Write your name here

Surname: StemUp Model Solution | Other names:

Pearson Edexcel
International Advanced Level

Centre Number | Candidate Number

Psychology

International Advanced Level
Paper 4: Clinical Psychology and Psychological Skills

Monday 22 January 2018 – Morning
Time: 2 hours

Paper Reference
WPS04/01

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 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

	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.

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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

	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

CLINICAL PSYCHOLOGY

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

1 In your studies of schizophrenia you will have learned about the contemporary study by Suzuki et al. (2014).

(a) Explain **two** strengths of Suzuki et al.'s (2014) study.

(4)

1 *Suzuki et al. (2014) collected data on real inpatients during their actual hospitalisation for schizophrenia, rather than in an artificial setting. This gives the study high ecological validity, so the findings about underweight and obesity are valid for real Japanese schizophrenic inpatients.*

2 *The findings are reliable because they are consistent with other research. Kitabayashi et al. (2006) also found a higher frequency of underweight inpatients with schizophrenia in all age groups than in the normal population, which increases confidence in Suzuki et al.'s conclusions about nutritional status.*

(b) Explain **one** weakness of Suzuki et al.'s (2014) study.

(2)

Suzuki et al. (2014) did not control for the inpatients' eating behaviours or the amount of exercise they took, both of which affect weight. These extraneous variables, rather than schizophrenia itself, may have caused the underweight or obesity found, which reduces the reliability of the results.

(Total for Question 1 = 6 marks)

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2 Rosenhan and Seligman (1989) suggest that abnormality is a failure to function adequately. They give characteristics that can be used to determine abnormal behaviour.

(a) Explain **one** weakness of using 'failure to function adequately' to determine abnormality.

(2)

What counts as functioning adequately is culturally relative. Fernando (1998) highlights that psychiatrists often treat the behaviour of Western cultures as typical functioning, so people from other cultures whose behaviour deviates from these norms may wrongly be judged abnormal.

(b) John is an 18 year old British exchange student who has coloured his hair green, tattooed his arm and has had several body piercings. He is popular with friends and he is achieving high grades in school.

Justify whether John's behaviour is abnormal, with reference to **one** characteristic from Rosenhan and Seligman's (1989) 'failure to function adequately'.

(2)

John's green hair, tattoo and piercings could meet the characteristic of vividness and unconventionality, as his appearance is unusual. However, this does not make him abnormal: he is popular and achieving high grades, so he is functioning adequately and looking different is not enough to show a mental health abnormality.

(Total for Question 2 = 4 marks)

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3 Researchers investigated schizophrenia in siblings (brothers and sisters). They reviewed the medical histories of 500 pairs of siblings where schizophrenia had been diagnosed within four generations of their family history. The researchers recorded whether schizophrenic symptoms were present in one sibling, both siblings, or in neither sibling.

The data gathered in the study is shown in **Table 1**.

	Schizophrenic symptoms present
One sibling	20%
Both siblings	55%
Neither sibling	25%

Table 1

(a) Calculate the total number of participants in the group where **neither** sibling had schizophrenic symptoms.

(1)

Space for calculations

500 pairs of siblings = 500 × 2 = 1000 participants

Neither sibling = 25% of 1000

25 ÷ 100 × 1000 = 250

Total number of participants where neither sibling had schizophrenic symptoms ..... 250 .....

