# GCE A LEVEL MARKING SCHEME

## SUMMER 2024

## A LEVEL
## PSYCHOLOGY – COMPONENT 2
## A290U20-1

## About this marking scheme

The purpose of this marking scheme is to provide teachers, learners, and other interested parties, with an understanding of the assessment criteria used to assess this specific assessment.

This marking scheme reflects the criteria by which this assessment was marked in a live series and was finalised following detailed discussion at an examiners' conference. A team of qualified examiners were trained specifically in the application of this marking scheme. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners. It may not be possible, or appropriate, to capture every variation that a candidate may present in their responses within this marking scheme. However, during the training conference, examiners were guided in using their professional judgement to credit alternative valid responses as instructed by the document, and through reviewing exemplar responses.

Without the benefit of participation in the examiners' conference, teachers, learners and other users, may have different views on certain matters of detail or interpretation. Therefore, it is strongly recommended that this marking scheme is used alongside other guidance, such as published exemplar materials or Guidance for Teaching. This marking scheme is final and will not be changed, unless in the event that a clear error is identified, as it reflects the criteria used to assess candidate responses during the live series.

# GCE A LEVEL PSYCHOLOGY – COMPONENT 2

## SUMMER 2024 MARK SCHEME

| Question | AO1 | AO2 | AO3 | Total |
|---|---|---|---|---|
| **1** | 8 | | | **8** |
| **2** | 2 | | | **2** |
| **3** | 6 | | | **6** |
| **4** | 4 | | | **4** |
| **5** | | | 2 | **2** |
| **6** | | | 6 | **6** |
| **7** | | | 12 | **12** |
| **8** | | 15 | | **15** |
| **9** | | 15 | | **15** |
| **10** | | 14 | 5 | **19** |
| **11** | | 6 | 5 | **11** |
| **Total** | **20** | **50** | **30** | **100** |

## SECTION A – Principles of Research

Answer **all** questions.

1. Define the following terms:

(a) Researcher bias. [2]

| Exemplar answers: |
|---|
| • Where the researcher either directly or indirectly influences the results of a study, through the process of designing the study or through the way the research is conducted/analysed. [2 marks]<br>• The researcher influences the findings. [1 mark]<br><br>• Any other appropriate content. |

| Marks | AO1 |
|---|---|
| **2** | • Reasonable definition. |
| **1** | • Basic definition. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Demand characteristics. [2]

| Exemplar answers: |
|---|
| • A type of confounding variable where participants unconsciously work out the aim and act differently (either through social desirability or the screw you effect). [2 marks]<br>• The participants behave differently because they know they are being studied. [1 mark]<br><br>• Any other appropriate content. |

| Marks | AO1 |
|---|---|
| **2** | • Reasonable definition. |
| **1** | • Basic definition. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(c) Predictive validity. [2]

Exemplar answers:

- The degree to which a test accurately forecasts a future outcome on a more broadly related topic. [2 marks]
- The outcome can be predicted. [1 mark]
- Any other appropriate content.

| Marks | AO1 |
|---|---|
| **2** | • Reasonable definition. |
| **1** | • Basic definition. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

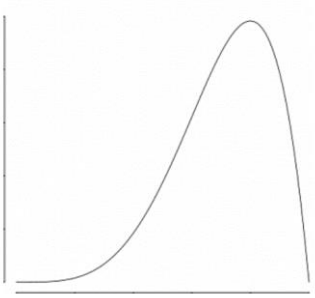
(d) Secondary sources. [2]

Exemplar answers:

- Secondary sources are sources that have not been directly collected or created by the researcher e.g. use of methods such as content analysis of existing data, or literature reviews. [2 marks]
- Secondary sources are sources which are created by someone else. [1 mark]
- A secondary source is anything that summarises, evaluates or comments on a primary source. [1 mark]
- Any other appropriate content.

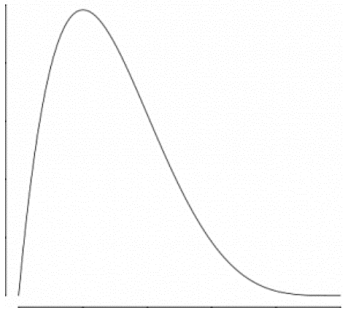
| Marks | AO1 |
|---|---|
| **2** | • Reasonable definition. |
| **1** | • Basic definition. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

2. (a) Identify the type of skewed distribution in this diagram: [1]



| Credit will be given for:<br>• Negative.<br>• Left skew(ed).<br><br>• Any other appropriate content. | |
|---|---|
| **Marks** | **AO1** |
| **1** | • Accurate identification of negative skew. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Identify the type of skewed distribution in this diagram: [1]



| Credit will be given for:<br>• Positive.<br>• Right skew(ed).<br><br>• Any other appropriate content. | |
|---|---|
| **Marks** | **AO1** |
| **1** | • Accurate identification of positive skew. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

3. Explain how psychologists use ethics committees and ethical guidelines to manage the risk posed by ethical issues. [3 + 3]

