GradeMax

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 ▶

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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) 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)

2 (a) Describe research into the role of hormones in aggression.

(4)

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(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)

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)

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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

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

(3)

Title

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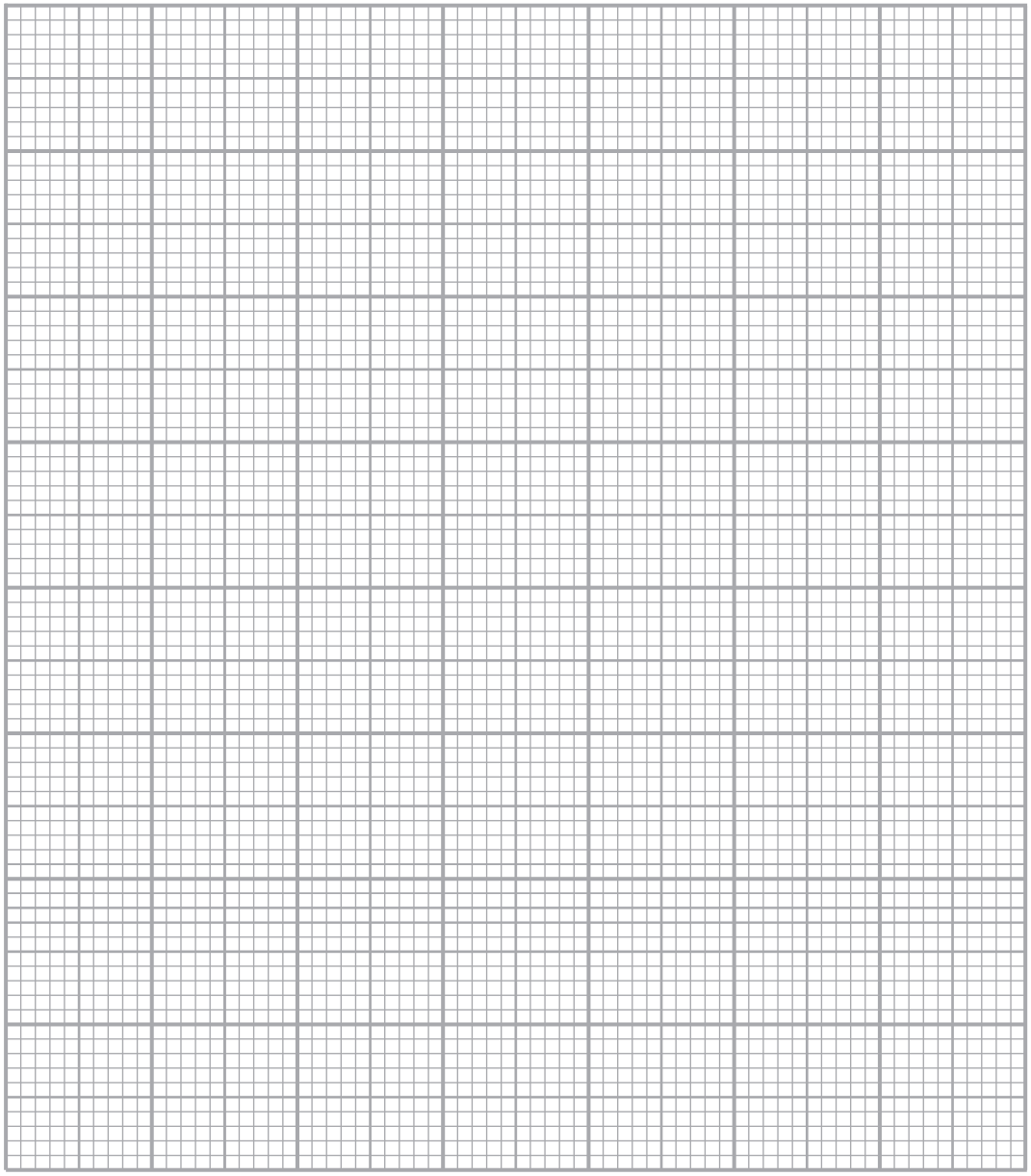

(ii) State the type of correlation from the scatter diagram you have drawn in (a)(i).

(1)

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

(2)

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(Total for Question 4 = 6 marks)

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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)

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(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 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.

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(Total for Question 7 = 2 marks)

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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)

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

(2)

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(b) Calculate the standard deviation for the data gathered by Xuanye, where the sum of the differences^2 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)

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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)

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(Total for Question 9 = 8 marks)

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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.

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(Total for Question 11 = 4 marks)

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

(8)

(Total for Question 12 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

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SECTION C

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

13 Philippe is 27 years old. He finds it hard to maintain a romantic relationship. He has just separated from his partner. Philippe's partner said that Philippe was looking for a mother not a romantic partner. The partner also claimed that Philippe had deliberately caused arguments, though Philippe denies this.

Philippe has started smoking cigarettes again. His home is messier than usual now there is no one else there to help with the cleaning.

Evaluate Freud's psychosexual stages of development as an explanation of Philippe's behaviour.

You must make reference to the context in your answer.

(12)

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(Total for Question 13 = 12 marks)

14 Henrietta has been in trouble for her aggression. She has poured a drink over a customer after they complained about the service at the restaurant she works at. Her boss says that if Henrietta is aggressive again to someone at work she will be fired.

Henrietta's parents have said that she has to look for somewhere else to live after she threw a book at her younger brother. Her father thinks Henrietta's aggression is due to her watching the behaviour of the female lead in a martial arts film. Her mother thinks that the aggression is due to damage to Henrietta's prefrontal cortex after she fell down some stairs.

To what extent do social learning theory and the prefrontal cortex explain Henrietta's behaviour?

You must make reference to the context in your answer.

(16)

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(Total for Question 14 = 16 marks)

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

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