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Candidate surname					Other names			
Pearson Edexcel Level 3 GCE		Centre Number			Candidate Number			
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Monday 18 May 2020								
Afternoon (Time: 2 hours)					Paper Reference 9PS0/01			
Psychology								
Advanced								
Paper 1: Foundations in Psychology								
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 90.
- 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

N	Level of significance for a one-tailed test				
	0.05	0.025	0.01	0.005	0.0025
N	Level of significance for a two-tailed test				
	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

$$X^2 = \sum \frac{(O-E)^2}{E}$$

$$df = (r - 1)(c - 1)$$

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.



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Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

		N_b																	
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
N_a																			
$p \leq 0.05$ (one-tailed), $p \leq 0.10$ (two-tailed)																			
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25			
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32			
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39			
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47			
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54			
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62			
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69			
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77			
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84			
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92			
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100			
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107			
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115			
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123			
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130			
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138			

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N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.01$ (one-tailed), $p \leq 0.02$ (two-tailed)																
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
18	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
19	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.025$ (one-tailed), $p \leq 0.05$ (two-tailed)																
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
17	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
18	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
20	20	27	34	41	48	55	62	69	76	83	90	98	105	112	119	127



N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.005$ (one-tailed), $p \leq 0.01$ (two-tailed)																
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

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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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

<i>n</i>	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
	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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Answer ALL questions.

SECTION A: SOCIAL PSYCHOLOGY

- 1** Mrs King asked her class of 29 students to stop talking whilst she explained to them what they were required to do during that lesson. The students did not follow the instruction given by Mrs King and continued talking.

Using social impact theory, describe why the students ignored Mrs King's instruction and continued to talk.

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(Total for Question 1 = 2 marks)



2 Jake wanted to find out if people obeyed the 30 miles per hour (mph) speed restriction in his local town. He recorded the driving speed of 200 cars on a Saturday afternoon and plotted the data on a frequency distribution curve.

(a) Identify the measure of central tendency shown at data points **A**, **B** and **C** on the frequency distribution curve for Jake's data, shown in **Figure 1**.

(3)

A frequency distribution curve to show the driving speed of cars (mph) recorded on a Saturday afternoon