Credit will be given for:

- Explanations of the role of the committee as a board that is in place to ensure that proposed research meets the standards of the current ethical codes of conduct and guidelines.
- Explanation of published guidelines which provide a set of moral principles that guide research from its inception through to completion and publication of results.
- Explanation of ethical guidelines such as confidentiality, risk of stress, anxiety, humiliation or pain, debriefing, valid consent, deception etc.
- Any other appropriate content.

| Marks | AO1 |
|---|---|
| **3** | • Reasonable explanation of the role of ethics committees/guidelines in psychological research.<br>• Good use of terminology. |
| **2** | • Basic explanation of the role of ethics committees/guidelines in psychological research.<br>• Some appropriate terminology is evident. |
| **1** | • Superficial explanation of the role of ethics committees/guidelines in psychological research.<br>• Infrequent use of appropriate terminology. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

4. (a) Explain why a psychological researcher might use standard deviation for measuring dispersion in a set of data. [2]

Exemplar answers:

- The standard deviation is more sensitive to anomalies/outliers. [2 marks]
- The standard deviation is the most appropriate measure of variance for interval or ratio data. [1 mark]
- The standard deviation will give a more accurate representation of the variance. [1 mark]
- The standard deviation is a value which represents the amount of variation of results from the mean score. [0 marks]

- Any other appropriate content.

| Marks | AO1 |
|---|---|
| **2** | • Reasonable explanation. |
| **1** | • Basic explanation. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Explain why a psychological researcher might use range for measuring dispersion in a set of data. [2]

Exemplar answers:

- The range shows the difference between the lowest and highest scores, so it is easier to calculate than the standard deviation. [2 marks]
- The range can be used with frequency data or ordinal data. [1 mark]
- It is easier to calculate than the standard deviation. [1 mark]

- Any other appropriate content.

| Marks | AO1 |
|---|---|
| **2** | • Reasonable explanation. |
| **1** | • Basic explanation. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

5. Explain **one** advantage of using quantitative data in psychological research. [2]

Credit will be given for:

- Quantitative data can be used in statistical analysis to ensure that the results are valid and not down to chance.
- Quantitative data can be quicker to collect or analyse than qualitative data.

- Any other appropriate content.

| Marks | AO3 |
|---|---|
| **2** | • Reasonable explanation. |
| **1** | • Basic explanation. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

6. Evaluate the use of brain scans in psychological research. [6]

Credit will be given for:

- Allows for objective assessment of brain structure/function.
- Allows investigation of live brains, rather than waiting for post-mortem.
- MRI is best suited for cases when a patient is to undergo the examination several times successively in the short term, because, unlike PET, it does not expose the patient to the hazards of radiation.
- PET scans reveal chemical information that is not available with other imaging techniques.

- Scans take a long time and can be uncomfortable for patients, not good for those with claustrophobia.
- These are extremely costly techniques and therefore not easily available for research.
- With PET, the patient has to be injected with a radioactive substance, the technique can be used only a few times.
- Only a range of activities can be investigated, due to limitations of being stuck in a machine.

- Any other appropriate content.

| Marks | AO3 |
|---|---|
| **5 - 6** | • Thorough evaluation of the use of brain scans in psychological research.<br>• Depth and range, but not in equal measure.<br>• Structure is logical. |
| **3 - 4** | • Reasonable evaluation of the use of brain scans in psychological research.<br>• Depth or range.<br>• Structure is mostly logical. |
| **1 - 2** | • Superficial evaluation of the use of brain scans in psychological research.<br>• Answer lacks structure. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

7. (a) Discuss the limitations of the methodology used by Kohlberg (1968) in his research '*The child as a moral philosopher*'. [6]

Credit will be given for:

Use of interviews:
- Children may be less able to answer lengthy questions or stay focused for long periods of time, however this allowed Kohlberg to ask supplementary questions if necessary.
- Children may be more susceptible to researcher bias, reducing the validity, but they may find it easier to be truthful when completing self-report methods.

Use of hypothetical moral dilemmas:
- Examining what the boys say they would do not what they actually would do, which may decrease the validity, however it might be the only way that these dilemmas can be assessed in children.
- Different hypothetical moral dilemmas were used with different participants; different questions used with children of different ages, which reduced the reliability, however, by keeping the scenarios the same, it allowed for an objective comparison across the sample group, which improved the reliability.

Use of longitudinal method:
- The study was more likely to suffer from sample attrition, but this allowed Kohlberg to track the actual development of the boys over 12 years.

Use of cross-cultural comparison:
- It may be hindered by techniques developed from one culture, for example, the differences in questions asked to those in Taiwan, however it allows assessment to see if moral development is universal or culturally specific.

