Name: _____

UNIT 2 PSYCHOLOGY

Written examination

MARKING GUIDE

Structure of book

Section	*Number of questions*	*Number of questions to be answered*	*Number of marks*
A	45	45	45
B	11	11	40
C	8	8	15
			Total 100

SECTION A — Multiple-choice questions

Q1	B
Q2	A
Q3	D
Q4	C
Q5	C
Q6	B
Q7	A
Q8	C
Q9	A
Q10	D
Q11	D
Q12	C
Q13	A
Q14	B
Q15	D
Q16	D
Q17	C
Q18	D
Q19	A
Q20	C
Q21	B
Q22	B
Q23	B
Q24	A
Q25	C
Q26	B
Q27	C
Q28	C
Q29	C
Q30	A
Q31	B
Q32	D
Q33	A
Q34	A
Q35	C
Q36	A
Q37	A
Q38	D
Q39	B
Q40	D
Q41	A
Q42	D
Q43	B
Q44	B
Q45	C

SECTION A — Multiple-choice questions

Instructions for Section A

Circle the letter which corresponds with the correct response.
Choose the response that is **correct** or that **best answers** the question.
A correct answer scores 1, an incorrect answer scores 0.
Marks will **not** be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

Question 1
Which of the following is the correct sequence for which light passes through the eye?
A. lens, pupil, iris, cornea, retina
B. cornea, pupil, lens, retina
C. lens, cornea, pupil, retina
D. cornea, iris, pupil, bipolar cells, ganglion cells

Question 2
Where are photoreceptors located?
A. retina
B. visual cortex
C. optic nerve
D. blind spot

Question 3
In visual perception, _____ involve 'rules' for grouping individual parts of an image into a whole or complete image.
A. depth cues
B. visual constancies
C. distance cues
D. Gestalt principles

Question 4
When Jill photocopied a page from her report for a research investigation she noticed that there were blank lines running through the letters on the page. Even though parts of the letters were missing, Jill was able to read the letters quite clearly and work out what they were. Jill was using the perceptual principle of
A. height in the visual field.
B. similarity.
C. closure.
D. relative size.

Question 5
An extraneous variable in an experiment is best described as a variable which
A. is manipulated by the experimenter to test its effect on the DV.
B. is unknown to the experimenter when drawing a conclusion.
C. may influence the DV and therefore needs to be controlled.
D. may become an 'extra' independent or dependent variable.

Question 6
One limitation of non-participant naturalistic observation is that
A. only people can be studied.
B. it is difficult to control variables of interest.
C. only animals can be studied.
D. only qualitative data can be collected.

Question 7
A researcher is conducting an in-depth study of a participant with a rare perceptual disorder. The researcher is most likely using the _____ research method.
A. case study
B. correlational study
C. cross-sectional study
D. observational study

Question 8
Ambiguous or reversible figures are best explained by
A. similarity.
B. interposition.
C. figure–ground organisation.
D. illusory effects.

Question 9
A plate on a table is perceived as having the same shape when seen from the front, the side, or from above.

This is an example of
A. perceptual constancy.
B. perceptual organisation.
C. context.
D. interposition.

Question 10
In the Müller-Lyer illusion, the two lines are perceived to be
A. the same length, even though each line projects a different image on the retina.
B. the same length, even when the retinal images for each line are manipulated to change depth cues.
C. the same length, even when the retinal images for each line are like those in a 'carpentered world'.
D. different in length, even though each line projects the same image on the retina.

Question 11
Taste buds are located
A. on the tongue.
B. under the tongue.
C. on the roof of the mouth.
D. all of the above.

Question 12
Taste buds are similar to rods and cones in the eye because both
A. are neurons.
B. have an indefinite lifespan.
C. are receptor cells.
D. have axons.

Question 13
The pathway for taste perception can be described as
A. taste pore - .gustatory hairs – sensory receptor – facial nerve – thalamus – gustatory cortex.
B. gustatory hairs – taste pore - .sensory receptor – thalamus – facial nerve –gustatory cortex.
C. sensory receptor - taste pore -.gustatory hairs – thalamus – facial nerve – gustatory cortex.
D. taste pore -.– sensory receptor – gustatory hairs – facial nerve – thalamus – gustatory cortex.

