



Trial Examination 2023

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**Suggested Solutions**

# **QCE Psychology Units 3&4**

**Paper 2**

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## SECTION 1

### QUESTION 1 (10 marks)

- a) A neutral stimulus does not initially produce any specific responses, whereas an unconditioned stimulus causes an automatic response. When the neutral stimulus and unconditioned stimulus are presented at the same time, the response caused by the unconditioned stimulus is transferred to the neutral stimulus (*which then becomes the conditioned stimulus*). An example of a neutral stimulus from the investigation is the white rat. An example of an unconditioned stimulus from the investigation is the loud noise.

[3 marks]

*1 mark for distinguishing between a neutral and an unconditioned stimulus.*

*1 mark for providing an example of a neutral stimulus from the investigation.*

*1 mark for providing an example of an unconditioned stimulus from the investigation.*

*Note: Responses must include a contrasting word to receive full marks; for example, 'whereas', 'however', 'in contrast', 'differently'.*

- b) Extinction refers to a previously conditioned response that begins to fade and eventually disappears if the conditioned stimulus is repeatedly presented alone. For example, if Little Albert was continually exposed to the white rat without the accompanying loud noise to the point where he no longer responded with fear when exposed to the rat, Little Albert would have demonstrated extinction of his fear response.

[2 marks]

*1 mark for describing extinction.*

*1 mark for providing an example of extinction that is relevant to the investigation.*

- c) Both experiments involved an attempt to change behaviour in response to stimuli and studied different forms of learning.

Watson and Rayner investigated classical conditioning theories of behaviour, while Bandura investigated social learning theories of behaviour.

The difference between the investigations are significant as Watson and Rayner demonstrated that fear can be learned through association with a neutral stimulus, whereas Bandura demonstrated that fear can be learned through observation of other people's behaviour.

[3 marks]

*1 mark for recognising at least one similarity.*

*1 mark for recognising the difference.*

*1 mark for identifying the significance of the difference.*

- d) vicarious conditioning and modelling

[2 marks]

*1 mark for identifying vicarious conditioning.*

*1 mark for identifying modelling.*

**QUESTION 2 (8 marks)**

- a) Stereotypes become activated automatically in the presence of certain behaviours. For example, in experiment 1 of the investigation, participants who were met by a rude confederate interrupted the experimenter faster than those met by a polite confederate.

[2 marks]

*1 mark for describing how stereotypes influence behaviour.**1 mark for providing an example from experiment 1.*

- b) The priming effect is when an individual's exposure to a stimulus influences their response to subsequent stimuli, without the individual having any awareness of the connection between the two stimuli.

*Any one of:*

- In experiment 1, participants primed with the rude condition interrupted the experimenter significantly faster than the participants primed with the polite or neutral conditions.
- In experiment 2, participants primed with an elderly stereotype had a significantly slower walking speed than participants primed with the neutral condition.
- In experiment 3, participants primed with subliminal photographs of African-American faces behaved in a more hostile fashion than participants primed with photographs of Caucasian faces.

[2 marks]

*1 mark for describing the priming effect.**1 mark for providing an example from the investigation.**Note: Only one example is required and can be taken from any of the three different experiments.*

- c) *For example, any one of the following strengths:*

- The experimental methodology increased the internal reliability and validity of the investigation.
- Various measures were used to control extraneous variables (such as pre-trials and random allocation).

*For example, any one of the following limitations:*

- The small sample size of undergraduate students limited the population validity of the investigation.
- The laboratory experiments decreased ecological validity.

[2 marks]

*1 mark for identifying a strength.**1 mark for identifying a limitation.**Note: Accept any appropriate strengths and limitations.*

- d) *For example:*

The investigation found that prosocial behaviour can be triggered automatically by features in the environment. By displaying empathic messaging and demonstrating empathy when interacting with students, teachers can prime students into developing an empathic attitude.

[2 marks]

*1 mark for identifying the overall conclusion of the investigation.**1 mark for proposing an example of priming prosocial behaviour.**Note: Accept any appropriate proposal.*

**QUESTION 3 (7 marks)**

- a) The participants administered high intensity electric shocks because they were obeying instructions and orders from an authority figure.

[1 mark]

*1 mark for explaining the behaviour of the participants in terms of obedience.*

- b) The fundamental attribution error is the tendency for an individual to attribute someone else's actions to their personality or other characteristics (dispositional attributes), while attributing their own actions to external attributes out of their control (situational attributes). An individual observing the teachers' behaviour would be demonstrating the fundamental attribution error if they attributed the teachers' actions to dispositional attributes, such as negative aspects of their personalities, rather than situational attributes, such as their position as an authority figure.