- Any other appropriate content.

| Marks | AO3 |
|---|---|
| **5 - 6** | • Thorough discussion of methodological limitations.<br>• Evaluative comments are evidently relevant to the context.<br>• Structure is mostly logical.<br>• Depth and range but may not be in equal measure. |
| **3 - 4** | • Reasonable discussion of methodological limitations.<br>• Evaluative comments show some relevance to the context.<br>• Structure is reasonable.<br>• Depth or range. |
| **1 - 2** | • Superficial discussion of methodological limitations.<br>• Answer lacks structure. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Discuss ethical issues with Kohlberg's (1968) research '*The child as a moral philosopher*'. [6]

Credit will be given for:

- Risk of stress, anxiety, humiliation or pain: The scenario questions could cause high levels of anxiety in children and may cause many negative feelings e.g. some of Kohlberg's younger participants (age 10) being exposed to emotionally challenging hypothetical moral dilemmas, however, the scenarios were not always relevant to the children's own life experiences so many children would not relate to them.
- The children may have been given the right to withdraw from the study in line with ethical guidelines, however, younger children in the study may have experienced greater difficulties in understanding the nature of the research and any 'debrief' that would be offered.
- The children may have been asked for consent before starting the study, but they may not understand the aim or procedures involved in the research. Even with consent from the next of kin, the child may not have been protected from harm.

- Any other appropriate content.

| Marks | AO3 |
|---|---|
| **5 - 6** | • Thorough discussion of ethical issues.<br>• Evaluative comments are evidently relevant to the context.<br>• Structure is mostly logical.<br>• Depth and range but may not be in equal measure. |
| **3 - 4** | • Reasonable discussion of ethical issues.<br>• Evaluative comments show some relevance to the context.<br>• Structure is reasonable.<br>• Depth or range. |
| **1 - 2** | • Superficial discussion of ethical issues.<br>• Answer lacks structure. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

## SECTION B – Personal Investigations

You should answer **all** the questions in this section with reference to the investigations carried out in your study of psychology.

**INVESTIGATION ONE:** An experiment on a context dependent memory task.

8. (a) (i) Explain how you operationalised the independent variable in your experiment. [2]

Exemplar answers:

- The room in which the students rehearsed and recalled the list of words. [2 marks]
- The presence or absence of a scented candle in the room as they complete the task. [2 marks]
- The room of the test. [1 mark]
- The smell of a candle. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **2** | • Reasonable explanation of an appropriate operationalised variable. |
| **1** | • Basic explanation of an appropriate operationalised variable. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(ii) Explain how you operationalised the dependent variable in your experiment. [2]

Exemplar answers:

- The number of correctly recalled words from a list of 20 words. [2 marks]
- The number of words remembered. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **2** | • Reasonable explanation of an appropriate operationalised variable. |
| **1** | • Basic explanation of an appropriate operationalised variable. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Identify **one** extraneous variable that you considered and explain how you managed this variable in your experiment. [3]

Exemplar answers:

- The noise coming from the dining hall was distracting [1] so I carried out the experiment during lesson times when the dining hall was closed. [2] [3 marks]
- The lighting in the room [1] so I kept the lights on for all conditions. [1] [2 marks]
- The smell of the room. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **3** | • Appropriate identification of an extraneous variable.<br>• Reasonable explanation of how the extraneous variable was managed linked to the research. |
| **2** | • Appropriate identification of an extraneous variable.<br>• Basic explanation of how the extraneous variable was managed linked to the research. |
| **1** | • Appropriate identification of an extraneous variable. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(c) Explain **one** ethical issue that you considered and explain how you managed this ethical issue in your experiment. [4]

Exemplar answers:

- The ethical issue was deception, because I didn't tell the students that the aim of my study was about memory. I managed the issue by giving the students a full debrief explaining how we had to hide the aim of the study otherwise they would have tried to remember the words in the same room condition. [4 marks]
- The ethical issue was deception, because I didn't tell the participants what the aim of my study was. I managed the issue by giving the students a full debrief explaining how we had to hide the aim of the study otherwise they would have tried to remember the words in the same room condition. [3 marks]
- The ethical issue was risk of harm because they could be embarrassed during the study, which we managed by telling them they had the right to withdraw from the study at any time. [2 marks]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **4** | • Reasonable explanation of an ethical issue linked to the research.<br>AND<br>• Reasonable explanation of how the issue was managed linked to the research. |
| **3** | • Reasonable explanation of an ethical issue linked to the research.<br>AND<br>• Basic explanation of how the issue was managed linked to the research.<br>**OR**<br>• Basic explanation of an ethical issue linked to the research.<br>AND<br>• Reasonable explanation of how the issue was managed linked to the research. |
| **2** | • Basic explanation of an ethical issue linked to the research.<br>AND<br>• Basic explanation of how the issue was managed linked to the research.<br>**OR**<br>• Reasonable explanation of an ethical issue linked to the research. |
| **1** | • Basic explanation of an ethical issue linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(d) Identify and fully justify the inferential statistic you used to analyse the data in your experiment. [4]

Exemplar answers:

- I used a Mann-Whitney test because I allocated the students into two groups to test the difference between them, one group stayed in the same room for both the rehearsal and the recall, and one group moved into a different room for recall. The data was interval because I counted the number of correct words they could recall from the list. [4 marks]
- I used a Mann-Whitney test because I was testing a difference, one group stayed in the same room for both the rehearsal and the recall, and one group moved into a different room for recall. The data was interval because I counted the number of correct words they could recall from the list. [3 marks]
- I used a Mann-Whitney test. The data I collected was interval. [2 marks]
- I used a Mann-Whitney test to see if there was a difference between the two independent groups and the data was ordinal. [1 mark]

- Any other appropriate content.