Question 14
Which of the following statements about taste is true?
A. Sweet and salty tastes are primarily experienced at the front of the tongue.
B. All five tastes can be experienced anywhere on the tongue.
C. Bitter and sour taste sensations have not contributed survival value.
D. Umami is not a savoury taste.

Question 15
As we age beyond 60 years, we
A. become more sensitive to variations in taste.
B. develop more taste buds.
C. acquire a better coordination between smell and taste.
D. experience a fading of taste.

Question 16
In a cross cultural experiment investigating taste preference, researchers developed a program called **Lunchbox Switch**. American teenagers were given Vegemite sandwiches for lunch. Australian teenagers (without allergies to nuts) were given peanut butter and grape jelly (jam) sandwiches for lunch. Both groups were asked to rate their **Lunchbox Switch** experience. Using what you know about taste perception, select the most likely outcome of this research.
A. American teenagers gave Vegemite sandwiches a lower rating than Australian teenagers gave Peanut Butter and Jelly sandwiches.
B. Australian teenagers gave Peanut Butter and Jelly sandwiches a lower rating than American teenagers gave Vegemite sandwiches.
C. Both groups of teenagers enjoyed their different style of sandwich in the **Lunchbox Switch** program and rated them highly.
D. Both groups reported that they would prefer to eat the sandwich they were used to over the **Lunchbox Switch** sandwich they received.

Question 17

Crash Cola had always been a dark brown drink. In order to promote how environmentally friendly the company was, the marketing department decided to turn the cola green for a month. Sales of **Crash Cola** dropped dramatically. This was probably due to

A. green food dye causing a bitter taste.

B. people not supporting an environmental cause.

C. people not expecting the cola to be green.

D. people believing that the company was really selling leftover supplies from a St Patrick's Day promotion.

Question 18

When the grandparents were invited over for a family roast meal, and they sat with their grandchildren at the table, the parents were in the kitchen trying to make the gravy look more appetising. They added Parisian Extract (a brown food dye) to the gravy because while the sauce tasted fine, it looked very light and pale and they worried dinner would be unappealing. Which of the scenarios is **not** a likely outcome?

A. The grandparents remarked on the rich and flavoursome gravy.

B. The parents thought that the gravy tasted better too.

C. The kids didn't say anything about the flavour of the gravy being different.

D. No one ate dinner.

Question 19

Synaesthesia is

A. a perceptual experience in which stimulation of one sense produces additional unusual experiences in another sense.

B. a crosswiring of neurons in the brain producing incorrect perceptions.

C. quite a common phenomenon, with one in 15 people experiencing it in some form

D. more commonly experienced with sound and touch sensations overlapping.

Question 20

Which term is most commonly used to describe our tendency to visually perceive something in accordance with what we expect it to be?

A. perceptual motivation

B. perceptual context

C. perceptual set

D. perceptual tendency

Question 21

A psychologist measured visual perceptual abilities of elderly people when they were 60 years old, then about every five years until they were 90 years old.

The psychologist used a research method called

A. an observational study.

B. a longitudinal study.

C. a cross-sectional study.

D. a cohort-sequential study.

Question 22
An attitude is best described as
A. a relatively consistent and lasting belief that reflects behaviour.
B. a judgement about someone or something.
C. a positive, negative or neutral belief underlying the development of prejudice.
D. a positive, negative or neutral judgement in response to someone or something of importance.

Question 23
When Jake found out that his doctor was in a heavy metal band, he had difficulty believing it. Being in a heavy metal band did not fit in with Jake's _____ about doctors.
A. prejudice
B. stereotype
C. discrimination
D. stigma

Question 24
Which of the following actions involves modern prejudice?
A. publicly expressing a view in support of equal pay for males and females who do the same work, but privately being against equal pay.
B. awarding a promotion to someone because of their sex rather than their ability.
C. publicly expressing a view against equal pay for males and females who do the same work, but privately being in support of equal pay.
D. awarding a promotion to someone because of their ability rather than their sex.