[2 marks]

*1 mark for describing the fundamental attribution error.*

*1 mark for applying the fundamental attribution error to the investigation.*

- c) In research, deception refers to when participants are intentionally misled about the true nature of an investigation to prevent the participants' behaviour from affecting the investigation. If participants know the true nature of the investigation that they are participating in, this knowledge may affect their behaviour and subsequently impact the validity of the investigation. Milgram deceived participants by informing them that the investigation was about memory and learning, when it was actually about obedience to authority figures.

[2 marks]

*1 mark for describing the purpose of deception in research.*

*1 mark for describing how Milgram used deception in the investigation.*

- d) Any two of:

- The investigation was unethical because participants were psychologically harmed by being made to believe that they were inflicting harm on another person.
- There was a lack of population validity.
- The investigation was unethical as participants were not fully informed of the purpose of the experiment and could not make an informed decision about their participation.
- The investigation was unethical because the right to withdraw was not made clear due to constant requests by the experimenters to continue with the investigation.
- The investigation lacked ecological validity as it took place in a laboratory setting.
- The investigation was completed in the 1960s; therefore the results may lack historical validity in the present day.

[2 marks]

*1 mark for each limitation identified.*

**QUESTION 4 (10 marks)**

- a) Participants used their semantic memory store, which is an explicit long-term memory store that involves the formation and storage of facts, words, concepts and numbers. As this investigation involved learning word pairs, participants used their semantic memory store.

[2 marks]

*1 mark for identifying the type of explicit long-term memory store.*

*1 mark for providing justification.*

- b) The area of the brain responsible for the memory formation in this investigation is the hippocampus. The hippocampus is responsible for memory formation and consolidation of declarative (explicit) memory, such as episodic and semantic memory.

[2 marks]

*1 mark for identifying the hippocampus.*

*1 mark for describing the role of the hippocampus in memory.*

- c) Conditions 2, 3 and 4 used maintenance rehearsal, which is the repetition of specific information until it is learned. In the investigation, participants in conditions 2, 3 and 4 were able to repeatedly study the word pairs to help store the word pairs to memory.

[2 marks]

*1 mark for describing maintenance rehearsal.*

*1 mark for providing justification.*

- d) Retrieval failure may have occurred. This refers to when the correct cues to retrieve information are not available (*computers not being used*).

Retroactive interference may have occurred. This refers to when new information replaces previously learnt information (*such as any new semantic memory formed in the month since after learning the word pairs*).

[4 marks]

*1 mark for identifying retrieval failure.*

*1 mark for describing retrieval failure.*

*1 mark for identifying retroactive interference.*

*1 mark for describing retroactive interference.*

*Note: Responses are not required to provide examples from the investigation to obtain full marks.*

**QUESTION 5 (10 marks)**

- a) There are no obvious outliers in the data.

[1 mark]

*1 mark for identifying that there are no obvious outliers.*

b) 
$$\text{mean} = \frac{7.8 + 6.2 + 7.3 + 6.5 + 7.8 + 6.9 + 8.1 + 7.2}{8}$$
$$= \frac{57.8}{8}$$
$$= 7.23$$

[2 marks]

*1 mark for showing working.*

*1 mark for calculating the mean to two decimal places.*

- c) *For example:*

The mean for the descriptive signage condition was greater than the injunctive signage condition.

[1 mark]

*1 mark for recognising the difference between the two mean values.*

- d) The descriptive signage condition had the greater variability as it had a higher standard deviation (SD = 0.67) than the injunctive signage condition (SD = 0.55).

[2 marks]

*1 mark for determining the descriptive condition.*

*1 mark for providing justification in terms of standard deviations.*

- e) As the  $p$ -value is less than 0.05, there was a significant difference in the amount of petrified wood removed between the two signage types. Therefore, using injunctive norms in signage resulted in significantly less petrified wood being removed, when compared to using descriptive norms in signage.

[2 marks]

*1 mark for recognising that the statistical result was significant.*

*1 mark for drawing a conclusion relevant to the  $p$ -value.*

- f) The best type of signage to deter visitors from removing petrified wood was the injunctive signage, as this resulted in significantly less ( $p < 0.05$ ) petrified wood (3.1% removed), compared to the descriptive signage (7.23% removed).

[2 marks]

*1 mark for concluding that the injunctive signage was more effective.*

*1 mark for justifying the conclusion with data from the investigation.*

*Note: The response must refer to the  $p$ -value and mean amount of wood removed (%).*