GradeMax

Write your name here

Surname	Other names

Pearson Edexcel
International Advanced Level

Centre Number | | | | | |

Candidate Number | | | | |

Psychology

International Advanced Subsidiary
Paper 2: Biological Psychology, Learning Theories and Development

Tuesday 17 January 2016 – Afternoon
Time: 2 hours

Paper Reference
WPS02/01

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 critical 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.
- 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**
4	1.000	1.000	1.000	1.000	1.000
5	0.700	0.900	0.900	1.000	1.000
6	0.657	0.771	0.829	0.943	0.943
7	0.571	0.679	0.786	0.857	0.893
8	0.548	0.643	0.738	0.810	0.857
9	0.483	0.600	0.683	0.767	0.817
10	0.442	0.564	0.649	0.733	0.782
11	0.418	0.527	0.609	0.700	0.755
12	0.399	0.504	0.587	0.671	0.727
13	0.379	0.478	0.560	0.648	0.698
14	0.367	0.459	0.539	0.622	0.675
15	0.350	0.443	0.518	0.600	0.654
16	0.338	0.427	0.503	0.582	0.632
17	0.327	0.412	0.482	0.558	0.606
18	0.317	0.400	0.468	0.543	0.590
19	0.308	0.389	0.456	0.529	0.575
20	0.299	0.378	0.444	0.516	0.561
21	0.291	0.369	0.433	0.503	0.549
22	0.284	0.360	0.423	0.492	0.537
23	0.277	0.352	0.413	0.482	0.526
24	0.271	0.344	0.404	0.472	0.515
25	0.265	0.337	0.396	0.462	0.505
26	0.260	0.330	0.388	0.453	0.496
27	0.255	0.323	0.381	0.445	0.487
28	0.250	0.317	0.374	0.437	0.479
29	0.245	0.312	0.367	0.430	0.471
30	0.241	0.306	0.361	0.423	0.463

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 BEGINS ON THE NEXT PAGE.

SECTION A

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

1 Researchers investigated 20 students' final examination results and the relationship of the results to the number of days absent in an academic year.

The researchers used a Spearman's rank test to analyse the data and found a correlation of -0.39 between final examination results and total number of days absent.

(a) Explain the type of correlation the researchers found.

(2)

(b) State **two** reasons why the researchers used a Spearman's rank test.

(2)

1

2

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The researchers used a Spearman's rank test and decided a directional (one-tailed) hypothesis at P<0.05 level of significance was appropriate.

(c) Describe whether the results of the researchers' investigation were significant at p<0.05 for a directional (one-tailed) test.

The critical value table can be found in the formulae and statistics table at the front of this paper.

(2)

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(Total for Question 1 = 6 marks)

2 (a) Describe **one** hormone that may cause aggressive behaviour in males.

(2)

(b) Explain **one** strength and **one** weakness of research into the influence of hormones on aggressive behaviour.

(4)

Strength

Weakness

(Total for Question 2 = 6 marks)

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QUESTION 3 BEGINS ON THE NEXT PAGE.

3 A psychology research team decided to investigate whether temperature affects mood.

The team asked five volunteer participants to complete a self-report questionnaire about their mood when they were in a room that was at 11°C and then when they were in a room that was at 22°C. Participants were scored on a scale of 0 to 30, with 30 being a high positive mood score.

The results of the study are given in **Table 1** below.

Participant	Mood score (out of 30) in a room at 11°C	Mood score (out of 30) in a room at 22°C
1	10	15
2	10	20
3	5	15
4	15	25
5	20	30