Question 25
In a committee meeting, _____ influence is said to occur when another member gets you to change your opinion by providing some important facts that you did not know about. However, if you change your opinion in order to gain the approval or avoid the disapproval of other committee members, then _____ influence is said to occur.
A. normative ; informational
B. persuasive; social
C. informational; normative
D. factual; informational

Question 26
'Status' refers to an individual's _____ in a group whereas 'power' refers to an individual's ability to _____ other group members**.**
A. position; abuse
B. roles; influence
C. power; pressure
D. importance; influence

Question 27
The experimenter effect occurs when
A. the order of the experimental tasks affect the results.
B. participants become more skilled as a result of repeating tasks.
C. personal characteristics of the experimenter can produce an unwanted effect on the results.
D. the experimenter delivers a placebo to one group but not the other.

Question 28
A Likert scale typically uses _____ questions to collect _____ data on attitudes.
A. open-ended; qualitative
B. fixed-response; qualitative
C. fixed-response; quantitative
D. open-ended; quantitative

Question 29
An important finding of Zimbardo's Stanford Prison Experiment is that
A. status and power can lead individuals to overlook ethical guidelines for research.
B. random allocation to a role in an experiment may not always achieve its desired effects.
C. status and power can lead individuals to behave differently from how they normally behave.
D. the study did not actually involve experimental research as there was no experimental or control group.

Question 30
_____ discrimination occurs when someone is treated unfairly and is disadvantaged because of a personal characteristic; whereas _____ discrimination occurs when treating everybody the same way disadvantages someone because of a personal characteristic.

A. direct; indirect
B. intentional; unintentional
C. indirect; direct
D. unintentional; intentional

Question 31
When someone changes how they think, feel or behave because of the real or imagined effects of the presence or actions of someone else, then _____ has occurred.
A. prejudice
B. social influence
C. discrimination
D. cognitive influence

Question 32
The Prime Minister of Australia has _____ power.
A. referent
B. informational
C. expert
D. legitimate

Question 33
If you change your behaviour to fit in with what the rest of your friendship group are doing, then you are demonstrating
A. conformity.
B. compliance.
C. social influence.
D. empathy.

Question 34
In 1968 during the Vietnam War, a group of American soldiers committed mass murder in the village of My Lai. In the course of one day, 347 unarmed Vietnamese civilians were gunned down, killed with a bayonet or blown up at close range by a small platoon of soldiers. Many of the victims were beaten, tortured, and some of the bodies were found mutilated. While 26 US soldiers were initially charged with murder for their actions at My Lai, only their commander was convicted.

According to Milgram's research findings, the American soldiers' violent and murderous behaviour is best explained by

A. obedience to the orders of a commander with legitimate authority.
B. role expectations arising from being placed in a teacher–learner situation.
C. performing the duties required of a soldier when in a war zone.
D. the close physical or social proximity of the civilians to the soldiers.

Question 35
Which of the following best summarises Asch's research findings on the relationship between group size and conformity?

A. As group size increases, so does the level of conformity.
B. Increasing group size beyond three does not significantly affect conformity.
C. Increasing group size to about four members tends to lead to an increase in conformity, and then conformity levels off.
D. Increasing group size to about nine members tends to lead to an increase in conformity, and then conformity levels off.

Question 36
Research on Asch-type conformity experiments conducted by Bond and Smith (1996) found _____ differences in conformity.

A. cultural
B. gender
C. group
D. no

Question 37
Research findings indicate that people exert less effort in team events than in individual events. These findings are best explained by

A. social loafing.
B. deindividuation.
C. diffusion of responsibility.
D. the social responsibility norm.

Question 38
Altruistic behaviour occurs when help is provided because

A. no-one else is providing help or available to help.
B. some kind of personal benefit will be obtained.
C. feelings of guilt may be experienced if we do not help.
D. help is needed rather than for any personal benefit.

Question 39
Research findings on pro-social behaviour indicate that if a stranger helped you catch your runaway pet dog you will probably find it too difficult to refuse their request if they then ask you if they can borrow your mobile phone. Your motivation to help the stranger is best explained by
A. cost–benefit analysis.
B. the reciprocity norm.
C. the social responsibility norm.
D. mutual respect.

Question 40
In relation to helping behaviour, bystander effect theory proposes that we are
A. more likely to help someone in need when many other people are present.
B. less likely to help someone in need when we are in groups than when we are alone.
C. more likely to help someone in need when we notice that other people are present and decide that one or more of the others is likely to provide help.
D. less likely to help someone in need when many other people are present.

