Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

CENTRE NUMBER | | | | | |

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PSYCHOLOGY **9990/12**

Paper 1 Approaches, Issues and Debates **February/March 2023**

1 hour 30 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages. Any blank pages are indicated.

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Answer **all** questions.

1 From the study by Pepperberg (parrot learning):

(a) Alex the parrot was tested for comprehension using three response labels. Two of these were colour and shape.

Name the third response label that Alex could use.

Matter (mah-mah) [1]

(b) Alex the parrot had indirect experience of novel (new) objects before the Transfer Tests. This was to reduce a fear response in Alex.

Outline the indirect experience Alex had with novel (new) objects before the Transfer Tests.

Novel objects were placed on shelves in Alex's view for several days before the Transfer Tests. Humans handled them in the laboratory, e.g. as part of cleaning, but their colour, shape and material were never labelled for him. [2]

2 The study by Baron-Cohen et al. (eyes test) revised the 'Reading the Mind in the Eyes' test from the original version.

Describe the original version of the 'Reading the Mind in the Eyes' test.

Participants were shown 25 photographs of the eye region of the faces of male and female actors and actresses (taken from magazines). For each pair of eyes they had a forced choice between two words, which were semantic opposites, e.g. concerned or unconcerned. The words described both basic and complex mental states. The participant had to choose the word that best described what the person in the photograph was thinking or feeling. [4]

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3 Explain **one** problem that could arise if children were used as participants in the study by Milgram (obedience).

There would be ethical problems with protecting children from psychological harm, as children are more vulnerable than adults. In Milgram's study a child would have to believe they were giving painful electric shocks of up to 450 volts to another person who was screaming and pounding on the wall, which would be extremely distressing and could harm their mental state after the study.

..... [3]

4 From the study by Dement and Kleitman (sleep and dreams):

(a) Participants arrived at the laboratory before their usual bedtime.

Outline the procedure from when a participant arrived at the laboratory until the end of the study.

Two or more electrodes were attached near the participant's eyes to record eye movements, and two or three were attached to the scalp to record brain waves. All the lead wires were gathered into a single cord (like a ponytail) from the top of the head. The participant went to bed in a quiet, dark room and the EEG ran continuously all night. At various times in the night they were woken by a doorbell, in either REM or NREM sleep, and spoke into a tape recorder to say whether they had been dreaming and to describe the dream. Some were asked whether they had been dreaming for 5 or 15 minutes. ..... [4]

(b) Outline **one** conclusion from this study in relation to eye movement during REM sleep.

The pattern of eye movements during REM sleep is related to the visual imagery in the dream, as they fit with what the dreamer is looking at in the dream, which suggests that the eye movements are not random.

..... [2]

5 From the study by Yamamoto et al. (chimpanzee helping):

(a) One aim was to investigate whether chimpanzees only help when they can see what another chimpanzee needs to complete a task.

Outline **one** other aim.

To investigate whether chimpanzees can understand the needs of another chimpanzee and respond with targeted helping, by selecting and giving the appropriate tool that the other chimpanzee needs.

..... [2]

(b) The results included data from one 'Cannot See' condition and two 'Can See' conditions.

(i) Outline **one** result from the 'Cannot See' condition.

An object was offered on 95.8% of trials, which was no different in frequency from the first Can See condition. Upon-request offers were more frequent than voluntary offers.

..... [2]

(ii) Outline **one** result from the second 'Can See' condition.

An object was offered on over 97% of trials, and the three chimpanzees offered potential tools more frequently than nontool objects, for both the stick and the straw tasks.

..... [2]

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6 From the study by Laney et al. (false memory):

(a) Describe the background to this study.

Memory is reconstructive, so people can fill in gaps in their memories with false information. Post-event information can become embedded in the real memory, so people may remember events that never happened. Researchers have implanted negative false memories, and entirely false ones, e.g. Braun et al. convinced people that they had met Bugs Bunny at Disneyland (impossible, as he is not a Disney character). However, there had been little research into the effects of implanting a false positive memory, which could alter childhood memories and behaviour.

[4]

(b) Explain why this study is from the cognitive approach.

The cognitive approach assumes behaviour can be explained by internal mental processes such as memory. Laney et al. investigated how a false suggestion that people had loved asparagus as a child changed their memory, so the study examined how people remember false information. [2]

7 Suggest **two** real-world applications based on the study by Bandura et al. (aggression).

Your suggestions **must** be ethical.

