Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel
International
Advanced Level

Centre Number | | | | | |

Candidate Number | | | | |

Wednesday 15 January 2020

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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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

	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 process

	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 BEGINS ON THE NEXT PAGE.

SECTION A

BIOLOGICAL PSYCHOLOGY

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

1 Describe the role of the central nervous system (CNS).

(Total for Question 1 = 3 marks)

2 Cherry carried out an experiment to investigate the effects of watching scary films on sleep. She had 10 participants aged 12 to 16 years old.

The participants were asked to write down how many hours of sleep they had on average every night over one week. Cherry then asked them to watch a scary film.

The next day, Cherry asked the participants to write down how many hours of sleep they had after watching the scary film.

(a) Identify the independent variable (IV) from the experiment conducted by Cherry.

(1)

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(b) Explain **one** strength and **one** weakness of Cherry using a repeated measures design in her experiment.

(4)

Strength

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Weakness

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The results of Cherry's experiment are shown in **Table 1**.

	Mean number of hours slept
Before watching a scary film	9.5
After watching a scary film	6.2

Table 1

(c) Explain **one** conclusion Cherry could make from the data shown in **Table 1**.

(2)

(d) Explain **one** weakness of Cherry using the mean as a measure of central tendency to analyse her results.

(2)

Cherry decided to carry out a statistical analysis on her data.

(e) Explain which statistical test Cherry could use to analyse her data.

(3)

(Total for Question 2 = 12 marks)

3 Aya has seasonal affective disorder. She has tried light therapy and found it did relieve her symptoms, but she struggled to find the time to use the light box every day. Aya has decided to try a different therapy.

(a) Describe **one** therapy, other than light therapy, that Aya could use for her seasonal affective disorder.

(4)

(b) Explain **one** weakness of the therapy that Aya could have used described in 3(a).

(2)

(Total for Question 3 = 6 marks)

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4 Kirk is 15 years old and in the adolescent stage of development. Kirk has become more aggressive, throwing objects against walls, and has started shouting at his parents.

(a) Describe the role that **one** hormone may play in Kirk's aggression.

(2)

(b) Describe the role of the pre-frontal cortex as an explanation of aggression.

(3)

(Total for Question 4 = 5 marks)

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5 Evaluate research into the role of genes in aggression.

(8)

(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 Georgia is eight years old. She is constantly getting into trouble at school for not listening to the teacher and talking to her friends. She also gets into trouble for regularly forgetting to do her homework.

Georgia's teacher decides to give Georgia a sticker every 10 minutes that she is quiet and does her work. If Georgia talks to her friends the teacher takes a sticker away from her. Once Georgia has enough stickers she can choose a sweet to eat.

(a) Identify the secondary reinforcer used by the teacher.

(1)

(b) Describe the schedule of reinforcement the teacher is using with Georgia.

(2)

(c) Georgia's mother decides to use positive punishment to make Georgia do her homework.

Describe how positive punishment could be used to teach Georgia to do her homework.

(2)

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(Total for Question 6 = 5 marks)

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7 Misaki carried out an observation to investigate whether younger drivers, aged 25 years and below, or older drivers, aged 50 years and above, were more likely to use their mobile/cell phone while driving. She used time sampling.

(a) Describe how Misaki may have carried out the observation using time sampling.

(3)

Misaki created a tally chart to gather her data.

(b) Draw a tally chart that Misaki could have prepared in order to gather her data.

(2)

Space for drawing

(Total for Question 7 = 5 marks)

8 Isak has just learnt about psychoanalysis. He is interested in what people dream about. He asked his friends to record what images they could remember from their dreams in one night.

The results are shown in **Table 2**.

	Animals	**People**	**Flying**	**Cannot remember**
Total number of times each image was dreamt about in one night	8	14	1	7

Table 2

(a) Draw an appropriate graph for the results of Isak's research from the data shown in **Table 2**.

(3)