Question 41
When someone doesn't help because they think they will look silly or foolish to other bystanders, their failure to help is due to
A. audience inhibition.
B. bystander intervention.
C. social loafing.
D. cost-benefit analysis.

Question 42
A generalisation can be described as
A. a statement that rejects or supports the hypothesis.
B. a conclusion.
C. a significance level.
D. a statement of how widely the research findings can be applied to the population.

Question 43
If the results of a research study can be confidently generalised to situations outside the laboratory, the study has _____ validity.
A. internal
B. external
C. concurrent
D. general

Question 44
In experimental research, a confounding variable is a variable that
A. is manipulated in the experimental condition but not in the control condition.
B. makes it difficult to determine the effect of the independent variable.
C. is manipulated in the control condition but not in the experimental condition.
D. makes it difficult to measure the dependent variable.

Question 45

A researcher conducted a study on attitudes towards racial discrimination in the workplace. The sample was selected using a list of all staff employed in large factory. The researcher used a sampling method which ensured managers, team leaders, office staff and factory labourers were proportionally represented in the final sample. If two managers were required for the sample, then the first two managers in the staff list were selected. If four team leaders were required, then the first four team leaders in the staff list were selected, and so on until the required sample was selected.

The sampling method used by the researcher is best described as

A. random allocation.
B. random sampling.
C. stratified sampling.
D. stratified-random sampling.

SECTION B — Short answer questions

Question 1 (1 mark)
What is attribution? 1 mark

Explanation may refer to:
- the process by which people explain the causes of their own and other people's behaviour or
- how people explain their own and other people's behaviour to themselves

Award 1 mark for a valid explanation

Question 2 (2 marks)
a. What is stereotyping? 1 mark

Description may refer to:
- an assumption(s) about an individual made on the basis of their group membership.
- the process of grouping or 'fitting' people into a category based on what is known about them.

Award 1 mark for a valid explanation.

b. How can stereotyping contribute to the development of prejudice? 1 mark

Explanation may refer to:
- inaccurate/inadequate information.
- ignoring individuality.

Award 1 mark for a valid and relevant point.

Question 3 (4 marks)
When Jane Elliot separated her Year 3 students into privileged brown-eyed children and 'lazy' and 'stupid' blue-eyed children and then reversed the conditions in the following week, she enacted a clear demonstration of the role of ingroups and outgroups.

Define the following terms and use Elliot's classroom activity to explain how they apply to her students:

a. ingroup 2 marks

Explanation may include the following.
- An ingroup refers to a group that an individual identifies with or belongs to.
- Elliot separated the students into groups based on eye colour, so this feature is the criteria for belonging.

b. outgroup 2 marks

Explanation may include the following.
- An outgroup refers to a group that an individual does not identify with or belong to.
- Blue-eyed students perceived themselves as different to their brown-eyed peers. The brown-eyed children are categorised as the outgroup based on the perspective of blue-eyed children and vice-versa.

Award 1 mark for each of two relevant points.

Question 4 (4 marks)
Consider the following attitude statement.

I wouldn't go to a nightclub in the Melbourne's King Street area because people always get drunk, start brawling and hurt each other. It would be very distressing to get caught up in or even witness this happening.

a. Describe the tri-component model of attitudes. 1 mark

Award 1 mark for an explanation that includes the following.
The tri-component model of attitudes proposes that any attitude has three related components: the affective, behavioural and cognitive components.

b. Identify the components and explain each part in the formation of the attitude above with reference to the tri-component model of attitudes. 3 marks

Award one mark for each correct pairing of the attitude component and the example used.
Attitude components identified and explained should refer to:

- *affective:* distress due to getting caught up in or witnessing drunkenness, brawling and/or harm to others
- *cognitive:* the belief that people always get drunk, start brawling and hurt each other
- *behavioural:* not going to a nightclub in Melbourne's King Street area.

Question 5 (2 marks)
Distinguish between racial prejudice and discrimination.

Explanation of difference should refer to racial prejudice as an attitude (1 mark) and racial discrimination as a behaviour/outward expression (1 mark).

Question 6 (2 marks)
Some people believe that simply bringing together members of two groups who are prejudiced towards each other will reduce their prejudice.

