Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

CENTRE NUMBER | | | | | |

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7276189163

PSYCHOLOGY **9990/12**

Paper 1 Approaches, Issues and Debates **February/March 2021**

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 Dement and Kleitman (sleep and dreams):

(a) Name the stage of sleep when participants recalled most of their dreams.

REM sleep (rapid eye movement, stage 5 / paradoxical sleep). [1]

(b) Outline **one** dream reported by a participant that had vertical eye movements.

One participant whose eye movements were mainly vertical dreamt that he was standing at the bottom of a tall cliff operating a hoist, looking up at climbers at different levels on the cliff and down at the hoist machinery. [2]

(c) Outline **one** conclusion from this study.

The eye movements made during REM sleep correspond to the content of the dream, as if the dreamer is looking around the dream scene. Also, dreams are not instant but happen in real time, as participants could judge the length of their REM dreams accurately. [2]

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2 In the study by Piliavin et al. (subway Samaritans), one observer watched passengers in the critical area.

(a) Name **two** variables this observer recorded about these passengers.

Race of each passenger in the critical area.

Sex of each passenger, and their location (where they were sitting or standing).

[2]

(b) Piliavin et al. investigated the idea of 'diffusion of responsibility'.

(i) Outline what is meant by 'diffusion of responsibility'.

Diffusion of responsibility is when people are less likely to help someone in an emergency when there are more bystanders present, because each person feels less personally responsible, as the responsibility is shared and they assume someone else will help. [2]

(ii) Outline **one** finding that did **not** support diffusion of responsibility in this study.

Piliavin et al. found that larger groups did not help less: groups of seven or more people responded faster to the victim than groups of only one to three people, which is the opposite of what diffusion of responsibility predicts.

[2]

3 Explain one or more real-world applications of the study by Bandura et al. (aggression).
Do **not** refer to more than three applications in your answer.

One application is reducing children's aggression by controlling the role models they see. Bandura et al. found children imitated the physical and verbal aggression of an adult model, especially boys copying a male model. So TV and film makers could be more responsible, e.g. not showing violent acts by same-sex role models before the watershed, and parents could use age ratings to stop children watching aggressive behaviour that they might copy.

A second application is promoting prosocial behaviour. Since children learn through observation, teachers and parents could model calm, helpful behaviour, e.g. sharing toys and solving arguments without violence, and praise children who copy it, so the children imitate these behaviours instead of aggression. [5]

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4 From the study by Canli et al. (brain scans and emotions):

(a) Name **two** characteristics that were used to match the foil scenes and the previously viewed scenes.

1 *Valence (how negative the scenes were rated).*

2 *Arousal (how emotionally intense the scenes were rated).* [2]

(b) Describe the participants used in this study.

The participants were ten volunteers. They were all female and all right-handed, and all were healthy, with no history of neurological or psychiatric problems. They gave informed consent before being scanned in the fMRI scanner while viewing the scenes.

[3]

(c) Explain why this study is from the biological approach.

Canli et al. used fMRI brain scans to measure activity in the amygdala while women viewed emotional scenes, so they were explaining emotional memory in terms of a physical structure of the brain, i.e. how our biology affects our emotion and memory.

[2]

5 In the study by Milgram (obedience), there was a victim (learner) and a participant (teacher).

Describe the procedure the victim followed to give feedback to the participant during the learning task.

The learner's answers were predetermined, not genuine. He gave his answers to the word pair test by pressing one of four switches, which lit up a numbered box on top of the shock generator, and he gave approximately three wrong answers to every one correct answer. He made no vocal response until the shock level reached 300 volts. At 300 volts he pounded on the wall of the room, and from then on gave no answers on the answer box. He pounded on the wall again at 315 volts, and after that there was no further pounding and no more answers at all.

..... [4]

6 Describe the psychology being investigated in the study by Pepperberg that used Alex the parrot as a participant.

Pepperberg investigated whether a non-human animal, Alex the African Grey parrot, could learn the cognitive concept of same and different and use it with English labels (colour, shape, matter). The learning was based on operant conditioning: a behaviour followed by a reward is more likely to be repeated, while a behaviour that is not rewarded or is punished is less likely to be repeated. Alex was rewarded with the object and praise for correct answers, and scolded for incorrect ones. It also used social learning through the model/rival technique: Alex observed a human model being rewarded for answering the trainer's questions, paid attention, retained the responses, and was motivated by this vicarious reinforcement to imitate them.

