Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International Advanced Level

Friday 15 May 2026

Morning (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.

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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 In your studies of biological psychology, you will have learned the classic study by Raine et al. (1997).

(a) State **two** aims of the study by Raine et al. (1997).

(2)

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2 .....

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(b) Explain **one** conclusion from the study by Raine et al. (1997).

(2)

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(c) Explain **one** strength of the study by Raine et al. (1997).

(2)

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(Total for Question 1 = 6 marks)

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2 Hikaru conducted an experiment on the effects of food on aggression in children.

Hikaru used a volunteer sampling technique. He put details of his experiment on a national parenting website and asked those parents who were interested to send him their details by email. Hikaru then sent a questionnaire to the first 100 parents who responded.

The questionnaire asked the parents how many grams of sugar their child ate in a normal day and how many acts of aggression they demonstrated in a week.

(a) Give **one** closed question Hikaru could have used in his experiment.

(1)

(b) Explain **one** weakness of the sampling technique used by Hikaru.

(2)

(c) Explain **one** ethical issue Hikaru should have considered when conducting his experiment.

(2)

One month after sending out the questionnaires, Hikaru analysed the data from the questionnaires that had been returned. He split the children into two conditions.

- Condition A: Children who had 30 grams of sugar or more a day.
- Condition B: Children who had 29 grams of sugar or less a day.

Hikaru's results are shown in **Table 1**.

	Condition A: Children who had 30 grams of sugar or more a day	**Condition B: Children who had 29 grams of sugar or less a day**
Mean number of aggressive acts in a week	23	16

Table 1

(d) Explain **one** conclusion that could be made from the data in **Table 1**.

(2)

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(e) Explain **one** improvement Hikaru could make to his investigation.

(2)

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(Total for Question 2 = 9 marks)

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3 Shaima recently got into a fight and banged her head against a wall.

Shaima almost got into another fight the last time she went out with her friends, when a stranger accidentally bumped into her. She has also been in trouble at school for shouting at a teacher.

Shaima has been more aggressive at home. Recently she kicked a wall in anger when her sister would not let her borrow some clothes.

Shaima's parents have now told her she cannot go out with her friends for a month due to her increasingly aggressive behaviour.

(a) Describe brain functioning as an explanation of Shaima's aggression.

(3)

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(b) Explain **one** strength and **one** weakness of brain functioning as an explanation of Shaima's aggression.

(4)

Strength

Weakness

(Total for Question 3 = 7 marks)

4 Huberta conducted an investigation into the effects of playing sport on sleep. She had two conditions.

- Condition A: Played less than three hours of sport a week.
- Condition B: Played more than three hours of sport a week.

(a) State the fully operationalised independent variable (IV) for Huberta's investigation.

(1)

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Huberta's results are shown in **Table 2**.

	Condition A: Played less than three hours of sport a week	**Condition B: Played more than three hours of sport a week**
Median number of hours slept per night	6	8

Table 2

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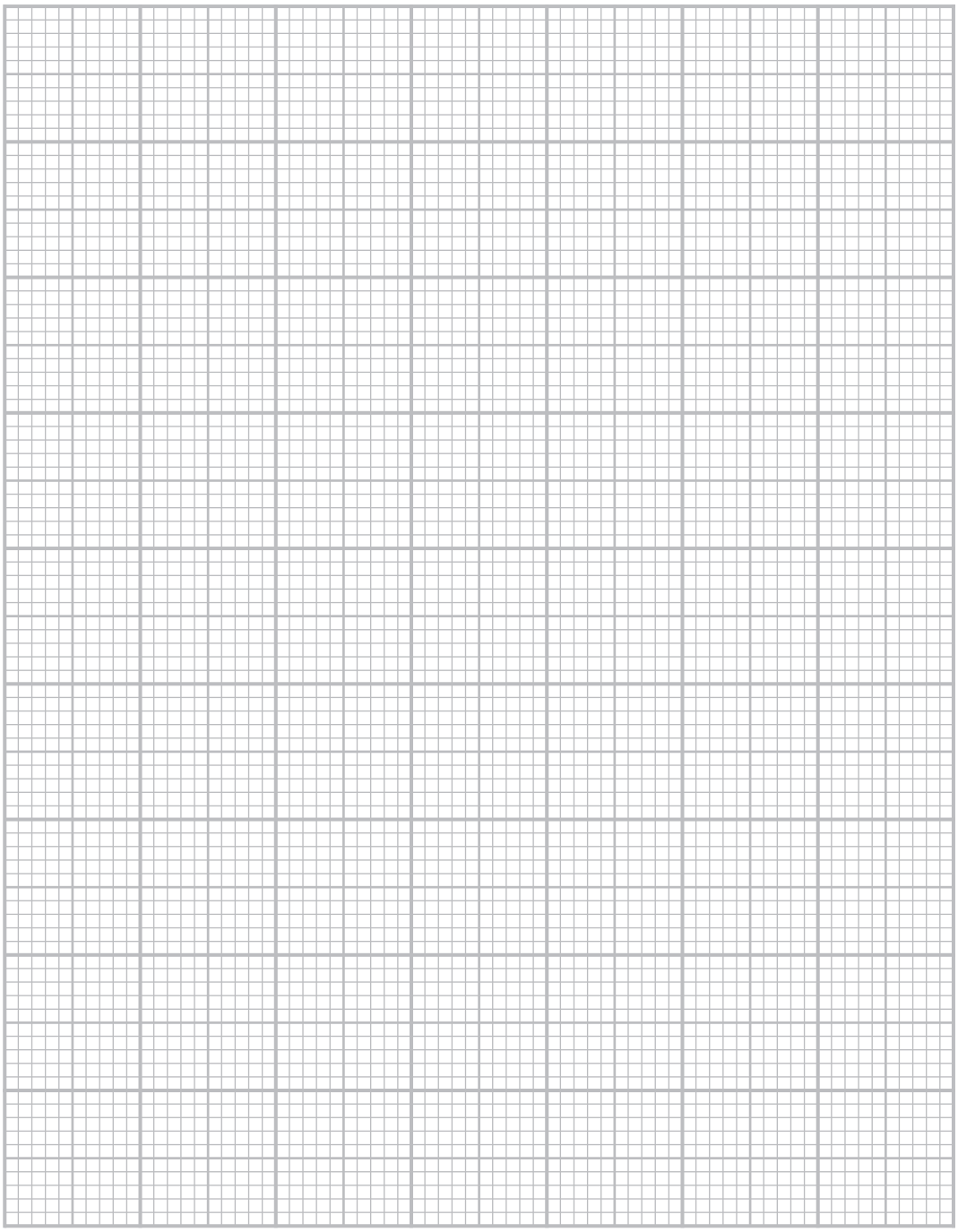
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(b) Draw an appropriate graph for the data shown in **Table 2**.