Comment on the accuracy of this belief with reference to psychological theory and/or research findings.

Commentary should refer to intergroup contact only reducing prejudice under certain conditions (1 mark), and refer to at least one of those conditions e.g. sustained contact, mutual interdependence, superordinate goals, equality of status (1 mark).

Question 7 (7 marks)

a. In visual perception, the light energy conversion process in the retina is commonly called _____; whereas the process of sending converted light energy from the retina to the brain is called _____.
2 marks

transduction (1 mark); transmission (1 mark)

b. Explain the difference between **one** of the following pairs of processes. 2 marks

- visual sensation and visual perception
- organisation and interpretation in visual perception

Explanation should refer to visual sensation as involving detection and response (by the eye and photoreceptors) to light/sensory information and visual perception as involving processes by which meaning is assigned to the incoming visual sensory information (resulting in our personal interpretation and conscious experience of that information).
Award 1 mark for a valid point in relation to visual sensation and 1 mark for a valid point in relation to visual perception.

Explanation of organisation should refer to assembling/arranging the features of a visual image in a meaningful way to support/enable interpretation.
Award 1 mark for a valid explanation.

Explanation of interpretation should refer to assigning/giving meaning to the visual information in order to know/understand/make sense of a visual image (often relying on organisation).
Award 1 mark for a valid explanation.

c. Describe the role of depth cues in visual perception with reference to an example of a monocular depth cue and binocular depth cue. 3 marks

Description of depth cues should refer to sources of information from the environment (external cues) or from within our body (internal cues) that support/enable perception of how far away objects are and therefore to perceive depth.
Award 1 mark for a valid explanation.

Binocular cues include: retinal disparity, convergence.
Award 1 mark for correctly naming and exemplifying/describing a binocular cue.

Monocular cues include: accommodation, linear perspective, interposition, texture gradient, relative size, height in the visual field.
Award 1 mark for correctly naming and exemplifying/describing a monocular cue.

Question 8 (3 marks)
Consider visual illusions.

a. Give a psychological definition of the term ‘visual illusion’. 1 mark

Definition should refer to

- a misinterpretation/distortion/mistake in perception of real visual sensory information, or, a visual perceptual experience involving a mismatch between what is seen/perceived and what is understood as physical reality
- this occurs consistently/every time that sensory information is viewed/seen.

Award 1 mark for both points.

b. Briefly describe how the experience of a visual illusion might be explained by a psychologist adopting a cognitive perspective, as compared with a psychologist adopting a biological perspective. 2 marks

Explanation from the biological perspective should refer to a visual illusion resulting from malfunction/damage/defect in one or more anatomical/physiological structures or processes in the visual system.
Award 1 mark for a valid explanation.
Explanation from the cognitive perspective should refer to a visual illusion resulting from inappropriate/incorrect processing/use (e.g. attention, memory, application of principles or constancies) of the visual information.
Award 1 mark for a valid explanation.

Question 9 (5 marks)
A broccoli farmer wanted to increase the sales of her product. She worked with a psychologist to investigate the vegetable-eating habits of children. The psychologist wanted to collect empirical data from two groups: children who were deemed to be fussy eaters and were part of a food therapy group at school, and children from the same school who were not identified as fussy eaters.

a. Define the term empirical evidence in relation to research. 1 mark

Definition should refer to data collected by a researcher using direct observation or experimentation.
Award 1 mark for a valid definition.

b. Name the group in the broccoli experiment that has been formed by a convenience sample. Describe how a convenience sample is used in experimental research. 2 marks

- The fussy eaters group in food therapy.
- Convenience sampling (or opportunity sampling) involves selecting participants who are readily available without any attempt to make the sample representative of a population.

Award 1 mark for a identifying the group and 1 mark for a valid description.

The psychologist found that when broccoli was presented to both fussy eaters and normal eaters on a plate featuring a cartoon character 'Brocky the Racing Vegie Driver', the children in both groups were more likely to eat the broccoli than if it was presented on a plain plate. She recommended that the farmer package broccoli florets in a bag with a picture of 'Brocky the Racing Vegie Driver' on it.

c. List a reason why 'Brocky' works to encourage children to eat their vegetables. 1 mark

- The appearance of food is an important psychological factor in determining how we experience the taste of our food. Products that 'Brocky' endorses by being on the package are more likely to be viewed as tasty by the children.
- Perceptual set sets up a positive expectancy of the experience of eating broccoli because 'Brocky' likes it.
  Award 1 mark for a valid explanation of food appearance/perceptual set and its effect on taste.

