (r - 1)(c - 1)$$

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

<i>n</i>	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
	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.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

SECTION A

Biological Psychology

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

- 1** (a) Define the term 'infradian rhythm' as used in biological psychology. (1)

.....

.....

.....

- (b) Explain **one** weakness of using infradian rhythms when explaining human behaviour. (2)

.....

.....

.....

.....

.....

.....

(Total for Question 1 = 3 marks)



(b) Explain **one** strength and **one** weakness of research into the role of hormones in aggression.

(4)

Strength

.....

.....

.....

.....

.....

.....

Weakness

.....

.....

.....

.....

.....

.....

(Total for Question 2 = 8 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



- 3 Juana had conducted an investigation into brain activity and aggression using an fMRI scan. Her sample consisted of 11 males, and she used a repeated measures design.

Juana measured the amount of brain activity in the participants when they were resting and then again when they were shown aggressive pictures.

Juana carried out a Wilcoxon signed ranks test on her data. She had a calculated value of 12.

- (a) Explain, using data, whether Juana's results were significant at $p=0.05$ for a two-tailed (non-directional) test.

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

(2)

- (b) Explain **one** strength of Juana using an fMRI scan for her investigation.

(2)

(Total for Question 3 = 4 marks)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE



- 4 Ferdinand conducted a correlation to see if there was a relationship between the average number of hours slept per night and the average number of hours spent exercising per week.

Ferdinand asked his participants to fill in a daily diary stating how long they slept each night. The participants also had to record how long they exercised for in a week.

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

Participant	Average number of hours slept per night	Average number of hours spent exercising per week
A	7	4
B	4	2
C	5	4
D	6	5
E	8	6
F	8	5

