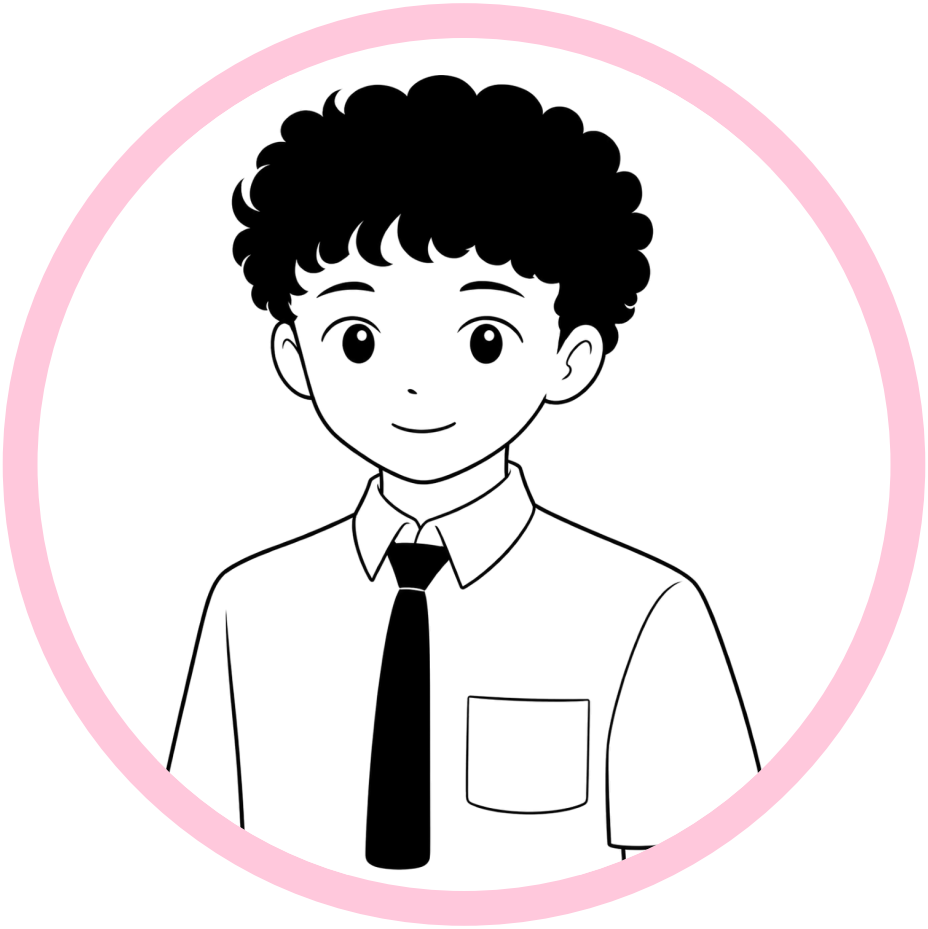
AQA A-LEVEL PSYCHOLOGY · 7182

PSYCHOLOGY



EXAM QUESTION PACK

3.2.3.1 REPORTING INVESTIGATIONS

SCORE	PERCENTAGE
/138	%

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Q1.

In 1992, a book about human relationships was published in London. The book was written by Steve Duck from the University of Iowa. The title was ‘Human Relationships’. The book was published by Sage.

A researcher needs to modify the above information to include Duck’s book in the references section of a scientific report.

Write the full reference for this book as it should appear in the reference section of the researcher’s report.

(Total 2 marks)

Q2.

In 1993, a book about gender was published in New Haven. The book was written by Sandra L Bem from Cornell University. The title was ‘The lenses of gender: transforming the debate on sexual inequality’. The book was published by Yale University Press.

A researcher needs to modify the above information to include Bem’s book in the references section of a scientific report.

Write the full reference for this book as it should appear in the reference section of the researcher’s report.

(Total 2 marks)

Q3.

