

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				
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**Pearson Edexcel Level 3 GCE**

Time 2 hours	Paper reference	<b>9PS0/01</b>
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**Psychology**

**Advanced**

**PAPER 1: Foundations in Psychology**

Calculators may be used.	Total Marks
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## 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

P70811A

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Q:1/1/1/



## 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**

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

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

**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.

**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**

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



$N_a$	$N_b$															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b><math>p \leq 0.01</math> (one-tailed), <math>p \leq 0.02</math> (two-tailed)</b>																
<b>5</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>6</b>	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
<b>7</b>	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
<b>8</b>	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
<b>9</b>	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
<b>10</b>	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
<b>11</b>	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
<b>12</b>	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
<b>13</b>	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
<b>14</b>	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
<b>15</b>	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
<b>16</b>	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
<b>17</b>	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
<b>18</b>	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
<b>19</b>	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
<b>20</b>	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
<b><math>p \leq 0.025</math> (one-tailed), <math>p \leq 0.05</math> (two-tailed)</b>																
<b>5</b>	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
<b>6</b>	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
<b>7</b>	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
<b>8</b>	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
<b>9</b>	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
<b>10</b>	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
<b>11</b>	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
<b>12</b>	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
<b>13</b>	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
<b>14</b>	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
<b>15</b>	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
<b>16</b>	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
<b>17</b>	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
<b>18</b>	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
<b>19</b>	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
<b>20</b>	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
<b><math>p \leq 0.005</math> (one-tailed), <math>p \leq 0.01</math> (two-tailed)</b>																
<b>5</b>	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
<b>6</b>	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
<b>7</b>	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
<b>8</b>	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
<b>9</b>	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
<b>10</b>	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
<b>11</b>	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
<b>12</b>	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
<b>13</b>	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
<b>14</b>	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
<b>15</b>	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
<b>16</b>	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
<b>17</b>	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
<b>18</b>	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
<b>19</b>	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
<b>20</b>	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: Social Psychology**

**1** In your studies of social psychology, you will have conducted a practical investigation.

(a) Describe how you gathered qualitative data in your social psychology practical investigation.

(2)

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(b) Describe how you gathered quantitative data in your social psychology practical investigation.

(2)

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- 2 Belinda investigated whether personality had an impact on levels of obedience at work. She selected 10 senior managers from different companies, five with high scores for authoritarian personality traits and five with low scores.

The participants were asked whether they would dismiss an unpopular employee based on false allegations if the company director told them to.

The results of the investigation are shown in **Table 1**.

Authoritarian personality score	Would dismiss the employee	Would not dismiss the employee
High	4	1
Low	1	4

**Table 1**

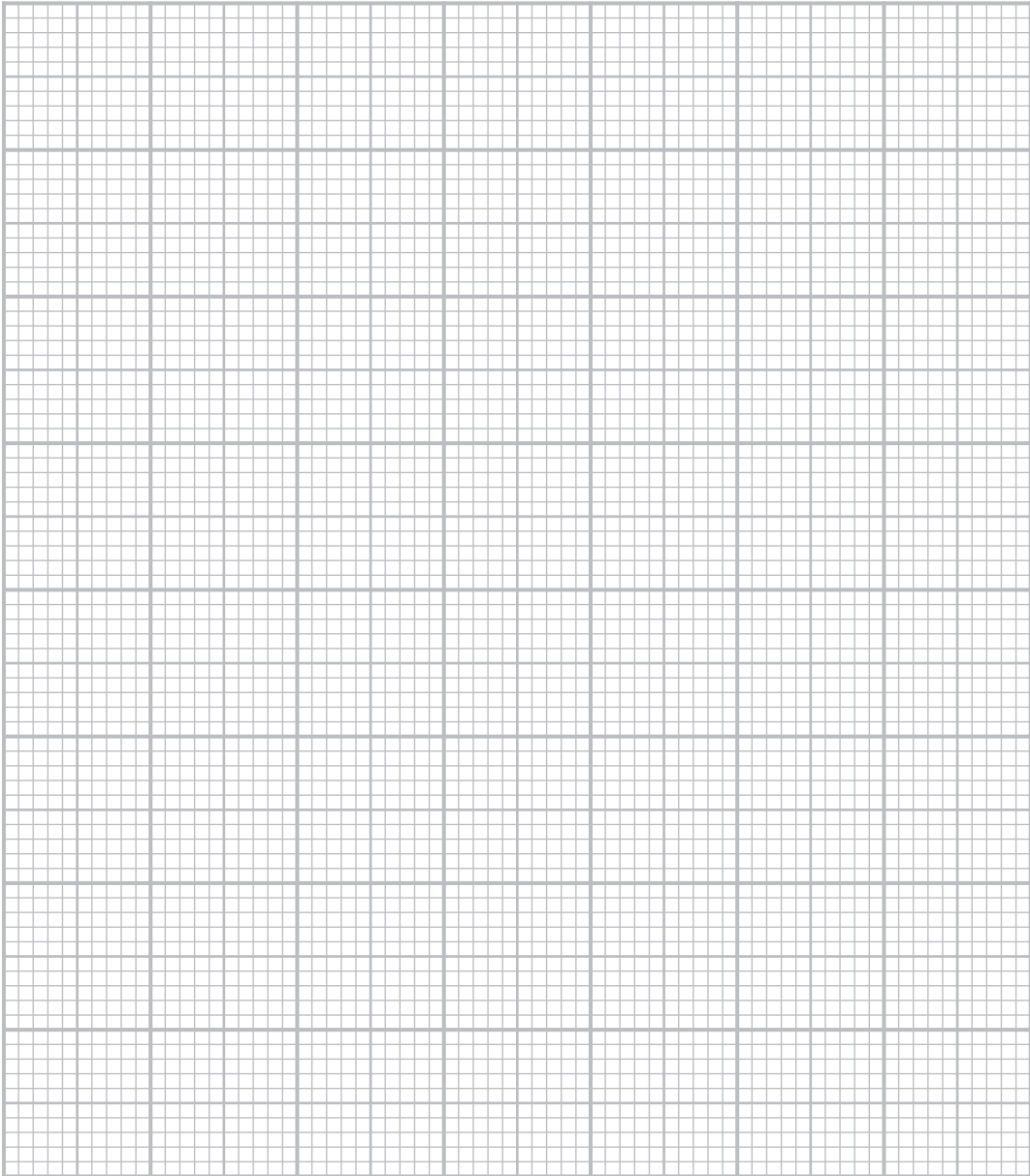


Draw a bar chart to show the number of participants with high scores for authoritarian personality who would and would not dismiss the employee.

(3)

Title .....

.....



(Total for Question 2 = 3 marks)



3 Assess how far culture can influence prejudice.

(8)

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(Total for Question 3 = 8 marks)

**TOTAL FOR SECTION A = 17 MARKS**



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**SECTION B: Cognitive Psychology**

**4** Lei investigated the effect of word length on short-term memory capacity. She used a volunteer sampling technique to gather 20 participants. Lei allocated her participants randomly to one of two conditions.

- Condition A: participants are given 14 monosyllabic words (words with only one syllable such as cat, tub, or red) to learn in 30 seconds.
- Condition B: participants are given 14 polysyllabic words (words with more than one syllable such as elephant, happiness, or carpet) to learn in 30 seconds.

Lei recorded the number of words recalled correctly by participants.

- (a) State the fully operationalised independent variable (IV) and dependent variable (DV) in Lei's investigation.

(2)

Independent variable (IV)

Dependent variable (DV)



- (b) Complete **Table 2** and calculate the Mann-Whitney U for the results of Lei's investigation.

(4)

Condition A: monosyllabic words		Condition B: polysyllabic words	
Number of words recalled correctly	Rank	Number of words recalled correctly	Rank
9	16.5	5	5
8	13.5	7	11
9	16.5	6	8
7	11	5	5
10	19	6	8
9	16.5	9	16.5
7	11	3	2
6	8	5	5
8	13.5	4	3
11	20	2	1
<b>Total</b>		<b>Total</b>	

**Table 2**

**SPACE FOR CALCULATIONS**

$$U_a = \dots\dots\dots$$

$$U_b = \dots\dots\dots$$

$$U = \dots\dots\dots$$



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- (c) Using the Mann-Whitney U value that you calculated for 4(b), determine whether Lei's data were significant at  $p \leq 0.05$  for a directional (one-tailed) hypothesis.

(1)

(Total for Question 4 = 7 marks)



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**5** Describe the working memory model (Baddeley and Hitch, 1974).

**(Total for Question 5 = 3 marks)**



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**6** In your studies of cognitive psychology, you will have learned about one of the following contemporary studies in detail:

- Schmolck et al. (2002)
- Steyvers and Hemmer (2012)
- Sebastián and Hernández-Gil (2012).

Evaluate your chosen contemporary study.

(8)

Chosen study .....



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(Total for Question 6 = 8 marks)

**TOTAL FOR SECTION B = 18 MARKS**





**SECTION C: Biological Psychology**

- 7 Tabitha wanted to investigate whether there is a difference in brain activity when people are exposed to aggressive stimuli and non-aggressive stimuli. She decided to gather a sample of female participants aged between 20 years old and 30 years old.

(a) Describe how Tabitha could use a volunteer sampling technique to gather participants for her investigation.

(2)

(b) Tabitha decides to use a PET brain-scanning technique for her investigation.

Describe how Tabitha could use a PET brain-scanning technique for her investigation.

(3)



- (c) Explain **one** strength of Tabitha using a PET brain-scanning technique for her investigation.

(2)

- (d) Explain **one** improvement that could be made to Tabitha's choice of participants.

(2)

(Total for Question 7 = 9 marks)





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(Total for Question 8 = 8 marks)

**TOTAL FOR SECTION C = 17 MARKS**

### SECTION D: Learning Theories

- 9 Ruhee receives reward points at school when she behaves extremely well, helps other students, and does extra research for her homework tasks. When she has 25 points, she can get a free snack at break time from the canteen. Ruhee always works hard to receive the points.

Using operant conditioning, describe why Ruhee works hard to receive the points.

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(Total for Question 9 = 2 marks)

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- Two weeks later Victor walked past the restaurant and could smell the same fish sauce, which made him feel sick, so he hurried past. When his friends invited him to the restaurant again, Victor said he did not want to go.

- (4)

[illegible]



(b) Explain **two** weaknesses of classical conditioning as an explanation of human behaviour.

(4)

1 .....

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2 .....

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(Total for Question 10 = 8 marks)



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11 Evaluate Bandura's (1965) Bobo doll experiment with vicarious reinforcement.

(8)

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(Total for Question 11 = 8 marks)

**TOTAL FOR SECTION D = 18 MARKS**



**SECTION E: Issues and Debates**

**12** Assess how far learning theories can be considered reductionist.

**(8)**

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(Total for Question 12 = 8 marks)



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13 To what extent does nurture influence cognitive and biological psychology?

(12)

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(Total for Question 13 = 12 marks)

**TOTAL FOR SECTION E = 20 MARKS**

**TOTAL FOR PAPER = 90 MARKS**



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