Table 1

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

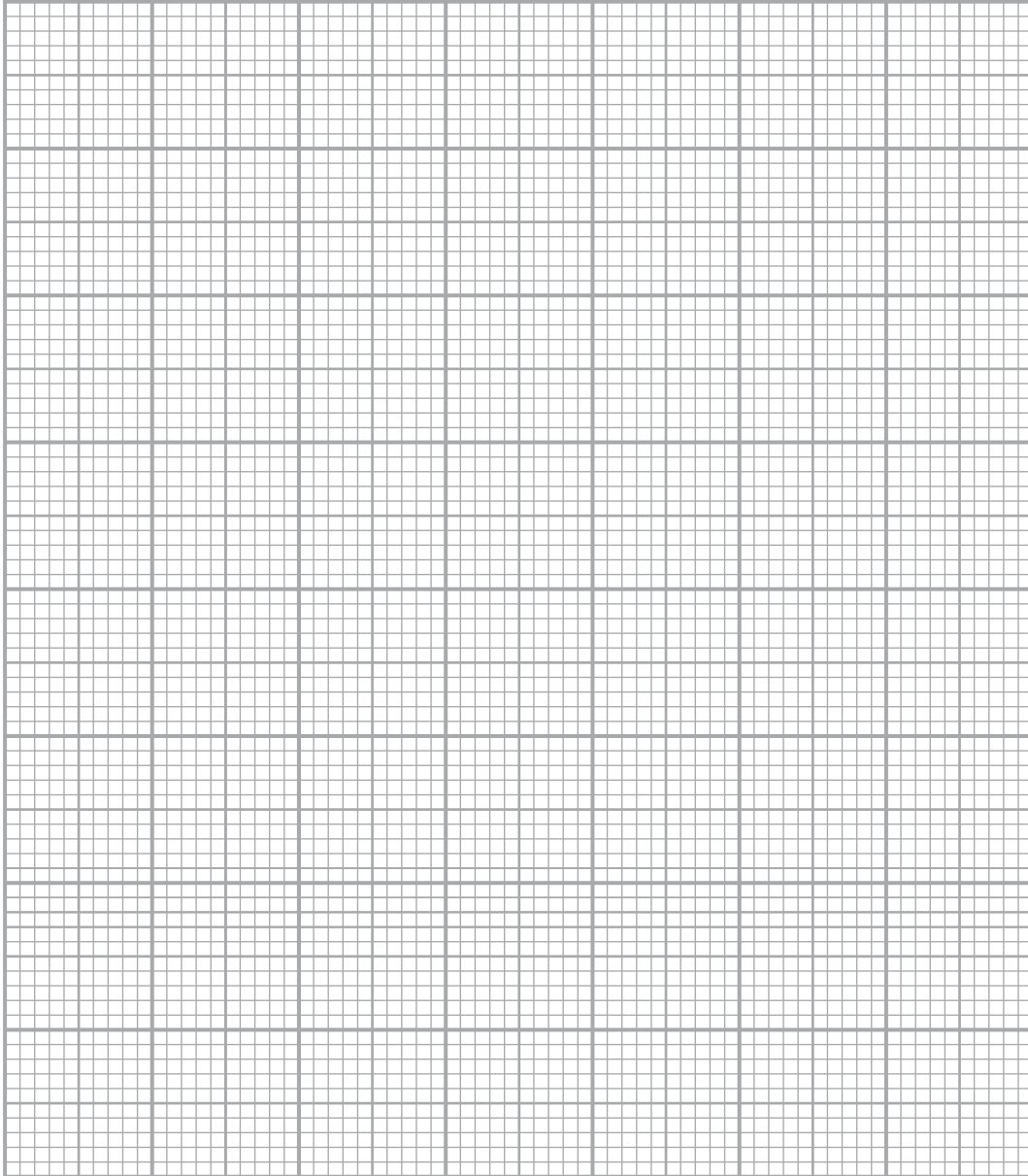
DO NOT WRITE IN THIS AREA



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

(3)

Title



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



(ii) State the type of correlation from the scatter diagram you have drawn in (a)(i).

(1)

.....

.....

.....

(b) Explain **one** improvement Ferdinand could make to his investigation.

(2)

.....

.....

.....

.....

.....

.....

.....

(Total for Question 4 = 6 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

5 Rosa is a psychologist who works with families who need help. She has assessed a family who have been referred to her due to their aggression.

The father of the family frequently shouts at the children and throws objects at walls. The eldest two children often fight with each other, which led to one of the children having to go to hospital for treatment.

Rosa believes that genes play a role in the aggression displayed by the family.

(a) Describe the role genes may play in the family's aggression.

(3)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(b) Explain **one** weakness of the role of genes in explaining the family's aggression.

(2)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 5 = 5 marks)



6 Evaluate light therapy as a treatment for seasonal affective disorder.

(8)

Area with horizontal dotted lines for writing.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 6 = 8 marks)

TOTAL FOR SECTION A = 34 MARKS



P 6 6 6 1 7 A 0 1 5 3 2

SECTION B

Learning Theories And Development

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

- 7** In your studies of learning theories and development, you will have learned about operant conditioning.

Describe, using an example, what is meant by the term 'primary reinforcement' as used in operant conditioning.

.....

.....

.....

.....

.....

.....

.....

(Total for Question 7 = 2 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

8 Xuanye has carried out some research into the number of times children repeated a behaviour. He took the names of all the children aged four years old in his village. He put the names into a computer programme, which then selected his sample. There was an equal chance for each child to become part of the sample.

Xuanye observed the children for 10 minutes. He tallied how many times they displayed a behaviour after they had received a reward for the first time they demonstrated that behaviour.

(a) (i) Identify the sampling technique Xuanye used to collect his participants.

(1)

.....

.....

.....

(ii) Explain **one** strength of using the sampling technique you identified in (a)(i) for Xuanye's study.

(2)

.....

.....

.....

.....

.....

.....



- (b) Calculate the standard deviation for the data gathered by Xuanye, where the sum of the differences² is 48 and $n = 6$.

You **must** substitute the data into the correct formulae and give your answer to **one** decimal place.

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

(3)

Space for calculations

Standard deviation =

(Total for Question 8 = 6 marks)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

9 In your studies of learning theories and development, you will have conducted a practical investigation.

(a) Describe the procedure of your learning theories and development practical investigation.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(b) Explain **one** strength of your learning theories and development practical investigation in terms of validity.

(2)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



(c) Explain **one** improvement you could have made to you learning theories and development practical investigation in terms of reliability.

(2)

.....

.....

.....

.....

.....

.....

.....

(Total for Question 9 = 8 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

10 (a) Describe the object relations school of thought as a therapy/treatment.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

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

(2)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 10 = 6 marks)



11 Explain **two** weaknesses of classical conditioning as an explanation of human behaviour.

1

.....

.....

.....

.....

.....

2

.....

.....

.....

.....

.....

(Total for Question 11 = 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



12 Assess the contemporary study by Capafóns et al. (1998) in terms of reliability and validity.

(8)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.



P 6 6 6 1 7 A 0 2 3 3 2

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 12 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 20 horizontal dotted lines.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 20 horizontal dotted lines.

(Total for Question 13 = 12 marks)



P 6 6 6 1 7 A 0 2 7 3 2

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 20 sets of horizontal dotted lines.



P 6 6 6 1 7 A 0 2 9 3 2

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 20 horizontal dotted lines.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 28 horizontal dotted lines.

(Total for Question 14 = 16 marks)

TOTAL FOR SECTION C = 28 MARKS

TOTAL FOR PAPER = 96 MARKS



P 6 6 6 1 7 A 0 3 1 3 2

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE