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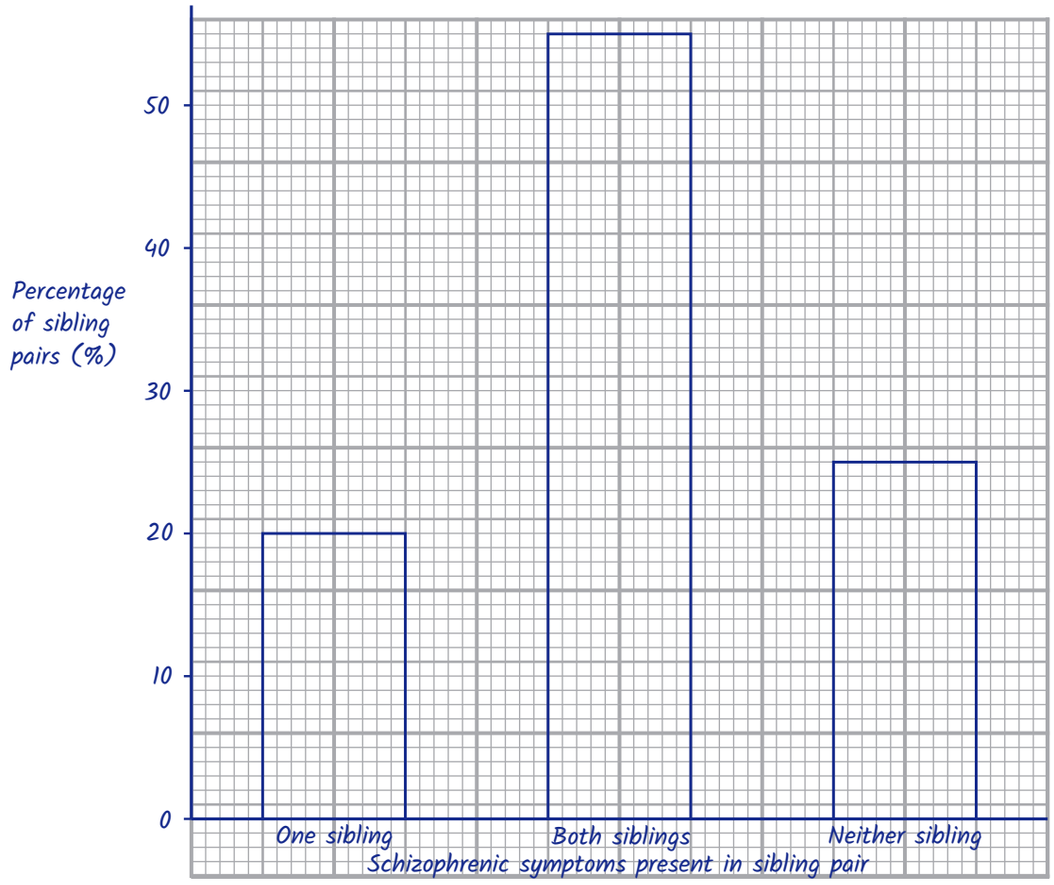
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(b) Draw a bar chart to represent the data in **Table 1**.

(3)

Title

Bar chart to show the percentage of sibling pairs with schizophrenic symptoms



(c) State **one** conclusion that the researchers can make from the results in **Table 1**.

(2)

In 55% of the sibling pairs both siblings had schizophrenic symptoms, compared with only 20% where one sibling did. This suggests that if one sibling has schizophrenic symptoms, the other sibling is also likely to have them.

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(d) The researchers intend to publish their study using the conventions of published psychological research.

State a one-tailed (directional) hypothesis for this study.

(3)

There will be significantly more sibling pairs in which both siblings have schizophrenic symptoms recorded in their medical histories than sibling pairs in which only one sibling has schizophrenic symptoms recorded.

(Total for Question 3 = 9 marks)

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4 Dr Morgan conducted a study into the benefits of CBT as a therapy for mental health conditions. Participants were asked to rate their mental health after 10 weeks of CBT, and a close family member also rated the participants mental health.

Scores were rated from 1 (no improvement) to 10 (significant improvement).

The results are shown in **Table 2**.

Self-rated mental health	Rank 1	Family-rated mental health	Rank 2	d	d^2
2	1	3	1	0	0
5	3	4	2	1	1
4	2	5	3	-1	1
6	4	7	5	-1	1
8	5	6	4	1	1
9	6	8	6	0	0
				Total:	4

Table 2

Calculate Spearman's rank correlation coefficient for the results of **Table 2**.

You **must** show your calculations by substituting into the formula.

Express your answer to two decimal places.

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

Space for calculations

$r_s = 1 - \frac{6\Sigma d^2}{n(n^2 - 1)}$ $\quad n = 6, \ \Sigma d^2 = 4$

$r_s = 1 - \frac{6 \times 4}{6(36 - 1)} = 1 - \frac{24}{210}$

$r_s = 1 - 0.114 = 0.886 = 0.89$ (2 d.p.)

Spearman's rank correlation coefficient ..... 0.89 .....

(Total for Question 4 = 2 marks)

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5 In your studies of clinical psychology you will have learned about either unipolar depression or anorexia nervosa.

Explain **one** strength and **one** weakness of a biological explanation of **either** unipolar depression **or** anorexia nervosa.

Mental health disorder

Unipolar depression

Strength

A strength of the monoamine hypothesis is that levels of neurotransmitters can be tested using objective, scientific methods. Patients with unipolar depression show lower levels of 5-HIAA, a breakdown product of serotonin, in their cerebrospinal fluid than non-depressed people, which supports a biological cause.

Weakness

A weakness is that the explanation is reductionist and ignores other explanations, such as the role of cognition. Beck (1970) suggests unipolar depression has its roots in negative, faulty thinking and distorted information processing, so low serotonin may be an effect of depression rather than its cause.

(Total for Question 5 = 4 marks)

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6 In your studies of clinical psychology you will have conducted a practical investigation.

(a) State **one** aim of your practical investigation.

(1)

To investigate how tabloid newspapers and medical sources report mental health issues, using a content analysis.

(b) Describe the results of your practical investigation.

(4)

Of the eight articles reviewed, five reported mental health issues in a negative way and three in a positive way.

In the five negative articles, negative themes such as 'danger to others' (11 tallies) and 'danger to self' (7 tallies) occurred more often than positive themes such as 'recovery' (3 tallies).

Two of the five negative articles were tabloid reports of people with mental health issues committing criminal offences, and they used labels such as 'psycho'.

The three articles presenting positive themes were all written by medical professionals in the last three years, suggesting that medical sources portray mental health more positively than tabloid media.

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(c) Explain **one** strength of the methodology used in your practical investigation.

(2)

A content analysis has high ecological validity because the articles are real-life reports that were not written for the study. The media and medical reports had been published for the public, so they give an accurate picture of how mental health issues are actually portrayed to the public.

(Total for Question 6 = 7 marks)

TOTAL FOR SECTION A = 32 MARKS

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SECTION B

CLINICAL PSYCHOLOGY

Answer the question. Write your answer in the space provided.

7 Evaluate the effectiveness of drug and family therapies in the treatment of schizophrenia.

(16)

Drug therapy for schizophrenia is based on biological explanations such as the dopamine hypothesis, which suggests symptoms are caused by excess dopamine activity. Typical antipsychotics, such as the phenothiazine chlorpromazine and haloperidol, block dopamine (D2) receptors, which suppresses positive symptoms such as hallucinations and delusions. Atypical antipsychotics such as risperidone and clozapine also act on serotonin receptors and aim to reduce negative symptoms too. Antidepressants may be given alongside them.

There is strong evidence that drug therapy is effective. Ban (2007) reported that patients given chlorpromazine showed clear improvement and a reduction in schizophrenic symptoms, and Meltzer et al. (2004) found patients taking haloperidol had reduced symptoms and improved day to day functioning. Emsley et al. (2008) found long-acting risperidone injections reduced both positive and negative symptoms, with many patients still symptom free two years later. Drugs are also cheap, quick to administer and need little effort from the patient, so they allow many people to live in the community rather than in hospital.

However, drugs treat the symptoms rather than the cause, so symptoms often return when medication stops, leading to a 'revolving door' pattern of relapse. Side effects such as dry mouth, weight gain, low blood pressure and tardive dyskinesia mean many patients stop taking their medication. In rare cases antipsychotics cause neuroleptic malignant syndrome, which can lead to coma and even death (Adityanji and Kaizad, 2005). Bustillo et al. (2001) found that Assertive Community Treatment had clear effects on preventing relapse and rehospitalisation, suggesting

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drug therapy alone is not sufficient.

Family therapy involves the patient attending sessions with family members or caregivers. It addresses environmental, social and emotional issues, for example reducing high expressed emotion such as criticism and hostility, and includes psychoeducation so the family understands the illness. It is not physically invasive and has no side effects.

Family therapy is supported by evidence. Pharoah et al. (2010) reviewed many studies and found it had a positive impact on recovery, reduced relapse and improved social functioning. Vaughn and Leff (1976) found patients living in families with high levels of negative attitudes were far more likely to relapse than those in families without this negativity, supporting the aim of reducing expressed emotion. Magliano et al. (2005) found it also improved the social functioning of caregivers, so it treats the wider impact of schizophrenia on the family. Psychoeducation also helps families support the patient's medication routine, improving compliance.

However, family therapy relies on the family being willing and able to attend, so it is not suitable for patients without close family. It is also time consuming and more costly, and it usually runs alongside drug therapy, so it is difficult to tell how much of the improvement is due to the family therapy itself.

In conclusion, drug therapy is the most effective way to reduce positive symptoms quickly, but it has serious side effects and high relapse rates. Family therapy is less effective on its own but reduces relapse and improves functioning. The two are therefore most effective when used together, with drugs controlling symptoms and family therapy helping the patient stay well.

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(Total for Question 7 = 16 marks)

TOTAL FOR SECTION B = 16 MARKS

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SECTION C

PSYCHOLOGICAL SKILLS

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

8 Case studies of brain damaged patients such as HM, provide cognitive psychologists with valuable research data about human memory functions.

(a) Explain **two** weaknesses of using case studies of brain damaged patients to investigate human memory.

(4)

1 *Case studies such as HM are unique, so they may lack representativeness. The effects of one person's specific brain damage, such as HM's or Clive Wearing's, cannot be generalised to how memory works in all people.*

2 *They may not meet ethical guidelines such as informed consent. HM could not commit new information to LTM, so he would not fully understand the research or remember agreeing to be studied, so his consent was not truly informed.*

(b) Justify the use of brain scanning/neuroimaging as a way to increase the credibility of case studies of brain damaged patients.

(2)

Scans provide objective, scientific images of the brain's internal structure and functions, produced by experts not directly involved in the case. This allows methodological triangulation, as the scans show which brain areas are damaged, supporting the memory behaviours recorded by the researchers.

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(c) Describe **one** difference between PET brain scanning and fMRI brain imaging.

(2)

A PET scan uses an injection of a radioactive tracer into the bloodstream, which can be traced in active areas of the brain, whereas an fMRI scan uses radio waves within a strong magnetic field to detect changes in blood oxygenation, with no radioactive substance involved.

(d) Caleb is interested in human memory. He has decided to investigate rehearsal in the short-term memory store. Caleb decides to use a laboratory experimental method for his investigation.

Describe how Caleb could use a laboratory experimental method to test rehearsal.

(2)

Caleb could test participants in a quiet laboratory, controlling extraneous variables such as noise and lighting that could affect their ability to rehearse. He would use a standardised task: participants hear a consonant trigram (eg KBW), then either rehearse it or count backwards in threes to prevent rehearsal for 18 seconds, and he compares the number of trigrams correctly recalled in the two conditions.

(Total for Question 8 = 10 marks)

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9 In psychology, researchers will consider a range of methods and select the most appropriate for their study.

One possible method for psychological research is using observations.

(a) Define what is meant by participant observation.

(1)

A participant observation is when the researcher takes part in, and is a member of, the situation or group they are observing.