In 1980, a book about social cognition was published in New York. The book was written by Robert L. Selman from Harvard University. The title was ‘The growth of interpersonal understanding: developmental and clinical analyses’. The book was published by Academic Press.

A researcher needs to modify the above information to include Selman’s book in the references section of a scientific report.

Write the full reference for this book as it should appear in the reference section of the researcher’s report.

(Total 2 marks)

Q4.

Read the item and then answer the questions that follow.

Following previous research indicating the social benefits of green space in urban areas, two psychology students decided to observe social behaviour in public spaces. They focused on two neighbouring towns, Greensville where most public spaces were planted with flowers and vegetables, and Brownton where most public spaces were paved with concrete.

The students compared the instances of considerate behaviours in the two towns. Considerate behaviour categories included putting litter in the bin, having a dog on a lead and riding a bike with care.

The observations were carried out in four different areas of a similar size in each town on weekdays between the hours of 4.30pm and 6.00pm. The students worked together to ensure inter-observer reliability, recording each target behaviour whenever it occurred.

(a) Should the hypothesis for this research be directional or non-directional? Explain your answer.

(2)

(b) Before the observation could begin, the students needed to operationalise the behaviour category 'riding a bike with care'.

Explain what is meant by operationalisation and suggest **two** ways in which 'riding a bike with care' could have been operationalised.

(4)

(c) The students thought that having a dog on a lead was a useful measure of considerate behaviour because it had face validity. Explain what is meant by face validity in this context.

(3)

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(d) Identify and briefly outline **two** other types of validity in psychological research.

(4)

(e) Identify the behaviour sampling method used by the students. Shade **one** box only.

A Time sampling ⬭

B Pair sampling ⬭

C Event sampling ⬭

D Target sampling ⬭

(1)

(f) Explain how inter-observer reliability could be ensured by working as a pair.

(3)

(g) The data for considerate behaviours is shown in the **Table 1**.

Table 1

Considerate behaviours			
	Litter in bin	Dog on lead	Riding bike with care
Greensville	23	23	10
Browntonn	10	17	9

The students noted that overall more considerate behaviours occurred in Greensville than in Brownton.

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Calculate the ratio of considerate behaviours observed in Greensville to considerate behaviours observed in Brownton. Show your workings and present your answer in the simplest form.

(3)

(h) The students carried out a Chi-square test on their data.

Explain why the Chi-square test was an appropriate test to use in this case.

(3)

(i) In order to interpret the results of the Chi-square test the students first needed to work out the degrees of freedom. They used the following formula.

Degrees of freedom (df) = (r–1) x (c–1)
r = number of rows and c = number of columns

Calculate the degrees of freedom for the data in **Table 1**. Show your workings.

(2)

(j) The calculated value of Chi-square was 6.20. Referring to the **Table 2** below, state whether or not the result of the Chi-square test is significant at the 0.05 level of significance. Justify your answer.

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Table 2

df	*Levels of significance for a one-tailed test*			
	0.10	**0.05**	**0.025**	**0.01**
	Levels of significance for a two-tailed test			
	0.20	**0.20**	**0.05**	**0.02**
1	1.64	2.71	3.84	5.41
2	3.22	4.60	5.99	7.82
3	4.64	6.25	7.82	9.84
4	5.99	7.78	9.49	11.67

To be significant at the level shown the calculated value of Chi Square must be equal to or greater than the critical/table value

(3)

(k) In the discussion section of their report of the investigation the students wanted to further discuss their results in relation to levels of significance.

Write a short paragraph the students could use to do this.

(4)

(l) As a follow-up to their observation the students decided to interview some of their peers about inconsiderate behaviours in their 6th Form Centre. The interviews were recorded.

Explain how the students could develop their interview findings by carrying out a content analysis and why content analysis would be appropriate in this case.

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_____

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_____

(3)

(m) Suggest **one** inconsiderate behaviour that the students might focus on in their content analysis.