The psychologist also found one group that would not eat the broccoli at all, claiming it was disgusting. On further examination the psychologist found that these children were supertasters.

d. List a biological characteristic that differentiate supertasters from normal tasters. 1 mark

Award 1 mark for any of the following:
- Supertasters have 2–3 times as many taste buds as normal tasters.
- Supertasters have a variant of one gene, TAS2R38.
- Supertasters have an innate sensitivity to bitter foods.

Question 10 (1 mark)
Define 'power'. 1 mark

Definition should include:
- Power refers to an individual's (or group's) ability to control or influence the thoughts, feelings or behaviour of another person (or group).

Award 1 mark for correct definition.

Question 11 (9 marks)
Choose **one** of the following researchers/experiments.

- Milgram and his research on obedience
- Zimbardo and the Stanford Prison Experiment

a. What were roles played by participants in the experiment? 1 mark

- Milgram: Participants are divided into teachers and learners but this is rigged so that the confederate always becomes the learner.
  OR
- Zimbardo: Participants are divided into guards and prisoners.

Award 1 mark for identification of roles.

b. How were roles allocated by the researcher in the experiment? 1 mark

- Milgram: Teachers were the genuine participants required to help learners memorise a series of word pairs. Learners were the stooges (confederates) organised by the experimenters to play act electrocution.
  OR
- Zimbardo: Participants were randomly assigned (coin toss) the role of guard or prisoner. They volunteered and were paid for their involvement.

Award 1 mark for explanation of role allocation.

c. Explain the difference between random sampling and random allocation for a research study. 2 marks

- Explanation should refer to random sampling as a systematic procedure for selecting participants from the target population (1 mark), and random allocation as a systematic procedure for allocating/assigning/placing participants in the sample to different groups/conditions of the research study (1 mark).

d. Describe how the participants played their roles. 2 marks

- Milgram: The learners were instructed by the experimenters to deliberately get wrong responses and to react in specific ways depending on the degree of electrocution they were supposedly receiving. As far as the teachers were aware, they witnessed the learners being strapped into an electric chair before being taken to administer shocks in an adjoining room. If they questioned what they were doing, the experimenter would answer 'The experiment requires that you must to continue'

  OR
- Zimbardo: Guards were given considerable status and became quite abusive of their power. Some had a hard time letting go of their position of power when the experiment ended. Prisoners had to ask permission from the guards to perform the most basic functions. Prisoners referred to each other and to themselves by their numbers only. They became traumatised and dehumanised.

Award 1 mark for each role described.

e. A television producer wants to make a reality show by replicating the study you've just profiled.

(i) What is the main purpose of replicating a study? 1 mark

- Purpose should refer to determining reliability of the results/findings.

Award 1 mark for a valid explanation.

(ii) Name and explain one reason any ethical committee would reject replicating either the study by Milgram or Zimbardo, under any circumstances, especially in being broadcast on television. 2 marks

Any of the following ethical considerations could be applied: protection and security of participants' information, confidentiality, voluntary participation, withdrawal rights, informed consent procedures, use of deception in research, debriefing and protecting the well-being of participants.

Award one mark for the ethical consideration named and one mark for an accurate description of it. See chapter 2 pp. 69–73 for a comprehensive list of all ethical procedures and their descriptions.

SECTION C — Research scenario

Instructions for Section C
Answer the questions in the spaces provided. Your responses may include diagrams, charts and tables.

A psychologist studied differences in the speed and accuracy of perceptual judgements when using monocular vision and binocular vision. The experiment was conducted in a nursing home for elderly people. All the residents of the nursing home live there because they are unable to live independently in the community and require full-time care. It was expected that binocular vision (use of both eyes) would be better than monocular vision (use of one eye only). The task required of participants involved identification of various shapes presented on a computer screen.