1 *Children can be taught prosocial behaviour at school. Teachers could act as models, behaving kindly, sharing and using polite speech in front of the class, so children observe and imitate this behaviour, as Bandura showed children copy adult models.*

2 *TV channels could reduce antisocial behaviour in children by showing less aggression in children's programmes and more characters behaving well, so children have fewer aggressive models to imitate and more prosocial models instead.*

[4]

8 Two friends, Himmat and Urvi, are discussing the individual and situational explanations for behaviour in relation to the study by Canli et al. (brain scans and emotions). Himmat thinks the study supports the individual explanation but Urvi thinks the study supports the situational explanation.

Explain **one** reason why Himmat is correct and **one** reason why Urvi is correct, using evidence from this study.

Himmat (individual explanation) *The individual explanation states we behave because of internal factors such as our personality, so different people perceive and respond to the same images in different ways. In Canli et al.'s study each of the 10 women rated the same 96 scenes for emotional intensity, and there were individual differences in how each scene was rated. Activation of the left amygdala predicted later memory for the scenes that each participant herself rated as highly emotional, so memory depended on her individual emotional response.*

Urvi (situational explanation) *The situational explanation states we behave because of the environment we are in or the people around us. Participants viewed the scenes while lying in an fMRI scanner, an unusual and noisy situation, so they may have been more anxious or emotional than usual, which may have affected their ratings and recall. Also, some participants may have experienced situations similar to the scenes before the study, so those scenes would be more familiar and easier to remember, so the results may reflect their past situations rather than their personality.*

[6]

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9 **(a)** Describe the sample used in the study by Piliavin et al. (subway Samaritans).

It was an opportunity sample of approximately 4450 men and women travelling on the New York subway, on weekdays between 11am and 3pm, in either direction. About 45% were black and 55% were white, with an average of 43 passengers in each carriage. They were unsolicited, so they never knew they were in a study and were never asked to take part.

[4]

(b) Explain whether each ethical guideline below was broken in the study by Piliavin et al. (subway Samaritans):

confidentiality *Data should not be identifiable as any one participant's. This was not broken, as no names or individual data were published; all we know is that they were passengers on a New York subway train.*

informed consent *Participants should be given enough information to decide whether to take part. This was broken, as passengers did not even know a study was taking place, so they could not be asked if they wanted to take part.*

protection from psychological harm *Participants should leave the study in the same psychological state as they entered. This was broken, as passengers had to witness a man collapse on the train, which is distressing, and those who did not help may have felt guilty afterwards.*

right to withdraw *Participants should be able to leave the study at any point. This was broken, as the passengers were trapped in the moving subway carriage between stops and could not leave to escape witnessing the collapse, although some did move out of the critical area.*

[8]

10 Evaluate the study by Andrade (doodling) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about generalisations.

One strength is internal validity because of the controls. All participants heard the same tape-recorded 2.5 minute telephone message about a party, spoken in a monotonous voice, and participants were randomly allocated to the doodling or control condition. The doodling group all shaded the same printed shapes while listening. Because extraneous variables were controlled, Andrade could conclude that doodling caused the better recall.

A second strength is that the study collected quantitative data, the number of names and places correctly recalled in a surprise memory test. This is objective and easy to compare: the doodling group recalled a mean of 7.5 names compared with 5.8 in the control group, 29% more, showing clearly that doodling improved attention and memory.

However, one weakness is about generalisations. The sample was only 40 people from the panel of the MRC Applied Psychology Unit in Cambridge, and 35 of them were female. People on a research panel may be used to taking part in studies and may have better concentration than others, so the results may not generalise to men or to the wider population, e.g. people with poor concentration who may benefit from doodling in a different way.

A second weakness is low ecological validity. Participants were told to shade shapes, which is not like spontaneous everyday doodling, and they listened to a deliberately boring recorded message instead of a real phone call or lecture. So the findings may not show whether doodling helps attention in real life. There was also an ethical issue of deception, as participants were not told about the surprise memory test.

Overall, the controls and objective data give good evidence that doodling helps attention, but the narrow sample and artificial task mean we should be cautious when applying the findings to everyday life.

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