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 16 May 2019

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. Write your answers in the spaces provided.

1 In your studies of biological psychology you will have learned about the following classic study:

- Raine et al. (1997).

(a) Describe the procedure of Raine et al. (1997).

(3)

(b) Explain **one** strength and **one** weakness of the study by Raine et al. (1997).

(4)

Strength

Weakness

(c) Explain how the study by Raine et al. (1997) could be improved in terms of validity.

(2)

(Total for Question 1 = 9 marks)

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QUESTION 2 BEGINS ON THE NEXT PAGE.

2 Hassan is investigating the effect of time exposed to the sun and self-reported mood. He asks his friends to record the amount of time in hours they spend in the sun during one month and he also asks them to rate their mood using a questionnaire. His friends rated their mood from 1-5 (1=very bad mood, 5=very good mood).

Hassan wants to see whether there is a correlation between the time exposed to the sun and self-reported mood.

The results are shown in **Table 1.**

	Time exposed to the sun in a month (hours)	**Rank 1**	**Self-reported mood**	**Rank 2**	**d**	**d^2**
Participant 1	110	6.5	5	7.5		
Participant 2	100	5	4	5.5		
Participant 3	50	1	1	1		
Participant 4	70	3	3	3.5		
Participant 5	65	2	2	2		
Participant 6	120	8	5	7.5		
Participant 7	110	6.5	4	5.5		
Participant 8	80	4	3	3.5		
					Total:	

Table 1

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(a) (i) Complete **Table 1** and calculate Spearman's Rank correlation coefficient for Hassan's study.

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

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

(4)

Space for calculations

Spearman's Rank correlation coefficient .....

(ii) Interpret your Spearman's Rank correlation coefficient from (a)(i) in terms of strength **and** direction.

(2)

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(b) Hassan was planning to test the significance of his result. He could not understand the difference between p=0.05 and p=0.01.

Explain the difference between p=0.05 and p=0.01 for Hassan's study.

(2)

(c) Explain **one** weakness of using a correlation for Hassan's study.

(2)

(Total for Question 2 = 10 marks)

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3 During your studies you will have conducted a practical investigation for biological psychology.

(a) Describe the results of your practical investigation for biological psychology.

(3)

(b) Explain **one** strength of using a correlation for your practical investigation for biological psychology.

(2)

(c) Justify **one** ethical consideration you made when conducting your practical investigation for biological psychology.

(2)

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(Total for Question 3 = 7 marks)

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4 Grei has recently been arrested for fighting. He was removed from his school when he was younger due to being aggressive towards other children and shouting at his teachers. More recently Grei pushed his father and swore aggressively at his mother.

He suffered a brain injury when he was a child and his doctor has suggested this could be the reason for his aggressive behaviour.

Discuss how the different brain areas and brain functioning could account for Grei's aggressive behaviour.

You must make reference to the context in your answer.

(8)

(Total for Question 4 = 8 marks)

TOTAL FOR SECTION A = 34 MARKS

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SECTION B

LEARNING THEORIES AND DEVELOPMENT

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

5 (a) Describe the results and/or conclusions of Skinner's (1948) Superstition in the pigeon study.

(3)

(b) Explain **one** weakness of Skinner's (1948) Superstition in the pigeon study.

(2)

(Total for Question 5 = 5 marks)

6 Sandy is in her geography class with her teacher Mr Johnson.

Sandy talks to her friend and is told off by Mr Johnson. She later answers a question correctly and Mr Johnson gives her a sticker. Mr Johnson checks her homework and because Sandy has submitted all her work on time she is allowed to miss a class test.

Describe the following features of operant conditioning using an example from the context above.

(a) Positive reinforcement

(2)

(b) Negative reinforcement

(2)

(Total for Question 6 = 4 marks)

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7 Priya wanted to see whether there was a difference in the number and type of questions answered during lessons by males and females. Priya decided to conduct a naturalistic observation and wanted to collect both quantitative and qualitative data.

(a) Describe how Priya could carry out her naturalistic observation.

(4)

(b) Explain **two** weaknesses of using a naturalistic observation.

(4)

1 .....

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2 .....

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(c) Explain **one** way to improve a naturalistic observation in terms of reliability.

(2)

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(Total for Question 7 = 10 marks)

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QUESTION 8 BEGINS ON THE NEXT PAGE.

8 Keith wanted to see how effective systematic desensitisation therapy was for the fear of snakes.

Keith sampled 12 participants who had an existing fear of snakes. He collected a baseline measure of their self-reported fear of snakes on a Likert scale from 1-7, where 1 indicated no fear and 7 indicated extreme fear.

After systematic desensitisation therapy, the participants again rated their fear of snakes.

The results of Keith's study are shown in **Table 2**.

Participant	Self-reported fear of snakes before therapy	Self-reported fear of snakes after therapy
A	7	6
B	6	5
C	7	4
D	6	1
E	5	4
F	6	5
G	6	3
H	7	2
I	5	4
J	4	1
K	5	4
L	7	6
Mean	**5.92**	**3.75**

Table 2

(a) Identify the level of measurement of the participants' self-reported fear in **Table 2**.

(1)

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(b) Calculate the mode and range for the self-reported fear of snakes **after** therapy using the data in **Table 2**.

(2)

Space for calculations

Mode for self-reported fear of snakes **after** therapy .....

Range for self-reported fear of snakes **after** therapy .....

(c) Calculate the percentage of participants whose self-reported fear of snakes was 6 **before** therapy using the data in **Table 2**.

(1)

Space for calculations

Percentage of participants with self-reported fear of 6 **before** therapy .....

(d) Calculate the ratio of participants whose self-reported fear of snakes was 6 from **before** to **after** therapy using the data in **Table 2.**

You **must** express the ratio in its lowest possible form.

(1)

Space for calculations

Ratio of participants with self-reported fear of 6 from **before** to **after** therapy .....

(e) Explain **one** conclusion you could make using the data in **Table 2**.

(2)

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(Total for Question 8 = 7 marks)

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9 Evaluate classical conditioning as an explanation for human behaviour.

(8)

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(Total for Question 9 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

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SECTION C

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

10 You will have learned about one contemporary study from the following when studying learning theories:

- Prot (2014) Long-Term Relations Among Prosocial-Media Use, Empathy, and Prosocial Behavior
- Bastian et al. (2011) Cyber-dehumanization: Violent video game play diminishes our humanity.

Evaluate **one** contemporary study from learning theories.

(12)

Chosen study

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(Total for Question 10 = 12 marks)

11 When Kelvin went on holiday with his friends, he physically assaulted a police officer. He also screamed at a parking enforcement officer who issued him with a fine for parking his car illegally.

Kelvin has two previous convictions for armed robbery. He violently assaulted a security guard during one of these robberies.

Kelvin's family have a history of aggressive behaviour and his father is currently in prison for assault. Kelvin has also been a member of gangs since he was a teenager.

Evaluate the role of hormones and social learning theory as an explanation for Kelvin's aggressive behaviour.

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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