(b) Define what is meant by structured observation.

(1)

A structured observation is one carried out in controlled conditions set up by the researcher, using a standardised procedure and pre-set behavioural categories.

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(c) Researchers in psychology may investigate socially sensitive topics such as prejudice, aggression, childhood trauma or mental health.

Analyse the use of covert observations when investigating socially sensitive topics in psychology.

(4)

When researching socially sensitive topics such as prejudice or aggression, it is important to observe naturally occurring behaviour, as people may hide prejudiced or aggressive behaviour if they know they are being watched. In a covert observation participants are unaware of the researcher, so there are no demand characteristics or social desirability, and the findings are more valid.

However, participants in studies of sensitive topics, such as people with mental health issues or childhood trauma, may be particularly vulnerable, so it is important not to cause them distress. Covert observations lack informed consent, so participants may feel distressed, exposed and vulnerable when they discover their behaviour was watched without their knowledge. Publishing the findings could also stigmatise the social group studied, so researchers must weigh validity against these ethical costs.

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A naturalistic observation was used to investigate the play preferences of children who were two years old. The data was gathered using event sampling.

The researchers recorded each time a child was observed displaying each play preference over a 60-minute period.

The data is displayed in **Table 3**.

	Number of times child was observed displaying each play preference over a 60-minute period			
	Plays alone	**Plays with one other**	**Plays in a group**	**Seeks adult attention**
Child A	//	###	/	### /
Child B	///	### /	//	### /
Child C	### ###	///	//	////
Child D	###	///	//	### ///
Child E	//	###	////	###
Child F	/	///	###	//

Table 3

(d) State the level of measurement for this data.

(1)

Nominal

(e) The range can be used as a measure of dispersion.

(i) Calculate the range for the data in the category of 'plays alone'.

(1)

Space for calculations

Plays alone: A = 2, B = 3, C = 10, D = 5, E = 2, F = 1

Range = highest − lowest = 10 − 1 = 9

The range for the category of 'plays alone' *9*

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(ii) Describe **one** reason why the range is not a useful measure of dispersion for the data in the category of 'plays alone'.

(2)

The range only uses the highest and lowest scores, 10 and 1, and ignores the other children's scores. Child C's score of 10 is an extreme score (the other children range from 1 to 5), so the range of 9 is distorted by this outlier and gives an inaccurate picture of the spread of the data.

(Total for Question 9 = 10 marks)

TOTAL FOR SECTION C = 20 MARKS

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SECTION D

Answer the question. Write your answer in the space provided.

10 One key question for society is whether memory can be manipulated to create false memories of events.

Cognitive psychologists Loftus and Pickrell (1995) investigated whether participants aged 18 years to 53 years could be led to believe they were lost in a shopping mall as a child. Relatives of the participants provided three true stories about the participants' childhood and the researchers added a false story about getting lost.

The participants were sent a booklet with the stories to read which included blank spaces for the participants to record their own memories of the stories. 68% of the true stories were recalled by participants and 25% of the false stories about getting lost were recalled. Bartlett (1932) would claim this is evidence of reconstructive memory.

Discuss the key question of whether memory can be manipulated to create false memories of events. You should use concepts, theories and/or research studied in your psychology course.

You must make reference to the context in your answer.

(8)

Loftus and Pickrell (1995) suggest that memory can be manipulated, as 25% of participants recalled being lost in a shopping mall as a child even though this event never happened. Bartlett (1932) argued that memory is reconstructive: we do not store exact copies of events but rebuild them each time using schemas, mental representations of knowledge that help us interpret events. Gaps are filled by confabulation, adding information that fits our expectations.

This explains the findings. Most participants will have prior memories of shopping malls and may have heard reports of children getting lost, so they have a schema for the event. The false story could be assimilated into this schema and confabulated with real memories of visiting a mall, creating a false memory. The story also came from trusted relatives, which made it more believable, so participants were more likely to accept it as their own. This supports Loftus and Palmer (1974), who found that leading questions using the verb 'smashed' led participants to falsely recall seeing broken glass, showing post-event information can alter memory.

