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 18 October 2018

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 ▶

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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.

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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.

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SECTION A

BIOLOGICAL PSYCHOLOGY

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

1 (a) State **one** neurotransmitter that affects human behaviour.

(1)

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(b) Explain **one** weakness of using neurotransmitters to explain human behaviour.

(2)

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(Total for Question 1 = 3 marks)

2 (a) Describe how a CAT scan is used in biological psychology.

(2)

(b) Explain **one** strength and **one** weakness of the use of CAT scans in biological psychology.

(4)

Strength

Weakness

(Total for Question 2 = 6 marks)

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3 Gabriella is going to another country for a holiday; it is eight hours behind the time of her home country. She is concerned she will want to sleep during the day for the first few days of her holiday.

Gabriella plans to eat her usual evening meal when she arrives, even though it will be early morning. Her friend suggests she uses external zeitgebers to help regulate her sleep-wake cycle.

(a) Describe how Gabriella can use external zeitgebers to regulate her sleep-wake cycle while she is on holiday.

(3)

(b) Explain **one** strength and **one** weakness of Gabriella using external zeitgebers to regulate her sleep-wake cycle.

(4)

Strength

Weakness

(Total for Question 3 = 7 marks)

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4 Tau has investigated whether there is a correlation between the average amount of sleep students have in a week and their performance in exams. He put a notice up in the local school and asked for people who were interested in taking part in his investigation to add their name to the notice.

(a) Give **two** operationalised variables Tau may have used in his investigation.

(2)

1 .....

.....

2 .....

.....

(b) Identify the sampling technique Tau used in his investigation.

(1)

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(c) Explain **one** weakness of the investigation Tau carried out in terms of generalisability.

(2)

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Tau used a Spearman's rank test on his data to decide whether his results were significant or not.

(d) Give **two** reasons why Tau used a Spearman's rank test on his data.

(2)

1 .....

.....

2 .....

.....

Tau used $p \leq 0.01$ as his level of significance for a one-tailed test. Tau had twenty participants.

(e) Identify the critical value for a Spearman's rank test for Tau's data.

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

(1)

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Tau made a type II error when deciding whether his results were significant or not.

(f) Explain why Tau made a type II error.

(2)

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(Total for Question 4 = 10 marks)

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5 Evaluate the role of infradian rhythms on the menstrual cycle.

(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 (a) Describe the process of classical conditioning.

(4)

(b) Explain **one** strength and **one** weakness of classical conditioning.

(4)

Strength

Weakness

(Total for Question 6 = 8 marks)

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7 Jayant carried out an observation on children's behaviour with the permission of their parents.

He gathered qualitative data about the children's play, such as whether they played games with rules or played games without rules. Jayant also recorded how the children interacted with each other in terms of their body language and what they said.

(a) Describe how Jayant would carry out a thematic analysis on his qualitative data.

(4)

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Jayant also observed whether children of different ages played in same sex groups or mixed sex groups. He recorded this information in the form of quantitative data.

- In Condition A, he observed children aged three years old and below.
- In Condition B, he observed children aged six years old and above.

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

	Number of children playing in same sex groups	**Number of children playing in mixed sex groups**
Condition A Children aged three years and below.	3	8
Condition B Children aged six years and above.	9	2

Table 1

(b) Calculate the percentage of children who played in mixed sex groups for Condition A.

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

(1)

Space for calculations.

Percentage of children who played in mixed sex groups for Condition A .....

