Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International Advanced Level

Tuesday 21 May 2024

Afternoon (Time: 2 hours)

Paper reference **WPS02/01**

Psychology

International Advanced Subsidiary
UNIT 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 value 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 In your studies on biological psychology, you will have learned about one of the following contemporary studies:

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

Chosen study .....

(a) State **two** conclusions of your chosen contemporary study.

(2)

1 .....

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2 .....

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

(2)

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(Total for Question 1 = 4 marks)

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2 Herbert conducted a study to see if there was a relationship between playing computer games and quality of sleep. He gathered his participants from one university and asked them to fill in a questionnaire.

One of the questions Herbert asked was 'How many hours a day do you spend playing computer games?'. He also asked his participants to rate their quality of sleep, from 1 being very poor quality of sleep to 7 being an excellent quality of sleep.

(a) State a fully operationalised non-directional (two-tailed) hypothesis for Herbert's study.

(2)

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Herbert analysed his data using the Spearman's rank test.

(b) Calculate Spearman's rank for the data gathered by Herbert by completing **Table 1**.

Your answers **must** be to **two** decimal places.

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

You **must** show your working out.

(4)

Number of hours a day spent playing computer games	Rank 1	Quality of sleep	Rank 2	d	d^2
2	2.5	6	5.5	–3	
3.5	4	5	4	0	
6	6	3	2	4	
4	5	2	1	4	
2	2.5	4	3	–0.5	
1	1	6	5.5	–4.5	
				Total for d^2	

Table 1

Space for calculations

Spearman's rank .....

(c) Explain **one** reason why Herbert used the Spearman's rank test for his data.

(2)

(d) Explain **one** weakness of Herbert's study about computer games and quality of sleep.

(2)

(Total for Question 2 = 10 marks)

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3 Kaiko has a regular menstrual cycle. She menstruates every 29 days. Kaiko notices that she finds certain types of men more attractive at different times throughout the 29 days. Her friends say that she becomes angrier about a week before she menstruates, but she quickly calms down when menstruation begins.

Describe the role of infradian rhythms on Kaiko's menstrual cycle.

(Total for Question 3 = 4 marks)

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4 Twin studies are often used by psychologists when researching aggression.

(a) Describe how a twin study research method could be used in biological psychology, such as when researching aggression.

(4)

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(b) Explain **one** strength and **one** weakness of using a twin study research method in biological psychology.

(4)

Strength

Weakness

(Total for Question 4 = 8 marks)

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5 Assess the role of hormones as an explanation of aggression.

(8)

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(Total for Question 5 = 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.

6 In your studies about learning theories and development, you will have learned about operant conditioning.

(a) Define, using an example, what is meant by the term 'positive reinforcement' as used in operant conditioning.

(2)

(b) Define, using an example, what is meant by the term 'negative reinforcement' as used in operant conditioning.

(2)

(c) Explain **one** strength of operant conditioning as an explanation of behaviour.

(2)

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(Total for Question 6 = 6 marks)

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7 Sophia conducted an observation to see whether children at different stages of development played games differently. She gathered her participants from a local school that had children from a variety of different ethnic backgrounds. She used a stratified sampling technique to gather her participants.

Sophia used a structured observation where she set up a room with a variety of toys. She observed the children playing through a one-way mirror. Sophia put the children into age groups and let them play with the toys for half an hour.

Sophia recorded the age of the children and whether they played next to each other or played together.

(a) Describe how Sophia could have used a stratified sampling technique to gather the children for her investigation.

(2)

(b) Explain **one** strength and **one** weakness of Sophia using a stratified sampling technique for her observation.

(4)

Strength

Weakness

(c) Explain **one** reason why Sophia may have chosen to use a structured observation.

(2)

(d) Explain **one** improvement Sophia could make to her observation.

(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 on learning theories and development you will have learned about the contemporary study by Capafóns et al. (1998).

(a) State **one** aim of the study by Capafóns et al. (1998).

(1)

(b) Describe the sample used in the study by Capafóns et al. (1998).

(3)

(c) Explain **two** weaknesses of the study by Capafóns et al. (1998).

(4)

1 .....

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2 .....

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(d) Explain **one** application of the findings from the study by Capafóns et al. (1998).

(2)

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(Total for Question 8 = 10 marks)

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9 Earl has a phobia of needles and injections. His phobia developed after he had been to the dentist and had an injection that caused him severe pain. If Earl sees a needle on the television, he must look away as it makes him feel sick. Earl once fainted at the doctors' surgery because he saw his daughter having an injection.

Earl has to travel to another country for his work and needs to have some injections to be able to enter the country. Earl has decided to try systematic desensitisation as a treatment for his phobia of needles.

Discuss systematic desensitisation as a treatment for Earl's phobia of needles.

You must make reference to the context in your answer.

(8)

(Total for Question 9 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

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SECTION C BEGINS ON THE NEXT PAGE.

SECTION C

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

10 To what extent has research been effective in explaining the circadian sleep-wake cycle?

(12)

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(Total for Question 10 = 12 marks)

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QUESTION 11 BEGINS ON THE NEXT PAGE.

11 Eliza and Fred are brother and sister. Eliza is in trouble at home for shouting at Fred. Fred was upset by the argument and so he was given some sweets by his mother to try and calm him down. Eliza said it was Fred's fault, as he threw a plate at her when they were arguing, and that was why she was shouting at him.

Eliza is also in trouble at school for throwing some food at another girl during an argument.

Their mother blames their father for the children's aggression. The father was recently reported to the police for arguing with a neighbour and threatening to hit the neighbour.

Evaluate genes and social learning theory as an explanation of Eliza and Fred'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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