

Write your name here

Surname

Other names

Pearson Edexcel
Level 3 GCE

Centre Number

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Candidate Number

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Psychology

Advanced

Paper 3: Psychological skills

Sample assessment materials for first teaching
September 2015
Time: 2 hours

Paper Reference

9PS0/03

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 80.
- 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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PEARSON

FORMULAE AND CRITICAL VALUE 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.

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

<i>N_a</i>	<i>N_b</i>															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

***p* ≤ 0.05 (one-tailed), *p* ≤ 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

<i>N_a</i>	<i>N_b</i>															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

***p* ≤ 0.01 (one-tailed), *p* ≤ 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_b															
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
N_a																	
$p \leq 0.025$ (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_b															
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
N_a																	
$p \leq 0.005$ (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.

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.

Answer ALL questions.

SECTION A: RESEARCH METHODS

1 'Larks and Owls' Study

Researchers used a questionnaire to find out from 500 students whether they preferred carrying out cognitive activities in the morning or in the evening. The students who preferred mornings were called 'Larks' and those who preferred evenings were called 'Owls'. Students found to have no preference were called 'In Betweens'. The results of the questionnaire found 315 'Owls', 53 'Larks' and 132 'In Betweens'.

The researchers wanted to test whether 'Larks' were better at cognitive activities in the morning and 'Owls' better in the evening, as predicted from the preferences.

Using the 368 students who were 'Larks' or 'Owls', the researchers asked them to perform cognitive activities in controlled conditions. There were two types of cognitive activity: one tested creativity and the other tested analysis skills. Each type of activity had 20 cognitive tasks for the students to complete.

Each student had to complete all 40 cognitive tasks twice on one day, between 9am and 10am in the morning, then again between 3pm and 4pm in the afternoon. The scores indicate the number of tasks in each type of cognitive activity that the students performed correctly.

Table 1 shows the mean number of tasks out of 40 that were correct.

	9 am to 10 am		Total	3 pm to 4 pm		Total	Overall total
	Creative	Analysis		Creative	Analysis		
'Larks'	10	15	25	6	14	20	45
'Owls'	8	12	20	12	15	27	47
Totals	18	27	45	18	29	47	92

Table 1

(Source: Adapted from Roberts and Kyllonen (1999))

(a) Analyse the data provided in **Table 1** to explain **three** conclusions that the researchers might draw from these results.

(6)

Conclusion 1

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Conclusion 2

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Conclusion 3

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Table 2 shows the mean number of tasks out of 40 that were correct for 'Larks' and 'Owls' in the morning.

	9 to 10 am		Total
	Creative	Analysis	
'Larks'	10	15	25
'Owls'	8	12	20
Totals	18	27	45

Table 2

(b) Analyse the data provided in **Table 2** to explain whether the results are likely to show a significant difference.

(2)

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(c) State the null hypothesis for the 'Larks and Owls' study.

(2)

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(d) Explain how to improve the effectiveness of **two** controls used in the 'Larks and Owls' study.

(6)

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(Total for Question 1 = 16 marks)

2 A researcher carried out semi-structured interviews with five people to find out, retrospectively, about the issues they faced when using mental health services. They were aged between 8 and 18 years old. The interviews took place in a quiet room in a community-based mental health centre.

(Source from: Adapted from DeRoche and Lahman (2008))

(a) Explain how the information gathered would be different if the researchers had chosen to use an unstructured interview in this study.

(2)

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(b) A follow-on investigation was carried out to assess the issues identified with the mental health service, from the retrospective study.

A longitudinal study approach was used to follow five 8 years old until the age of 18.

Compare the longitudinal approach to the retrospective approach, giving **one** similarity and **one** difference.

(2)

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(c) Explain **two** improvements that could be made to the longitudinal approach and to the retrospective approach.

(4)

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(Total for Question 2 = 8 marks)

TOTAL FOR SECTION A = 24 MARKS

SECTION B: REVIEW OF STUDIES

- 3** A study looked at how contact between groups affected prejudice. The study used two different cultural groups of 30 people: Group 1 and Group 2.

The findings supported the hypotheses:

- The more previous contact people have had with an 'out group', the more willing they are to have contact with an 'out group'.
- The less they think that there is conflict with that 'out group', the more willing they are to interact with the group.

This suggests that perceived conflict and social contact both affect behaviour related to prejudice. 'Behaviour related to prejudice', which is whether they were prejudiced or not, was called 'behavioural intentions' in the study. The study found that these results were consistent across different status groups and in different cultures.

Results were analysed using a test for correlation.

Table 3 shows the relationship between perceived conflict, social contact and behavioural intentions (prejudice).

Group 1	Perceived conflict	Social contact
Social contact	-0.32	NO DATA
Behavioural intentions	-0.36	0.40
Group 1	Perceived conflict	Social contact
Social contact	-0.44	NO DATA
Behavioural intentions	-0.43	0.48

Table 3

1 indicates a perfect correlation, 0 indicates no correlation.

(Source from: Adapted from Gaunt, 2011))

- (a) Using the critical value table for Spearman's rank, state the best level of probability at which the results would be significant for perceived conflict and social contact for Group 1 and for Group 2.

(2)

Group 1

Group 2

(b) Explain how social identity theory supports the findings of this study.

(6)

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(Total for Question 3 = 8 marks)

4 Both Raine et al (1997) and Watson and Rayner (1920) have ethical implications.

In their study, Watson and Rayner (1920) wrote as part of their findings, 'The child started violently, his breathing was checked and the arms were raised in a characteristic manner. On the second stimulation the same thing occurred, and in addition the lips began to pucker and tremble. On the third stimulation, the child broke into a sudden crying fit.' (Watson and Rayner 1920, p2).

In their study, Raine et al. (1997) wrote, 'The key findings... are that murderers pleading guilty to NGRI (not guilty by reason of insanity) are characterized by (a) reduced glucose metabolism in bilateral prefrontal cortex... and (b) abnormal asymmetries of activity (left hemisphere lower than right)... These data... provide some general support for pre-existing biological theories of violence...' (Raine et al 1997, p502).

Evaluate the ethical issues of these studies in relation to each other, with reference to their aims and methods.

(16)

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(Total for Question 4 = 16 marks)

TOTAL FOR SECTION B = 24 MARKS

SECTION C: ISSUES AND DEBATES

5 Lu, a mother of three young children, is having trouble controlling her anger. She believes that her children are likely to show aggression themselves if she carries on behaving this way. Lu thinks that her anger might have been caused by her own mother’s behaviour. Lu has given up a successful career to be a full-time mother and, although she has the support of the children’s father when he is not at work, the everyday decisions are her responsibility.

Lu visits a therapist who plans to help her by getting her to reward herself when she is calm with the children and to stop feeling guilty about her behaviour.

Evaluate the application of social learning theory as proposed by the therapist in helping Lu. You must make reference to the context in your answer.

(Total for Question 5 = 12 marks)

6 Applications in psychology include clinical psychology, criminological psychology, child psychology and health psychology.

Assess how psychology could be used as a form of social control, with reference to any **two** of these applications.

(20)

A series of horizontal dotted lines providing space for the student to write their response to the question.

(Total for Question 6 = 20 marks)

**TOTAL FOR SECTION C = 32 MARKS
TOTAL FOR PAPER = 80 MARKS**