_____

_____

(1)

(Total 36 marks)

Q5.

A maths teacher wondered whether there was a relationship between mathematical ability and musical ability. She decided to test this out on the GCSE students in the school. From 210 students, she randomly selected 10 and gave each of them two tests. She used part of a GCSE exam paper to test their mathematical ability. The higher the mark, the better the mathematical ability. She could not find a musical ability test so she devised her own. She asked each student to sing a song of their choice. She then rated their performance on a scale of 1–10, where 1 is completely tuneless and 10 is in perfect tune.

(a) Suggest a suitable non-directional hypothesis for this study.

(3)

(b) Why might the measure of musical ability used by the teacher lack validity?

(3)

(c) Explain how the teacher could have checked the reliability of the mathematical ability test.

(3)

(d) Explain why the teacher chose to use a random sample in this study.

The results of the study are given in the table below.

Mathematical ability test scores and musical ability ratings for 10 students

Student	Mathematical ability test score	Musical ability rating
1	10	10
2	2	9
3	9	3
4	6	6

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5	3	9
6	10	2
7	2	1
8	1	8
9	8	4
10	4	7

(2)

(e) In your answer book, sketch a graph to show the data in the table above. Give the graph an appropriate title and label the axes.

(3)

(f) Discuss what the data in the table above and the graph that you have sketched seem to show about the relationship between mathematical ability and musical ability.

(3)

(g) The teacher noticed that most of the students who were rated highly on musical ability were left-handed. The teacher is aware that her previous definition of musical ability lacked validity.

Design a study to test whether there is a difference in the musical ability of left-handed students and right-handed students. You have access to a sixth form of 200 students.

You should:

- identify the design that you would use
- explain an appropriate sampling method and justify your choice
- describe the procedure that you would use, including details of how you would assess musical ability
- write a suitable debrief for these participants.

(10)

(h) In your answer book, draw a table to show how you would record your results. Identify an appropriate statistical test to analyse the data that you would collect. Justify your choice.

(3)

(Total 30 marks)

Q6.

It is thought that colours might affect our performance when carrying out certain tasks. Research in this area has been inconclusive. Some studies have shown that red improves performance but others have found the opposite. It could be that these contradictory

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results have arisen because red is beneficial only for certain kinds of mental processing. Some psychologists tested this hypothesis in a series of independent-groups design experiments using students at a Canadian university.

The experiments involved computer tasks, with either a red, blue or neutral background appearing on the monitor. The researchers found that participants were better at a word-recall task and a spell-checking task when the screen background was red rather than blue or neutral. However, participants thought of more creative ideas when the screen was blue rather than red or neutral.

The researchers concluded that red is beneficial for tasks that require attention to detail whereas blue aids creativity.

(a) What were the researchers' aims in this study?

Imagine that you are writing up the report for this series of experiments.

(2)

(b) What is the purpose of the introduction section of a report?

A psychological report also contains a discussion section. Researchers are expected to consider their findings critically and discuss issues such as validity.

(2)

(c) What is meant by validity?

(1)

(d) In the discussion section, researchers are also expected to consider any possible applications of their research. Suggest **one** practical application that might arise from these findings.

In a further experiment, participants were given 20 blue shapes or 20 red shapes. They were then asked to pick 5 shapes and use them to make a toy suitable for a child aged between five and eleven years. They were given a limited time to carry out this task.
Participants given red shapes made toys that independent judges rated to be more practical but less original, whereas participants given blue shapes made more creative toys.

(2)

(e) Explain why the researchers asked independent judges to rate the toys.

(2)

(f) Write a set of standardised instructions that would be suitable to read out to participants in this experiment.

(5)

(Total 14 marks)

Q7.

Psychological research suggests an association between birth order and certain abilities. For example, first-born children are often logical in their thinking whereas later-born children tend to be more creative. A psychologist wonders whether this might mean that birth order is associated with different career choices. She decides to investigate and asks 50 artists and 65 lawyers whether they were the first-born child in the family or not.