N.B. No credit for inferential statistical tests assessing a correlation.

| Marks | AO2 |
|---|---|
| **4** | • Appropriate inferential statistical test identified.<br><br>All of the following conditions included in the justification:<br>• Test of difference noted and linked to research.<br>• Level of measurement noted and linked to research.<br>• Independent or related data noted and linked to research. |
| **3** | • Appropriate inferential statistic is identified.<br><br>Two of the following conditions included in the justification:<br>• Test of difference noted and linked to research.<br>• Level of measurement noted and linked to research.<br>• Independent or related data noted and linked to research. |
| **2** | • Appropriate inferential statistic is identified.<br><br>One of the following conditions included in the justification:<br>• Test of difference noted and linked to research.<br>• Level of measurement noted and linked to research.<br>• Independent or related data noted and linked to research. |
| **1** | • Appropriate inferential statistic is identified.<br>• Justification may be offered but is not linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

**INVESTIGATION TWO:** A non-participant observation of mobile phone use.

9. (a) (i) State an operationalised hypothesis for your non-participant observation. [2]

| Exemplar answers:<br><br>• Students will spend more time using their mobile phones than teachers. [2 marks]<br>• There will be a positive correlation between hours of phone use and score on 'fear of missing out' (FOMO) test out of 20. [2 marks]<br>• Students will use their phones more than teachers. [1 mark]<br><br>• Any other appropriate content. | |
|---|---|
| **Marks** | **AO2** |
| **2** | • Appropriate fully operationalised hypothesis is stated. |
| **1** | • Appropriate partially operationalised hypothesis is stated. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(ii) Identify whether your hypothesis in 9(a)(i) is directional or non-directional. [1]

| Credit will be given for:<br><br>• Appropriate identification of the direction of the hypothesis in 9 (a) (i).<br><br>• Any other appropriate content. | |
|---|---|
| **Marks** | **AO2** |
| **1** | • Appropriate identification of the direction of hypothesis. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Identify and briefly explain the observational sampling technique used in your non-participant observation. [3]

Exemplar answers:

- I used time sampling which meant that I stood in the corridor of school and recorded how many people were using their phones every 2 minutes. I noted if it was a teacher or a student. [3 marks]
- I used event sampling [1] by recording each time I saw a mobile phone. [1] [2 marks]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **3** | • Identification of an appropriate observational sampling technique.<br>• Reasonable explanation of how the technique was used, linked to the research. |
| **2** | • Identification of an appropriate observational sampling technique.<br>• Basic explanation of how the technique was used, linked to the research.<br>**OR**<br>• Observational sampling technique is not identified but a reasonable explanation of how a technique was used, linked to the research. |
| **1** | • Identification of an appropriate observational sampling technique.<br>**OR**<br>• Observational sampling technique is not identified but basic explanation of how a technique was used, linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(c) Evaluate the sampling technique you used to select participants for your non-participant observation. [4]

Exemplar answers:

By using a volunteer sample, I could recruit a large sample of students quite quickly and easily as all I had to do was ask teachers to volunteer to let me observe their classes to see who used their phone during the lesson. However, because it was a volunteer sample, the teacher might only have let me observe a well-behaved class as she might have been embarrassed to let me see a class she couldn't control. This means that the students I observed do not represent the wider college and therefore I cannot generalise my findings. [4 marks]

By using a systematic sample of every 5th student to walk into the dining hall, I avoided researcher bias so this meant that I did not just observe students I knew would be on their phones or avoid students that I didn't like. [2 marks]

I used an opportunity sample which was easier than other methods but meant that my sample was biased as I only used students who did not have a lesson in the afternoon. [2 marks]

I used an opportunity sample which was quicker and easier than other sampling techniques but did not provide a representative sample. [1 mark]

| Marks | AO2 |
|---|---|
| **4** | • Thorough evaluation linked to the research. |
| **3** | • Reasonable evaluation linked to the research. |
| **2** | • Basic evaluation linked to the research. |
| **1** | • Superficial evaluation linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(d) A psychologist wants to replicate your non-participant observation. Apart from sampling, discuss **two** improvements that they could make. [5]

Exemplar answers:

- One way that the psychologist could improve my research is by using standardised procedures, such as observing the students on their phones at the same time of day in the same area of the college. This would make the findings more valid as it is not just a one-off occurrence and time of day or room are not confounding variables. Another way that the psychologist could improve the study is through inter-rater reliability. I was the only person observing the students but if there were two, then they could compare their recordings of phone use for consistency [5 marks]
- One way that I could improve my research is by observing the students on their phones at the same time of day in the same area of the college. This would make the findings more valid as it controls extraneous variables. Another way that they could improve the study is through inter-rater reliability. If two observers are used in school, the findings can be checked for consistency. [3 marks]
- I could improve the validity by controlling any extraneous variables in school. I could also use two observers of phone use to improve reliability. [1 mark]

| Marks | AO2 |
|---|---|
| **5** | • Thorough discussion of two improvements, linked to the research. |
| **4** | • Thorough discussion of one improvement and reasonable discussion of one improvement, linked to the research. |
| **3** | • Reasonable discussion of two improvements, linked to the research. |
| **2** | • Basic discussion of two improvements, linked to the research.<br>**OR**<br>• Reasonable discussion of one improvement, linked to the research. |
| **1** | • Superficial discussion of two improvements, linked to the research.<br>**OR**<br>• Basic discussion of one improvement, linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

## SECTION C – Application of research methods to a novel scenario

Answer **all** questions.

10. A self-selecting sample of 30 college students were randomly allocated into one of two groups – Group A watched an action movie and Group B watched a romantic movie. Students could take as many free bags of popcorn as they wanted during the movie.

The researcher predicted that more popcorn would be eaten during the action movie than during the romantic movie. At the end of the film, the amount of popcorn that each participant had eaten was recorded. (Figure 1)

**Figure 1**: The number of bags of popcorn eaten during the action movie and the romantic movie:

| Participant number | Number of bags of popcorn eaten by Group A – watching an action movie | Participant number | Number of bags of popcorn eaten by Group B – watching a romantic movie |
|---|---|---|---|
| 1 | 3 | 16 | 4 |
| 2 | 2 | 17 | 2 |
| 3 | 3 | 18 | 4 |
| 4 | 1 | 19 | 0 |
| 5 | 4 | 20 | 2 |
| 6 | 3 | 21 | 1 |
| 7 | 6 | 22 | 2 |
| 8 | 4 | 23 | 5 |
| 9 | 3 | 24 | 1 |
| 10 | 2 | 25 | 2 |
| 11 | 4 | 26 | 2 |
| 12 | 3 | 27 | 2 |
| 13 | 3 | 28 | 2 |
| 14 | 5 | 29 | 0 |
| 15 | 4 | 30 | 2 |

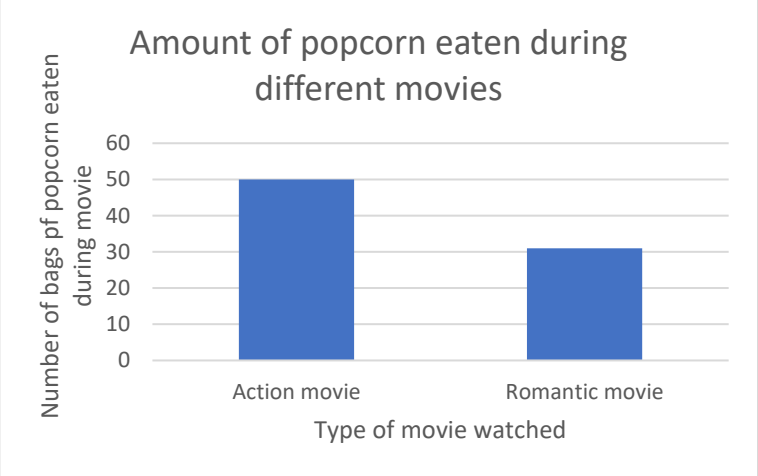
(a) Using an appropriate graphical representation, display the data from Figure 1. [4]

Credit will be given for:

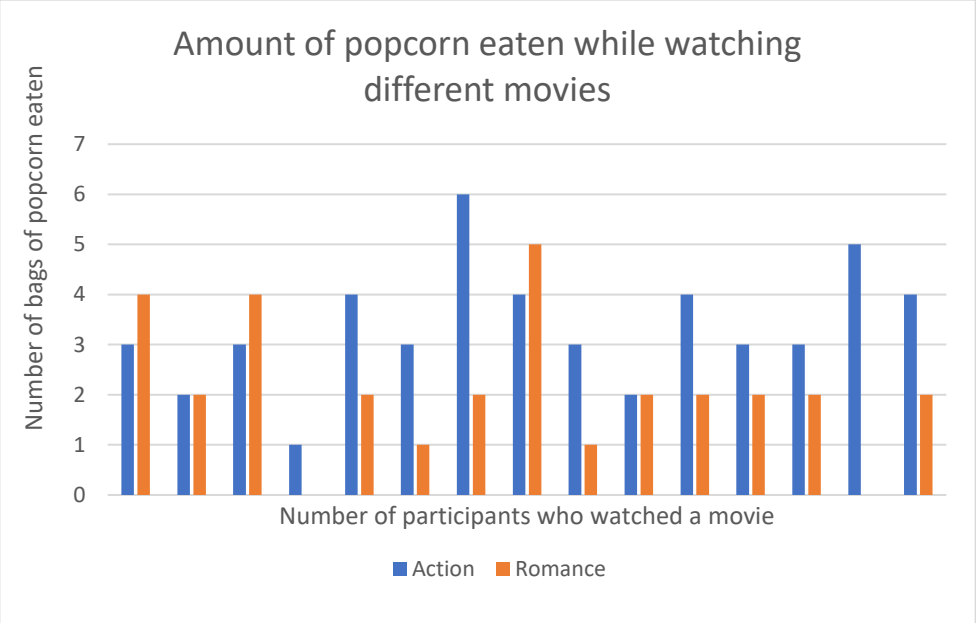
**One** mark for each accurate feature:

- Appropriate graphical representation.
- Accurate plotting of data.
- Appropriate title.
- Appropriate labels.