(3)

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(Total for Question 4 = 4 marks)

5 In your studies of biological psychology, you will have learned about the role of hormones in aggression.

Evaluate the role of hormones in 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 of learning theories, you will have learned about social learning theory.

(a) Describe the main features of social learning theory.

(4)

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(b) Explain **one** strength of social learning theory.

(2)

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(Total for Question 6 = 6 marks)

7 Magnus investigated the effects of rewards on people's work rates. He went to two factories that produced clothes. Each factory gave its workers a number of clothes they were expected to sew in a day.

In one factory, if the workers sewed extra clothes every day for a week, they were given a paid hour off work at the end of the month. In the other factory, the workers received no reward for sewing extra clothes.

Magnus asked each factory to record how many workers sewed extra clothes every day, how many sewed the correct number of clothes every day, and how many sewed fewer clothes every day.

(a) Describe the experimental design used in Magnus's investigation.

(2)

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(b) Calculate the chi-squared for the data gathered by Magnus by completing **Table 3**.

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

All your answers should be correct to **two** decimal places.

(4)

		Observed	Expected	O – E	$(O – E)^2$	$(O – E)^2/E$
Factory gave paid hour off work at the end of the month as a reward	**Sewed extra clothes every day**	35	19			
	Sewed the correct number of clothes every day	17	33.5			
	Sewed fewer clothes every day	9	8.5			
Factory gave no reward at the end of the month	**Sewed extra clothes every day**	3	19			
	Sewed the correct number of clothes every day	50	33.5			
	Sewed fewer clothes every day	8	8.5			
				Chi squared =		

Table 3

Space for calculations

(c) Explain **one** improvement Magnus could make to his investigation in terms of generalisability.

(2)

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(Total for Question 7 = 8 marks)

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8 In your studies of learning theories and development, you will have learned about the classic study by Watson and Rayner (1920).

(a) State **one** aim of Watson and Rayner's study (1920).

(1)

(b) Describe the procedure of Watson and Rayner's study (1920).

(3)

(c) Explain **one** weakness of Watson and Rayner's study (1920).

(2)

(Total for Question 8 = 6 marks)

9 In your studies of learning theories, you will have learned about observations.

(a) Describe the observational research method as it is used in psychology.

(4)

(b) Explain **one** strength of the observational research method as it is used in psychology.

(2)

(Total for Question 9 = 6 marks)

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10 Shakira is a dance teacher. She is in charge of teaching dance routines to groups of children. The dance routines must be learnt for a show that is in two months' time.

One group of children quickly learnt the dance routine. Shakira regularly praised this group of children for their dancing and gave the best five dancers a sticker every week. Once a child had got four stickers, the child could receive some food as a prize.

Another group of children found it difficult to learn the dance routine. Shakira found that she often shouted at these children when they got the routine wrong. She regularly told children in this group how they would have to practise more if they do not want to be excluded from the show.

Discuss operant conditioning in relation to Shakira teaching the dance routines to the children.

You **must** make reference to the context in your answer.

(8)

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(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 Liesel has got a new job in which she has to work during the night. She finds that she is very tired at work, even though she has slept during the daytime.

Liesel thinks this is because she has not slept very well when she gets home from work in the morning. She finds it often takes her a few hours to get to sleep. Liesel often wakes up in the middle of the afternoon. She finds she cannot get back to sleep even though she does not need to get up for work.

Assess the role of internal pacemakers in the regulation of Liesel's sleep-wake cycle.

You **must** make reference to the context in your answer.

(12)

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(Total for Question 11 = 12 marks)

12 In your studies of biological psychology and learning theories and development, you will have learned about different treatments and therapies.

Evaluate light therapy and systematic desensitisation as treatments/therapies.

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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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