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Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

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PSYCHOLOGY **9990/21**

Paper 2 Research Methods **October/November 2024**

1 hour 30 minutes

You must answer on the question paper.

You will need: Ruler

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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Section A

Answer **all** questions.

1 Explain what is meant by a 'matched pairs design', including any example.

Participants are matched in pairs on key characteristics that could affect the DV (e.g. age or IQ), then one of each pair is placed in each condition. For example, in Bandura et al. children with the same rated level of aggression were placed in different model conditions. [2]

2 A longitudinal experiment is testing the hypothesis 'Elephants will learn better as they grow older'.

Identify the type of hypothesis in this experiment. Justify your answer.

It is a directional (one-tailed) hypothesis, because it predicts the direction of the change: the elephants' learning will get better, not worse, as they grow older, rather than just saying that their learning will differ with age. [2]

3 For the study by Baron-Cohen et al., a revised version of the 'eyes test' was developed. However, some problems with ecological validity remained.

(a) Define what is meant by the term 'ecological validity'.

Whether the findings of a study can be generalised to real-life, everyday situations outside the research setting. [1]

(b) **(i)** Outline **one** problem with the ecological validity of the revised eyes test.

The test only shows still photographs of the eyes, but in everyday life we can see the whole face and body moving when judging what someone feels. [1]

(ii) Explain **one** way in which the problem you identified in part **(b)(i)** could be solved.

Use videos of the whole face and body moving, so participants judge emotions from the same cues as in real life. [1]

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4 The study by Hassett et al. (monkey toy preferences) was an experiment.

(a) Describe what is meant by an 'experiment'.

An experiment is a research method in which the researcher manipulates an independent variable (IV) and measures its effect on a dependent variable (DV), while controlling other variables, so that cause and effect can be investigated.

..... [2]

(b) State **one** independent variable from this study.

The type of toy: plush toys or wheeled toys.

..... [1]

(c) Describe **two** strengths of experiments as a research method.

1 *Extraneous variables are controlled, so only the IV can be affecting the DV. This means that any change in the DV must be caused by the IV, so cause and effect can be established and the results are more valid.*

.....

2 *The procedure and the measurement of the DV are standardised and operationalised, so every participant has the same experience. This makes the experiment easy to replicate, so its reliability can be checked.*

.....

[4]

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5 Describe inter-rater reliability and inter-observer reliability, using any example(s).

Inter-rater reliability is a measure of whether different researchers score or interpret the same data consistently, e.g. responses to a test, questionnaire or interview. For example, in Bandura et al. the children's existing aggression was rated by the experimenter and a nursery teacher who knew the children, and their ratings were compared to check they were similar. Inter-observer reliability is a measure of whether different observers produce the same records when they watch the same behaviours, e.g. using behavioural categories in a structured observation. For example, in Piliavin et al. two observers in the carriage recorded the helping behaviour and comments, so their records could be compared, and in Hassett et al. all observers used the same operational definitions of the play behaviours. For both, the two researchers' scores for the same data are correlated, and a high positive correlation shows the measure is reliable.

..... [6]

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6 Dr Eynon is a university lecturer studying personality. She tested the personality of some of her students and divided them into two groups, 'personality R' and 'personality S'. Dr Eynon then showed them photographs of pleasant scenes, such as a beach. Half of the scenes contained people and half did not contain people. They scored each photograph to show how much they liked it.

(a) (i) Suggest **one** pleasant scene that Dr Eynon could use for one of her photographs, other than a beach.

A forest with tall green trees on a sunny day.

..... [1]

(ii) Dr Eynon needs to control many features about the scenes to ensure that they are similar, in addition to manipulating whether they contain people or not.

Suggest **two** features that Dr Eynon should control about the scenes.

1 *How colourful the scene is (the amount of bright colour).*

.....

2 *The weather in the scene, e.g. all sunny with a blue sky.*

.....

[2]

(iii) Explain why **one** of the features you have suggested in part **(a)(ii)** would be important in Dr Eynon's study.

Feature 1 or 2: .....*1*.....