Table 1

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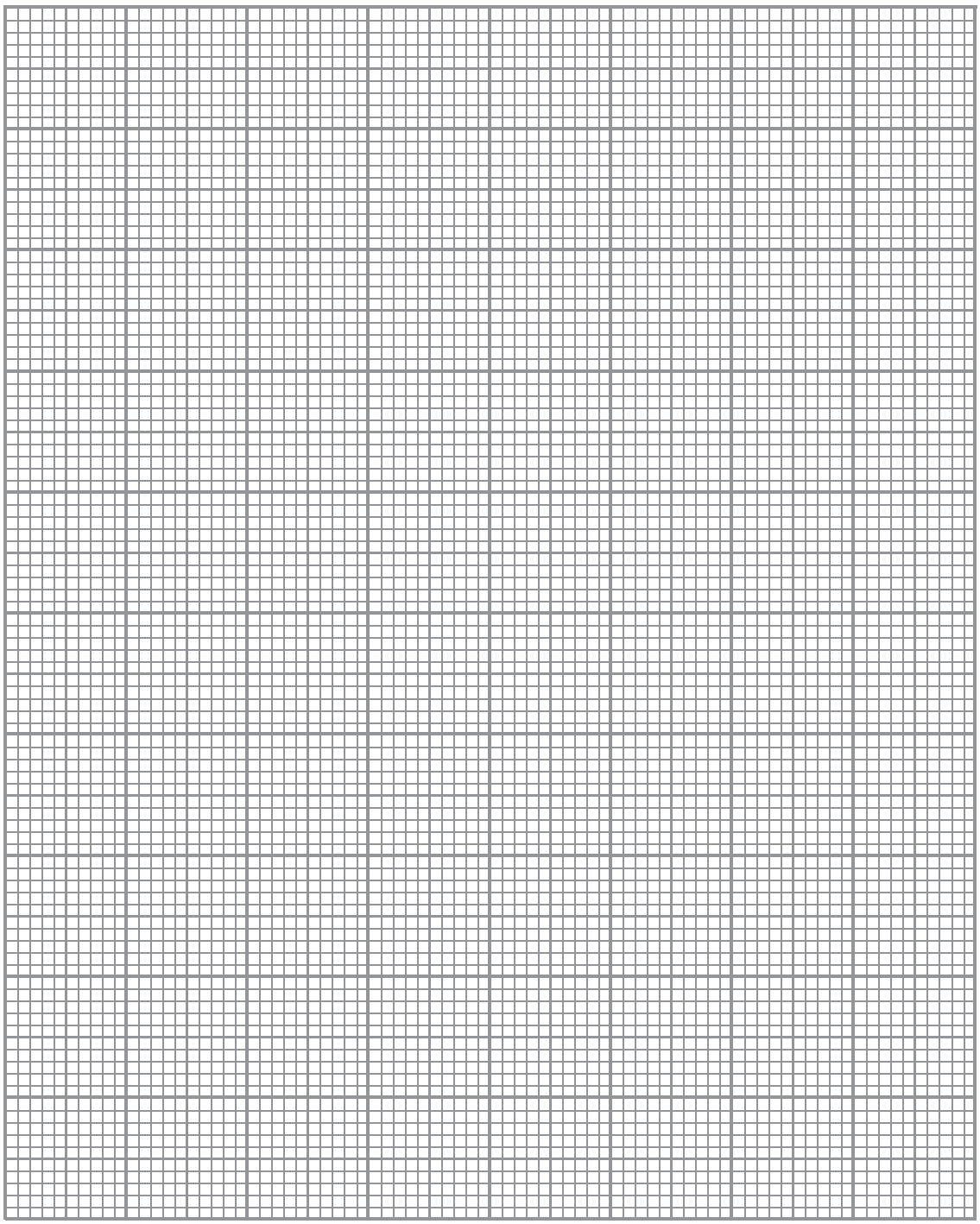
(a) Draw a scatter diagram to represent the data in **Table 1**.

(3)

Title .....



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(b) State **one** conclusion that can be drawn from the data in **Table 1**.

(1)

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(c) Explain **one** strength and **one** weakness of using self-report questionnaires to gather data on mood in this investigation.

(4)

Strength

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Weakness

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(Total for Question 3 = 8 marks)

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4 Maria found that when she went to university her menstrual cycle synchronised with the menstrual cycles of the female students she lived with.

(a) Describe why Maria's menstrual cycle synchronised with the female students she lived with.

(4)

(b) Describe **one** psychological symptom that may be experienced during menstruation.

(2)

(Total for Question 4 = 6 marks)

5 Evaluate the use of the correlational research method in psychology.

(8)

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(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 34 MARKS

SECTION B

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

6 Researchers were asked to plan a study to test whether children's television programmes showed positive or negative role model behaviour.

(a) Describe how the researchers could carry out a content analysis for their study.

(4)

(b) Explain **one** weakness of content analysis.

(2)

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(c) The mean scores of the data gathered for positive and negative role model behaviour in **five** children's television programmes are displayed in **Table 2**.

Mean score for observed positive role model behaviours	Mean score for observed negative role model behaviours
12	28

Table 2

Suggest why the researchers could select a standard deviation as an appropriate measure of dispersion.

(1)

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.....

(d) Convert the mean scores for positive and negative role model behaviours in **Table 2** to a ratio.

(1)

Space for calculations

Ratio .....

(e) Explain **one** weakness of the sample used in this study.

(2)

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(Total for Question 6 = 10 marks)

7 Rina wants to encourage her three-year-old daughter Sangita to clean her teeth.

Describe how Rina could encourage Sangita to clean her teeth using principles from operant conditioning.

(4)

(Total for Question 7 = 4 marks)

8 During your course you will have learned about Capafóns et al's (1998) contemporary study.

(a) Identify **two** aims of Capafóns et al's (1998) contemporary study.

(2)

1

2

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(b) Describe the procedure used in Capafóns et al's (1998) contemporary study.

(4)

(c) Explain **one** strength and **one** weakness of Capafóns et al's (1998) contemporary study.

(4)

Strength

Weakness

(d) Justify **one** improvement that could be made to the sample used by Capafóns et al. (1998) in their contemporary study.

(2)

(Total for Question 8 = 12 marks)

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9 Evaluate Freud's psychosexual stages in the development of personality.

(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 in this section. Write your answers in the spaces provided.

10 The structure of the brain, different brain areas and brain functioning have been put forward as an explanation of human aggression.

To what extent do you agree that this is a complete explanation of human aggression?

(12)

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(Total for Question 10 = 12 marks)

11 In your psychology course you will have learned about both biological and learning and development therapies.

Afia's Seasonal Affective Disorder seems to get worse in the winter and it has been suggested that she undergo light therapy.

Assess whether this is the only therapy Afia should consider.

(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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