Title

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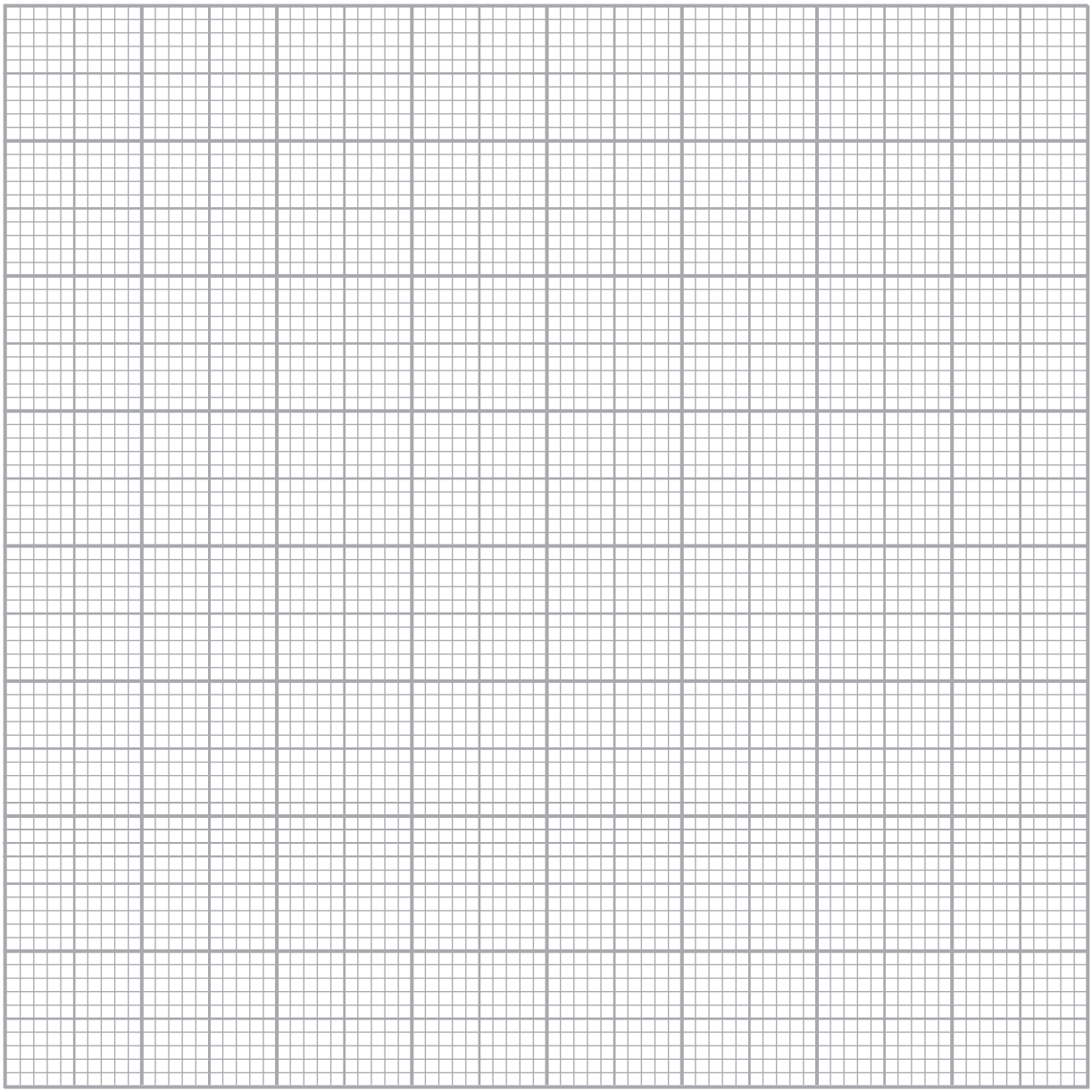

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(b) As part of his lesson about psychoanalysis Isak learned about transference.

Describe transference as a feature of psychoanalysis.

(3)

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(c) Explain **one** strength and **one** weakness of psychoanalysis.

(4)

Strength

Weakness

(Total for Question 8 = 10 marks)

9 (a) Describe what is meant by the term 'motivation' as used in social learning theory.

(4)

(b) Explain **one** strength of social learning theory as an explanation of human behaviour.

(2)

(Total for Question 9 = 6 marks)

10 Mateo is a lecturer at a university and has to carry out research as part of his job. It is the first time he has carried out research with animals.

Mateo is using chimpanzees in his new research project and has to create accommodation for them when they are not taking part in the research. The chimpanzees need to be isolated from each other during the research, which involves an electric shock.

Mateo needs to comply with Home Office Regulations to gain funding for his research.

Discuss the ethical issues of the research that Mateo is conducting in relation to Home Office Regulations.

You must refer to the context in your answer.

(8)

(Total for Question 10 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

Section C

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

11 Evaluate the role of infradian rhythms in human behaviour.

(12)

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(Total for Question 11 = 12 marks)

12 In your studies you will have learned about the following contemporary studies in detail.

- Brendgen et al. (2005)
- Capafóns et al. (1998)

Evaluate both of these contemporary studies in terms of generalisability and reliability.

(16)

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(Total for Question 12 = 16 marks)

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

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