People may prefer colourful photos as they are more interesting. If scenes with people were more colourful, they could be liked more for the colour, not the people, so colour would confound the results. [2]

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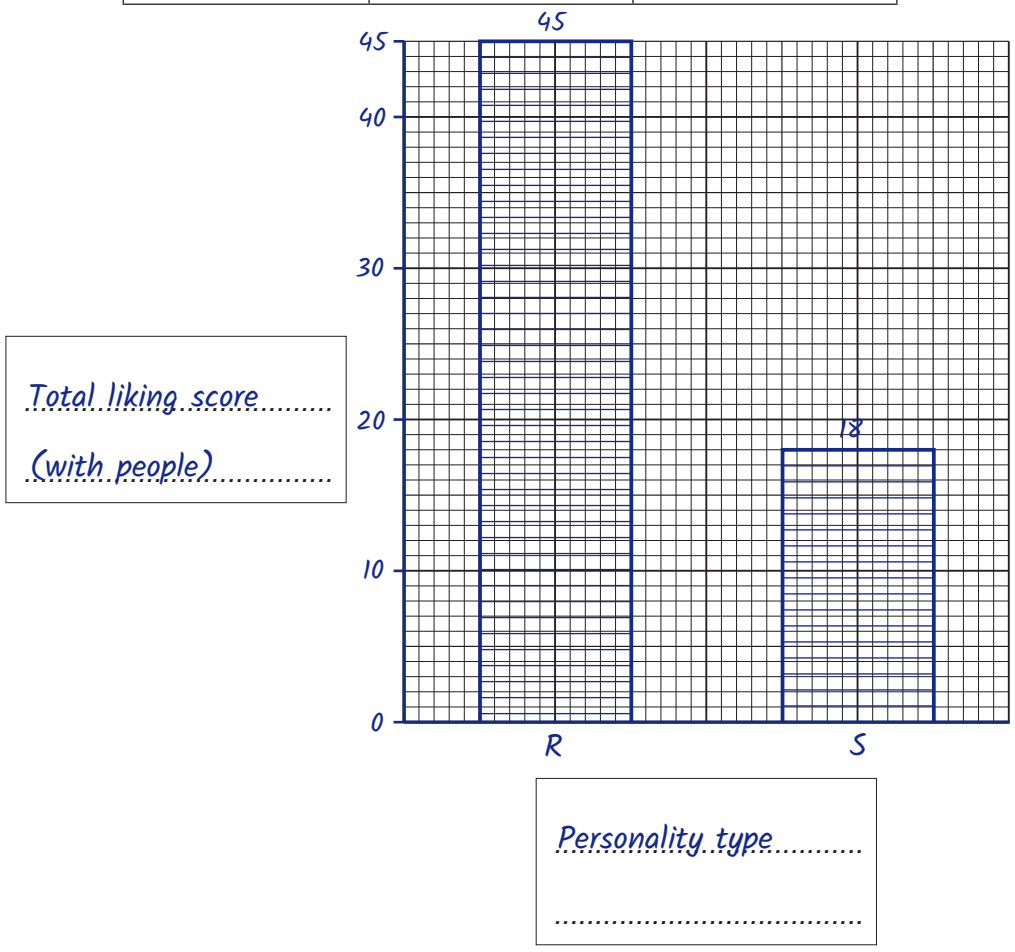
(b) Participants were shown the photographs in a random order. Dr Eynon calculated a total liking score for each of the two types of scene.

(i) Table 6.1 shows the total scores for the two types of scene, for each group of participants.

Draw a graph, showing **only** the results for 'photographs with people' from Table 6.1. You **must** label the axes.

Table 6.1

	Total score for photographs:	
	with people	**with no people**
Personality R	45	15
Personality S	18	25



[3]

(ii) Describe the conclusion that can be made from the data in Table 6.1.

Personality affects the type of scene people like: personality R participants liked scenes with people (45) more than scenes without people (15), whereas personality S participants liked scenes without people (25) more than scenes with people (18). [2]

7 Mr Grainger trains each of his farm animals to enter a stable. He lets the animal approach the stable, then rewards it with food. Each time the animal gets closer to the stable than before, he rewards it with food. When the animal enters the stable, he rewards it again. He repeats this each day until the animal enters the stable without rewards.

(a) (i) Suggest **one** way that Mr Grainger can measure the success of this training.

Count the number of food rewards he gives each animal before it enters the stable without any rewards, adding the rewards together across all the days of training. Fewer rewards means more successful training.

..... [2]

(ii) For the measure of success you suggested in part **(a)(i)**:

Identify the type of data produced by this measure of success. Justify your answer.

Quantitative data, because the measure produces a numerical score (the total number of rewards) for each animal rather than a description.

.....

..... [2]

(iii) For the measure of success you suggested in part **(a)(i)**:

Explain **one** weakness of the type of data produced by this measure of success.