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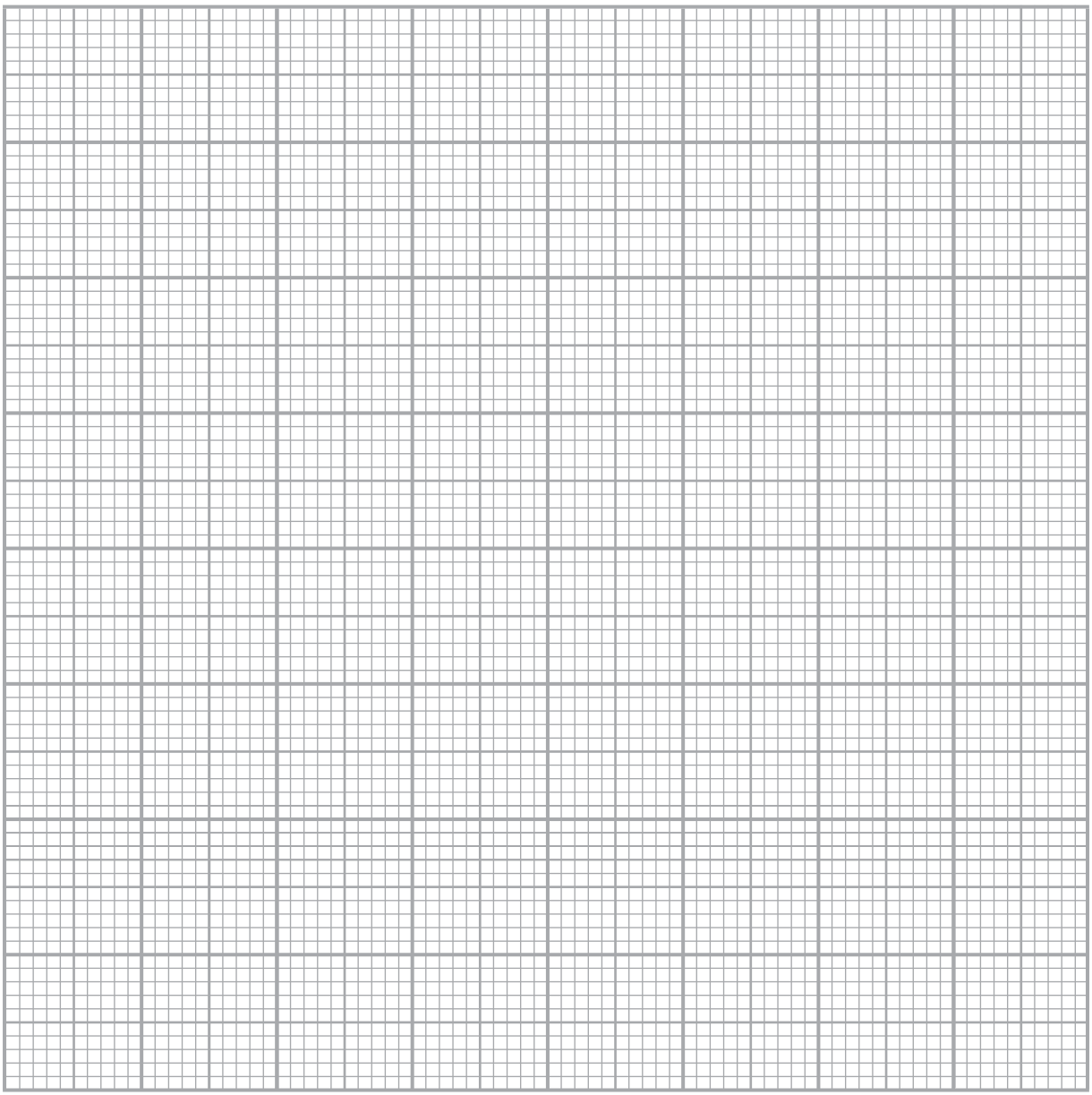
(c) Draw an appropriate graph for the data in **Table 1**.

(3)

Title



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(d) Explain **one** conclusion that Jayant could have drawn from the data in **Table 1**.

(2)

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(Total for Question 7 = 10 marks)

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QUESTION 8 BEGINS ON THE NEXT PAGE.

8 In your studies of learning theories and development, you will have learned about one of the following contemporary studies in detail.

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

(a) Explain **two** strengths of your chosen contemporary study in terms of reliability.

(4)

Chosen study

Strength 1

Strength 2

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(b) Explain **one** improvement that could be made to the sample selection in your chosen contemporary study.

(2)

(c) Explain **one** way the credibility of the data gathered could be improved in your chosen contemporary study.

(2)

(Total for Question 8 = 8 marks)

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9 Tammy lives in Spain and has just been arrested for stealing a car. Once she had been arrested, the police realised that her sister was also on police files for stealing cars. When the police interviewed Tammy she admitted that this was not the first time she had stolen a car, and that she gets excited when driving stolen cars.

Discuss social learning theory as an explanation of Tammy's behaviour.

You must refer to the context in your answer.

(8)

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(Total for Question 9 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

SECTION C

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

10 In your studies of learning theories and development, you will have learned about the contemporary study by Capafóns et al. (1998).

Evaluate the contemporary study by Capafóns et al. (1998).

(12)

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(Total for Question 10 = 12 marks)

11 Xia has recently been in trouble for fighting. In the latest incident, Xia hit a shop worker when the shop worker tried to stop her leaving the shop without paying for the food she had in her bag. The shop worker called the police.

Xia says that she cannot help her aggression as her father is also aggressive and she has inherited his genes. Xia's friends think that she can help her aggression and she is only aggressive because she gets rewarded for her behaviour.

Assess the role of genes and operant conditioning as explanations of Xia's aggression.

You must make reference to the context in your answer.

(16)

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(Total for Question 11 = 16 marks)

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

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