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(a) Write a non-directional hypothesis for this study.

(2)

(b) Identify an appropriate sampling method for this study and explain how the psychologist might have obtained such a sample

The psychologist found the following results:

- 20 of the 50 artists were first-born children
- 35 of the 65 lawyers were first-born children.

She analysed her data using a statistical test and calculated a value of x^2 = 2.27. She then looked at the relevant table to see whether this value was statistically significant. An extract from the table is provided below.

Table: Critical values of x^2

Level of significance for a one-tailed test				
	0.10	0.05	0.025	0.01
Level of significance for a two-tailed test				
	0.20	0.10	0.05	0.02
df				
1	1.64	2.71	3.84	5.41

Calculated value of x^2 must be equal to or exceed the table (critical) values for significance at the level shown

(3)

(c) Imagine that you are writing the results section of the report on this investigation. Using information from the description of the study above and the relevant information from the statistical table, provide contents suitable for the results section.

You must provide all of the following:

- an appropriately labelled 2×2 contingency table a sketch of an appropriately labelled bar chart
- identification of the appropriate statistical test with justification for its use
- identification of an appropriate significance level
- a statement of the results of the statistical test in relation to the hypothesis.

(12)

(Total 17 marks)

Q8.

A psychologist was interested in testing a new treatment for people with eating disorders. She put up adverts in several London clinics to recruit participants. Thirty people came forward and they were all given a structured interview by a trained therapist. The therapist then calculated a numerical score for each participant as a measure of their current functioning, where 50 indicates excellent, healthy functioning and zero indicates failure to

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function adequately. The psychologist then randomly allocated half the participants to a treatment group and half to a no-treatment group. After eight weeks, each participant was re-assessed using a structured interview conducted by the same trained therapist, and given a new numerical score. The trained therapist did not know which participants had been in either group.

For each participant, the psychologist calculated an improvement score by subtracting the score at the start of the study from the score after eight weeks. The greater the number, the better the improvement.

Median and range of improvement scores for the treatment group and for the no-treatment group

	Treatment group	**No–treatment group**
Median	10.9	2.7
Range	2.1	0.8

(a) With reference to the data in the table above, outline what the findings of this investigation seem to show about the effectiveness of the treatment.

(2)

(b) The psychologist used a statistical test to find out whether there was a significant difference in improvement between the 'treatment' and 'no-treatment' groups. She found a significant difference at the 5% level for a one-tailed test ($p \leq 0.05$).

Identify an appropriate statistical test for analysing the participants' scores. Explain why it would be a suitable test to use in this study.

(4)

(c) What is the likelihood of the psychologist having made a Type 1 error in this study? Explain your answer.

(2)

(d) The psychologist assumed that improvements in the treatment group were a direct result of the new type of treatment. Suggest **two** other reasons why people in the treatment group might have improved.

(4)

(e) The psychologist could have used self-report questionnaires to assess the participants instead of using interviews with the therapist. Explain **one** advantage and **one** disadvantage of using self-report questionnaires in this study rather than interviews.

(4)

(f) The psychologist needed to obtain informed consent from her participants. Write a brief consent form which would be suitable for this study. You should include some details of what participants could expect to happen in the study and how they would be protected.

(5)

(g) What is meant by reliability? Explain how the reliability of the scores in this study could be checked.

(4)

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(h) The psychologist noticed that female and male participants seemed to have responded rather differently to the treatment.

She decided to test the following hypothesis:

> Female patients with an eating disorder will show greater improvement in their symptoms after treatment with the new therapy than male patients.

She used a new set of participants and, this time, used self-report questionnaires instead of interviews with a therapist.

Imagine that you are the psychologist and are writing up the report of the study. Write an appropriate methods section which includes reasonable detail of design, participants, materials and procedure. Make sure that there is enough detail to allow another researcher to carry out this study in the future.

(10)

(Total 35 marks)

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