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However, the evidence that memory can be manipulated is limited. 75% of the participants did not recall the false story, while 68% of the true stories were recalled, suggesting long-term memory, which Atkinson and Shiffrin (1968) describe as an unlimited store that can last a lifetime, is mostly accurate. Getting lost in a mall is also a common, plausible event, so some of the 25% may have been recalling a real experience of being lost in another context. Freud would argue such early experiences may be stored in the unconscious, so these may be partly true memories rather than wholly false ones. Pezdek et al. (1997) found false memories were much harder to implant for implausible events. Recall may also reflect demand characteristics, with participants writing what they thought the researchers wanted.

Overall, the study shows memory can be manipulated to create false memories for some people, especially for plausible events suggested by trusted sources, but most memories resist manipulation, which matters when society relies on eyewitness and recovered memories.

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SECTION E

Answer the question. Write your answer in the space provided.

11 Assess the claim that psychology is a science.

(20)

Science is the empirical study of observable, measurable evidence, using the hypothetico-deductive method to test hypotheses under controlled conditions. Scientific research should be objective and value free, replicable so its reliability can be tested, and theories should be falsifiable (Popper), so they can be proved wrong. Whether psychology meets these criteria depends on the approach and methods used.

Much of psychology does use scientific methods. Laboratory experiments manipulate an IV and measure a DV while controlling extraneous variables, allowing cause and effect to be established. Milgram (1963) used a standardised procedure in his studies of obedience, which allowed Burger (2009) to replicate it and find similar levels of obedience, showing reliability. Loftus and Palmer (1974) used structured laboratory experiments into reconstructive memory, adding scientific credibility to the theory, whereas Bartlett (1932) did not use strict controls, which reduced the scientific evidence for his work. Techniques such as the double-blind procedure increase objectivity by removing researcher bias from data collection, and biological psychology uses objective measures such as brain scans and hormone levels. Theories are also refined through falsification: Bandura developed social learning theory into social cognitive theory when his research did not fully explain how people learn behaviour.

However, some areas of psychology are not scientific. Freud's psychoanalysis relies on introspection and interpretation of unconscious processes, so concepts such as repression cannot be observed or falsified. Yet evolutionary theory also cannot easily be falsified and is still seen as scientific, so falsification may not be the only test of scientific status. Kuhn argued psychology is pre-paradigmatic because it has no single agreed paradigm, with competing

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approaches such as the biological and psychodynamic.

Being scientific also brings problems. Laboratory experiments are artificial, so findings may lack ecological validity and be hard to generalise. Scientific approaches are reductionist: the monoamine hypothesis reduces depression to neurotransmitters, ignoring complex interactions between people and their environment, and Atkinson and Shiffrin (1968) explain memory as three distinct stores, isolating it from real-life functioning. Nomothetic approaches, such as cognitive and biological psychology, seek universal laws and ignore the unique, idiographic nature of each person. Human participants also react to being studied, through demand characteristics, so true objectivity is hard to achieve. Many studies fail to replicate: the Open Science Collaboration (2015) reproduced only about 36% of significant findings, questioning psychology's reliability.

Qualitative methods, such as naturalistic observations and interviews, are less objective than quantitative data and so considered less scientific, but they describe human behaviour in more depth, giving richer and more valid insight that strict scientific methods may miss.

In conclusion, psychology is partly a science. Approaches such as biological and cognitive psychology use objective, replicable, falsifiable methods and meet the criteria of science, while psychodynamic and humanistic approaches do not. Because human behaviour is complex, a purely scientific approach may be reductionist, so the best psychology combines scientific rigour with methods that capture the richness of human experience.

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TOTAL FOR SECTION E = 20 MARKS
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