Forty elderly residents (26 females and 14 males) participated in the experiment. The 40 participants were randomly selected from a group of 60 residents who had all volunteered to participate in the experiment. There were another 100 residents in the nursing home, but these elderly people did not volunteer to be in the experiment.

Male participants were only available on Mondays and Wednesdays and females on Thursdays and Fridays. So, male participants were allocated to Group 1 and tested on a Monday and female participants were allocated to Group 2 and tested the following Thursday.

Group 1 used monocular vision and achieved a mean score of 15/30 on a test designed to measure speed and accuracy of perceptual judgements. Group 2 used binocular vision and achieved a mean score of 21/30. The results are shown in the figure below. Percentages were calculated so that the results could be easily compared. Statistical tests indicated that there was a significant difference in the scores of the two groups. Consequently, the researcher concluded that speed and accuracy of perceptual judgements by elderly people is faster and better when binocular vision is used.

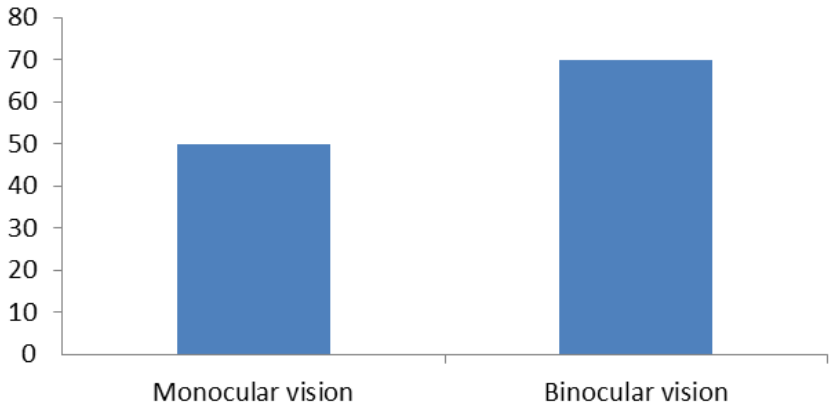

Figure 1 Comparison of monocular and binocular vision on speed and accuracy of perceptual judgements by elderly people

Question 1 (2 marks)
How many elderly residents were in the sample and how many in the population?

sample: 40 (1 mark)
population: 160 (1 mark)

Question 2 (1 mark)
Why were participants randomly selected from volunteers?

Explanation should refer to the researcher endeavouring to ensure the sample is representative of the volunteers. (1 mark)
Do not accept an explanation referring to limited/reduced sample size or ethics (i.e. voluntary participation).

Question 3 (2 marks)
What are the independent and dependent variables?

independent variable: use of monocular or binocular vision (1 mark)
dependent variable: score on a test of perceptual speed and accuracy (1 mark)

Question 4 (1 mark)
Construct a hypothesis for the experiment.

Example:
Elderly people using binocular vision will score higher on a test of visual perceptual speed and accuracy than participants using monocular vision.

Question 5 (1 mark)
Write a label for the *y*-axis in Figure 1.

label: Examples include: Score (%) / Per cent score / Percentage score (1 mark)

Question 6 (2 marks)
Describe the results obtained for the experiment.

Results should refer to a Group 1 monocular vision mean score of 50% on the perceptual speed and accuracy test (1 mark) and a Group 2 binocular vision mean score of 70% on the perceptual speed and accuracy test (1 mark).

Question 7 (3 marks)
Explain whether the researcher's conclusion is valid.

Explanation should refer to:

- conclusion not valid despite the significantly higher mean score of Group 2 (binocular vision) (1 mark)
- due to the potential confounding variable of sex differences; that is, substantially more females in the Group 2 (binocular vision) (1 mark) so higher scores may have been inflated by and therefore attributable to the inherently better ability of females on perceptual speed and accuracy tasks (so not possible to conclude with confidence that the difference in scores on the DV was due to the IV or to female participant abilities that had an unwanted and uncontrolled influence on the DV) (1 mark)

Question 8 (3 marks)

a. What is external validity? 1 mark

Explanation should demonstrate understanding that the conclusion can be generalised/applied to the population of research interest. (1 mark)

b. Explain whether the experiment has external validity. 2 marks

Explanation should demonstrate understanding that the conclusion lacks external validity (1 mark) as it lacks internal validity (1 mark).