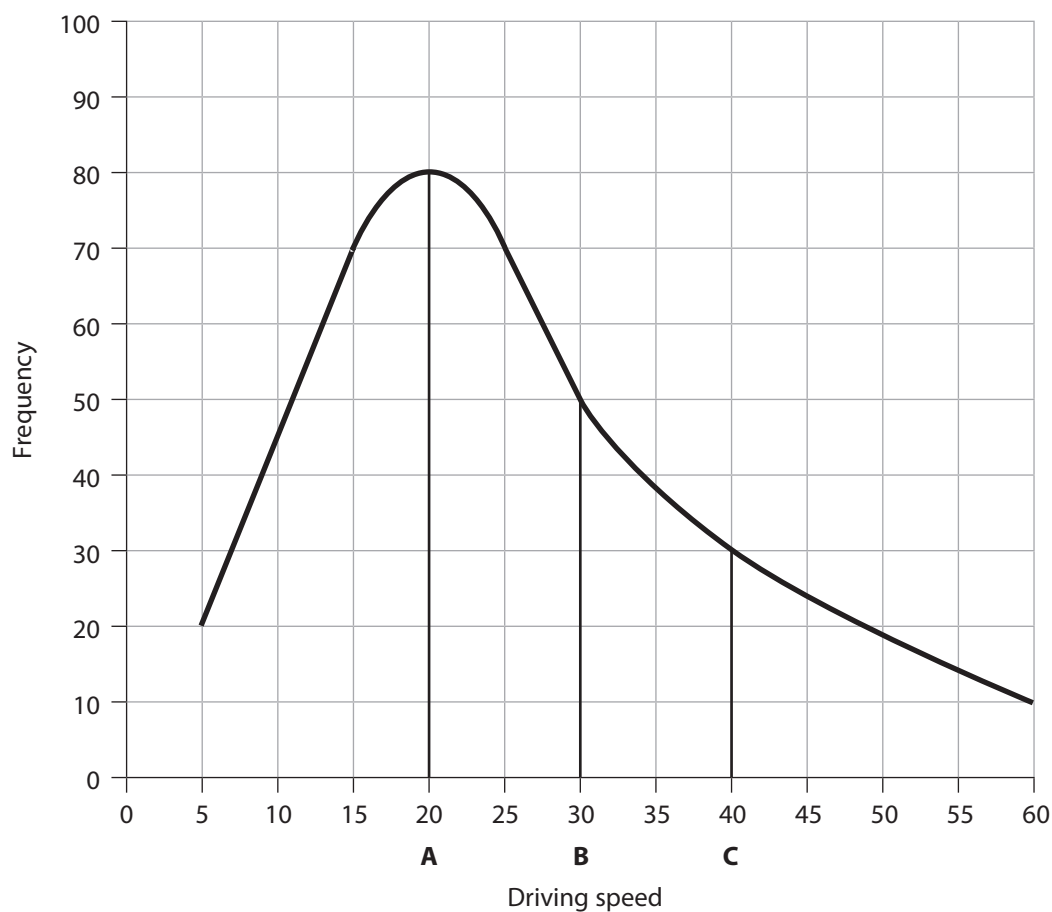


Figure 1

Measure of central tendency shown at data point **A**

Measure of central tendency shown at data point **B**

Measure of central tendency shown at data point **C**

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(b) Interpret the data Jake gathered about driving speeds in his local town.

(1)

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(Total for Question 2 = 4 marks)

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(Total for Question 4 = 8 marks)

TOTAL FOR SECTION A = 18 MARKS



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SECTION B: COGNITIVE PSYCHOLOGY

- 5** Becca is trying to memorise the name and location of different organs in the human body for a Biology test.

Describe **one** feature of the working memory model (Baddeley and Hitch, 1974) that could help Becca revise effectively for her test.

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(Total for Question 5 = 2 marks)

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6 (a) Using an example, describe what is meant by semantic memory as proposed by Tulving (1972).

(2)

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(b) Explain **one** strength of Tulving's (1972) explanation of long-term memory.

(2)

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(Total for Question 6 = 4 marks)



7 Charles investigated the influence of an interference task on recall from short-term memory.

The same participants had to recall a word list after an interference task (Condition A) and later recall a word list with no interference task (Condition B).

The results from Charles’s investigation are shown in **Table 1**.

(a) Complete **Table 1** and calculate the Wilcoxon Signed Ranks test for Charles’s study.

(4)

Participant	Recall after an interference task (Condition A)	Recall with no interference task (Condition B)	Difference	Rank	Rank if positive	Rank if negative
A	8	12				
B	9	11				
C	6	12				
D	8	8				
E	10	9				
F	10	11				
G	5	10				
H	5	4				
Total:						

Table 1
SPACE FOR CALCULATIONS

Wilcoxon T value

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(b) Using the Wilcoxon T value that you calculated for 7(a), determine whether Charles's data were significant at $p \leq 0.025$ for a directional (one-tailed) hypothesis.

(1)

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(Total for Question 7 = 5 marks)

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8 Assess whether case studies of brain-damaged patients are an effective method for investigating human memory.

(8)

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(Total for Question 8 = 8 marks)

TOTAL FOR SECTION B = 19 MARKS



SECTION C: BIOLOGICAL PSYCHOLOGY

9 David was in a restaurant with his girlfriend who was talking to another man. He felt the other man was being too friendly towards his girlfriend. David got into a fight with the other man.

(a) Describe how evolution and natural selection could account for David's aggression.

(2)

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(b) Explain **one** weakness of the role of evolution and natural selection as an explanation of David's aggression.

(2)

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(Total for Question 9 = 4 marks)

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11 Evaluate Freud's psychodynamic explanation of aggression.

(8)

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(Total for Question 11 = 8 marks)

TOTAL FOR SECTION C = 16 MARKS



SECTION D: LEARNING THEORIES

12 When Arthur was three years old a chicken chased him and pecked at him. This frightened Arthur and made him cry, resulting in alektorophobia (a fear of chickens).

Identify the conditioned stimulus (CS) and conditioned response (CR) from the scenario.

Conditioned stimulus (CS)

Conditioned response (CR)

(Total for Question 12 = 2 marks)

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13 In your studies of learning theories you will have conducted a practical investigation.

(a) Describe the procedure from your learning theories practical investigation.

(3)

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(b) Explain **two** improvements that you could make to your learning theories practical investigation.

(4)

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(Total for Question 13 = 7 marks)



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14 Astrid has a fear of flying. She experienced a flight with heavy turbulence when returning from a holiday and since then has been unable to board a plane. Astrid has tried going on a flight simulator to help her with her fear of flying, however this made her panic and the simulator had to be stopped for Astrid to get off.

Her friend is getting married overseas next year. Astrid wants to attend the wedding and will need to fly there, so she is considering systematic desensitisation to reduce her fear of flying.

Discuss how systematic desensitisation could be used to help Astrid with her fear of flying.

(8)

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(Total for Question 14= 8 marks)

TOTAL FOR SECTION D = 17 MARKS



SECTION E: ISSUES AND DEBATES

15 Assess how far learning theories have developed over time.

(8)

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(Total for Question 15 = 8 marks)



16 Evaluate issues of social control from social and biological psychology.

(12)

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(Total for Question 16 = 12 marks)

TOTAL FOR SECTION E = 20 MARKS

TOTAL FOR PAPER = 90 MARKS