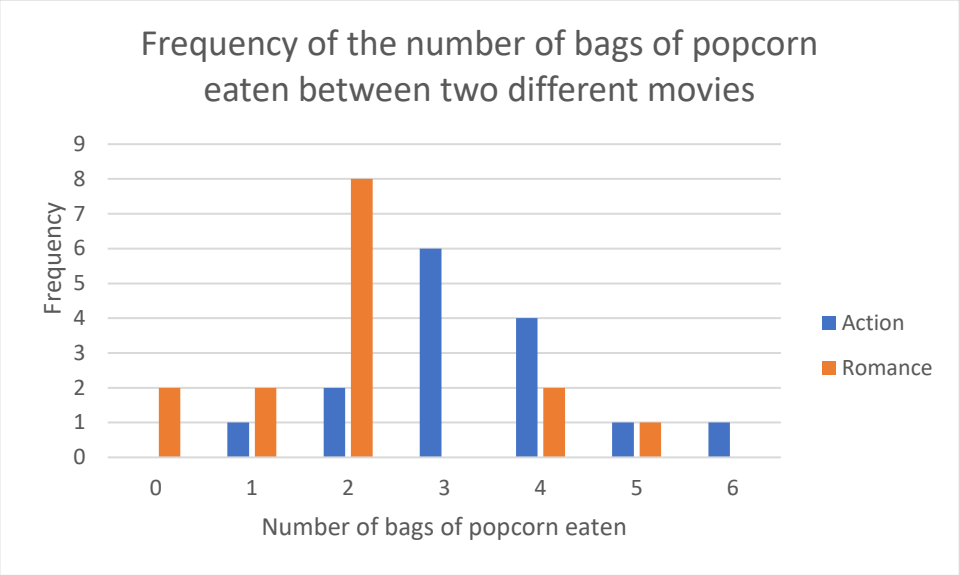
Exemplar answers:



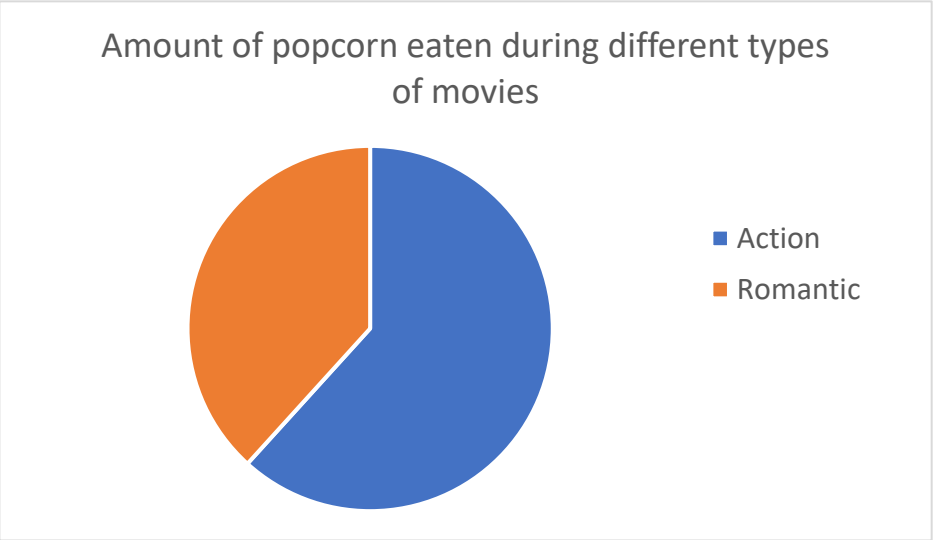

OR



OR




OR




Any other appropriate content.

| Marks | AO2 |
|---|---|
| **4** | • All four features are present. |
| **3** | • Three of the four features are present. |
| **2** | • Two of the four features present. |
| **1** | • One of the four features present. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) (i) Suggest an appropriate measure of central tendency to describe the number of bags of popcorn eaten and fully justify why this is appropriate in this research. [3]

Exemplar answers:

- The mean is appropriate because none of college students in Group A or B ate an extreme number of bags of popcorn, all scores fell between 0 and 6, but if there was it might have skewed the data set. [3 marks].
- The mean is appropriate because there are no extreme values or outliers in the data set. [2 marks]
- The mean is appropriate because the number of bags of popcorn is interval/ ratio data. [2 marks]
- The mean is appropriate because unlike the mode, you can always calculate it as long as the data is at least interval/ratio. [1 mark]
- The median as the number of bags of popcorn eaten by Group A and Group B contains some anomalous results, e.g. P7 in Group A ate 6 bags. Median scores are not affected by outliers. [3 marks]
- The median is not affected by outliers and there are a few in this data set. [2 marks]
- The median. [1 mark]
- The mode is appropriate as both Group A and Group B have participants that share the same score for the number of bags of popcorn. 8 participants in Group B share the same number of bags of popcorn eaten (2 bags). [3 marks]
- The mode is appropriate as there are participants with tied scores in this data set. [2 marks]
- The mode [1 mark].

- Any other appropriate content.

N.B. For this data set, all measures of central tendency are technically correct. Justification could relate to:

- the strengths of the chosen M.O.C.T.;
- by comparison with the weaknesses of other M.O.C.T.;
- or by explaining how the usual limitations of the selected MOCT do not apply to the data set.

| Marks | AO2 |
|---|---|
| **3** | • Appropriate measure of central tendency is identified.<br>• Reasonable justification, linked to the research. |
| **2** | • Appropriate measure of central tendency is identified.<br>• Basic justification, linked to the research. |
| **1** | • Appropriate measure of central tendency is identified. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(ii) Calculate the measure of central tendency identified in 10(a) (i) for Group A. Show your workings. [2]

| Exemplar answers:<br><br>• Mean: 3 + 2 +3 +1 + 4 + 3 + 6 + 4 + 3 + 2 + 4 + 3 + 3 + 5 + 4= 50/15 = 3.33<br>• Median: 1, 2, 2, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 5, 6 = middle value is 3<br>• Mode: there is 1 x 1, 2 x 2s, 6 x 3s, 4 x 4s, 1 x 5 and 1 x6 = most common value is 3<br><br>• Any other appropriate content. | |
|---|---|
| **Marks** | **AO2** |
| **2** | • Accurate calculation of the measure with accurate workings shown. |
| **1** | • Accurate calculation of the measure without accurate workings shown.<br>**OR**<br>• Inaccurate calculation of the measure with accurate workings shown. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

The psychologist analysed if the findings were significant by performing a Mann-Whitney U test. The calculated value was 57.5

**Figure 2:** Critical values for the Mann-Whitney U test, where $p \leq 0.05$.

| | | $N_1$ | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ***10*** | ***11*** | ***12*** | ***13*** | ***14*** | ***15*** | ***16*** | ***17*** | ***18*** | ***19*** | ***20*** |
| $N_2$ | ***10*** | 27 | 31 | 34 | 37 | 41 | 44 | 48 | 51 | 55 | 58 | 62 |
| | ***11*** | 31 | 34 | 38 | 42 | 46 | 50 | 54 | 57 | 61 | 65 | 69 |
| | ***12*** | 34 | 38 | 42 | 47 | 51 | 55 | 60 | 64 | 68 | 72 | 77 |
| | ***13*** | 37 | 42 | 47 | 51 | 56 | 61 | 65 | 70 | 75 | 82 | 84 |
| | ***14*** | 41 | 46 | 51 | 56 | 61 | 66 | 71 | 77 | 82 | 87 | 92 |
| | ***15*** | 44 | 50 | 55 | 61 | 66 | 72 | 77 | 83 | 88 | 94 | 100 |
| | ***16*** | 48 | 54 | 60 | 65 | 71 | 77 | 83 | 89 | 95 | 101 | 107 |
| | ***17*** | 51 | 57 | 64 | 70 | 77 | 83 | 89 | 96 | 102 | 109 | 115 |
| | ***18*** | 55 | 61 | 68 | 75 | 82 | 88 | 95 | 102 | 109 | 116 | 123 |
| | ***19*** | 58 | 65 | 72 | 80 | 87 | 94 | 101 | 109 | 116 | 123 | 130 |
| | ***20*** | 62 | 69 | 77 | 84 | 92 | 100 | 107 | 115 | 123 | 130 | 138 |

(c) (i) Identify the appropriate critical value for this research from Figure 2 above. [1]

Exemplar answers:

- The critical value is 72. [1 mark]
- 72.[1 mark]
- The critical value is where N1 (15) and N2 (15) intersect, so 72. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **1** | • Accurate value (72) is identified. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(ii) Explain what is meant by '$p \leq 0.05$' in this research. [2]

Exemplar answers:

- The probability of the difference between amount of popcorn eaten being down to chance is less than or equal to 5%. [2 marks]
- The probability of a difference between the amount of popcorn eaten whilst watching an action movie or watching a romantic movie being due to chance is 5% or less. [2 marks]
- The probability of the results about bags of popcorn eaten being due to chance is equal to or less than 0.05. [1 mark]
- The probability of a difference between the amount of popcorn eaten whilst watching an action movie and watching a romantic movie being due to chance is less than 5%. [1 mark]
- The probability of there being a difference in popcorn bags eaten is less than or equal to 5%. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **2** | • Reasonable explanation, linked to the research. |
| **1** | • Basic explanation, linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(iii) Explain why the researcher should accept or reject the null hypothesis. [2]