..... [5]

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

(a) Outline **one** aim of this study.

To investigate whether chimpanzees can understand the needs of another chimpanzee and respond with targeted helping, i.e. offer the appropriate tool, even with no immediate gain for themselves.

..... [2]

(b) Outline **one** methodological weakness of this study.

The sample was small, only a few mother and offspring pairs of captive chimpanzees at a research institute, used to working with humans. They may not represent chimpanzees in the wild and their helping behaviour, so the results lack generalisability.

..... [2]

(c) Suggest **one** real-world application based on the procedure of this study.

The procedure could be used in schools to teach children about helping. Teachers could set up a similar task where one child needs a particular item to reach a reward, so the other child has to understand their partner's need and pass the correct item.

..... [2]

8 **(a)** Outline what is meant by the nature–nurture debate, using any examples.
Do **not** refer to the study by Schachter and Singer (two factors in emotion) in your answer.

Nature is the view that behaviour is innate, caused by our genes and biology that we are born with. For example, a person may inherit genes that make them more likely to develop schizophrenia.

Nurture is the view that behaviour is learned from the environment after birth, through experience and upbringing. For example, in Bandura et al. children learned aggressive acts by watching an aggressive adult model. The debate asks which has the greater influence.

..... [4]

(b) Explain how **one** result from the study by Schachter and Singer (two factors in emotion) supports the nature side of the nature–nurture debate and how **one** result supports the nurture side of the nature–nurture debate.

Result that supports the nature side of the debate: *Participants injected with epinephrine (adrenaline) showed a rise in pulse rate, whereas participants in the placebo (saline) groups showed a slight fall in pulse rate.*

Explain how: *Epinephrine is a hormone which produces the same physiological arousal (faster heart rate, trembling) in everyone, whatever condition they were in or what they were told. This is an innate, hard-wired biological response, so it supports the nature side of the debate.*

Result that supports the nurture side of the debate: *In the euphoria condition the epinephrine misinformed group had the highest activity index (22.56), followed by the ignorant group (18.28), with the informed group lowest (12.72).*

Explain how: *Groups with no appropriate explanation for their arousal used the environment, the stooge's euphoric behaviour, to label their emotion, so their emotion was shaped by external situational cues rather than biology alone. This supports the nurture side.* [8]

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9 Evaluate the study by Laney et al. (false memory) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about independent measures.

One strength of Laney et al. is that it collected quantitative data. Participants rated items on scales in the Food History Inventory, the Restaurant Questionnaire and the Food Preferences Questionnaire, e.g. how confident they were that they loved asparagus the first time they tried it, and how much they would want to order dishes containing it. This numerical data is objective and easy to compare, so it clearly showed that the Love group's belief in loving asparagus, and their desire to eat it, increased more than the control group's.

A second strength is the high level of standardisation and control, which increases reliability and internal validity. All participants completed the same questionnaires in the same order and received a false profile with the same general items (e.g. disliking spinach), and the only difference was the critical asparagus item in the Love group. Filler items and questions about the photographs disguised the aim. So the procedure could be replicated, and differences can be attributed to the false suggestion.

However, a weakness is the use of an independent measures design. Different participants were in the Love group and the control group, so participant variables, such as how much each person already liked asparagus or how suggestible they were, could explain the difference rather than the false feedback. This lowers validity, although it did avoid order effects and made it harder for participants to guess the aim than if they had done both conditions.

A second weakness is low ecological validity. The participants were university students who only reported their intentions on questionnaires, e.g. how much they would pay for asparagus, rather than actually eating it, so we cannot be sure the false memory would change real eating behaviour. The study also raises the ethical issue of deception, since participants were given false information about their childhood, although they were debriefed.

Overall, the quantitative data and controlled procedure make Laney et al.'s findings reliable, but the independent measures design and artificial questionnaire measures mean

the effect of false memories on real-life eating should be generalised with caution......

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