Exemplar answers:

- They should reject the null hypothesis because the calculated value of 57.5 is lower than the critical value of 72. [2 marks]
- They should reject the null hypothesis because the calculated value is less than the critical value. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **2** | • Accurate rejection of the null hypothesis.<br>• Reasonable justification, linked to the research. |
| **1** | • Accurate rejection of the null hypothesis.<br>• Basic justification, linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(d) Explain why a psychologist would use an independent groups design rather than a repeated measures design. [5]

Credit will be given for:

Advantages of independent groups design:
- No order effects.
- Reduced chance of demand characteristics.

Disadvantages of repeated measures design:
- Order effects, if not counterbalanced.
- More chance of demand characteristics.
- Participant attrition.

- Any other appropriate content.

| Marks | AO3 |
|---|---|
| **5** | • Thorough explanation of the advantages of independent groups design compared to repeated measures design. |
| **3 - 4** | • Reasonable explanation of the advantages of independent groups design, compared to repeated measures design.<br>**OR**<br>• Thorough explanation of the advantages of independent groups design, but not compared to repeated measures design. |
| **1 - 2** | • Basic explanation of the advantage of independent groups design, compared to repeated measures design.<br>**OR**<br>• Reasonable explanation of the advantages of independent groups design, but not compared to repeated measures design. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

11. A librarian is worried that the library where they work may be closed down due to a lack of use. A questionnaire was carried out on the high street of the town using an opportunity sample. People were asked for their reasons why they do or do not use library services.

(a) Explain **one** strength of collecting qualitative data rather than quantitative data in this questionnaire. [2]

Exemplar answers:

- Qualitative data might provide more in-depth or honest answers about their reasons for library use because the questions are not restricted to a fixed response. [2 marks]
- Qualitative data might provide more detailed answers from the public than quantitative data which will improve the validity of the study. [1 mark]
- Qualitative data is better as it will show reasons for library use. [1 mark]

- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **2** | • Reasonable explanation of an advantage of qualitative data rather than quantitative data, linked to the research. |
| **1** | • Basic explanation of an advantage of qualitative data rather than quantitative data, linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(b) Explain **one** issue of reliability with this research and how the researcher could have dealt with the issue. [4]

Exemplar answers:

- One issue might be when the questionnaire is completed by the participant on the high street. They may provide different reasons if the weather was bad, when they would be more likely to visit the library than on a sunny day. A way of dealing with this would be to hand out the questionnaires when the weather was the same each time. [4 marks]
- One issue of reliability could be that as participants only completed the questionnaire once, it is unclear if the results obtained about using library services would be consistent over time. There may be factors that are preventing someone attending the library during the initial questionnaire but may not be an issue at a later date. One way of dealing with this issue would be to carry out the same research on the same people at a later date (i.e. 6 months). If the results are the same then the research would have high external reliability. [3 marks]
- Some of the questions might not have been relevant to the topic spoiling internal reliability. They could deal with this by removing any irrelevant questions. [2 marks].
- The reasons why people do or do not use library services noted in the questionnaire may be interpreted differently when being assessed by different researchers. [2 marks]
- Some of the questions might not have been relevant to the topic spoiling internal reliability. [1 mark]
- Any other appropriate content.

| Marks | AO2 |
|---|---|
| **4** | • Reasonable explanation of a reliability issue linked to the research.<br>AND<br>• Reasonable explanation of how the issue could be dealt with linked to the research. |
| **3** | • Reasonable explanation of a reliability issue linked to the research.<br>AND<br>• Basic explanation of how the issue could be dealt with linked to the research.<br>**OR**<br>• Basic explanation of a reliability issue linked to the research.<br>AND<br>• Reasonable explanation of how the issue could be dealt with linked to the research. |
| **2** | • Basic explanation of a reliability issue linked to the research.<br>AND<br>• Basic explanation of how the issue could be dealt with linked to the research.<br>**OR**<br>• Reasonable explanation of a reliability issue linked to the research. |
| **1** | • Basic explanation of a reliability issue linked to the research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |

(c) Evaluate the use of a semi-structured interview compared to a structured interview in psychological research. [5]

Credit will be given for:

- Validity.
- Reliability.
- Advantages/disadvantages of questions used.
- Ease of analysis.
- Ethical considerations.

- Any other appropriate content.

| Marks | AO3 |
|---|---|
| **5** | • Thorough evaluation of the use of a semi-structured interview compared to a structured interview in psychological research. |
| **3 - 4** | • Reasonable evaluation of the use of a semi-structured interview compared to a structured interview in psychological research. |
| **1 - 2** | • Basic evaluation of the use of a semi-structured interview compared to a structured interview in psychological research. |
| **0** | • Inappropriate answer given.<br>• No response attempted. |