Numbers do not give in-depth information about the training. For example, from the number of rewards alone he would not know how long (how many days) each animal took to learn, or why one animal needed more rewards than another.

..... [2]

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(b) On some days the training sessions are more successful than on other days. This difference may be caused by situational variables.

(i) Suggest **two** situational variables that could have affected the success of training.

1 *The weather, e.g. whether it was raining or cold during the session.*

2 *Distractions, e.g. loud noises or lots of people near the stable.*

..... [2]

(ii) For **one** of the situational variables you suggested in part **(b)(i)**:

Explain why this situational variable may have caused differences in the success of training of the animals.

Variable number 1 or 2: .....*1*.....

If it was cold or raining, the animals would want to go inside the stable for shelter anyway, so they would move into it more quickly and need fewer rewards, making training seem more successful on those days than on warm, dry days.

..... [2]

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8 Chen is conducting a study that is similar to the study by Piliavin et al. (subway Samaritans). She has asked a young person and an old person to act as 'victims'. Each victim will appear to have difficulty climbing the step on to a bus. Chen will count how many old passengers and how many young passengers help each victim to climb the step.

(a) Suggest **two** ways in which Chen's study is similar to the study by Piliavin et al.

1 *Both investigate helping behaviour towards a stooge "victim" who appears to need help.*

2 *In both, the participants are passengers on public transport who do not know they are in a study.*

[2]

(b) Suggest **two** ways in which Chen's study is different from the study by Piliavin et al.

1 *Chen's study is on a bus, whereas Piliavin et al.'s study was on a subway train.*

2 *Chen compares the age of the victim (young or old), whereas Piliavin et al. compared victims who were drunk or ill (with a cane) and black or white.*

[2]

(c) Explain the sampling technique Chen is using.

Opportunity sampling: the participants are whoever happens to be getting on the bus when the victim struggles with the step. They are used because they are there anyway and available, not chosen by Chen.

[2]

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Section B

Answer **all** questions.

9 Tanya is investigating prosocial behaviour (this is positive, friendly behaviour between individuals). She is studying prosocial behaviours in children at her local school and will give a questionnaire to every teacher in the school.

(a) Describe how Tanya could conduct a study using a questionnaire for teachers to investigate a variety of prosocial behaviours in children.

Do **not** describe sample/sampling technique or ethical issues/guidelines in your answer.

Tanya would use a self-report questionnaire, completed by each teacher about the children they teach, asking about a variety of prosocial behaviours such as sharing, helping, comforting and playing games together.

Technique: it would be a paper and pencil questionnaire, printed and put in each teacher's pigeonhole with the same standardised written instructions, to be completed by hand within one week and returned to a box in the staff room.

Format: there would be both closed and open questions. Closed questions would use a rating scale from 0 (never) to 4 (very often), e.g. "How often do children in your class share toys or equipment with others?", "How often do children help a classmate who is struggling with work?", "How often do children comfort a child who is upset?" and "How often do children play games together and take turns?". Filler questions, e.g. "How often do children arrive late?", would be included so the teachers do not guess the aim and give socially desirable answers. Open questions would ask, e.g., "Describe an example of a child being kind to another child this week."

Scoring and analysis: the closed ratings give quantitative data. The mean and median rating for each prosocial behaviour would be calculated across all the teachers, so the behaviours can be compared, e.g. whether sharing is more common than comforting, and the range or standard deviation would show how much the teachers agree. The means would be shown in a bar chart with one bar per behaviour, and ratings could be compared between younger and older classes. The answers to the open questions give qualitative data, which would be analysed for themes, e.g. "helping with

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schoolwork" or "including others in play", counting how often each theme appears.

[10]

(b) (i) Describe **one** practical/methodological strength of the procedure you have described in your answer to part **(a)**.

Do **not** refer to sampling or ethics in your answer.

The closed rating-scale questions give quantitative data, so the mean rating for each prosocial behaviour can be calculated and compared objectively. This makes the results easy to analyse, and the questionnaire is easy to replicate to check its reliability. [2]

(ii) Describe one practical/methodological weakness of the procedure you have described in your answer to part **(a)**.

Do **not** refer to sampling or ethics in your answer.

Teachers may not notice all the prosocial behaviour (e.g. at break time) or may remember it inaccurately, and may give socially desirable answers to make their class seem kind, so the ratings may not be valid measures of the children's behaviour. [2]

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Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

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PSYCHOLOGY **9990/22**

Paper 2 Research Methods **October/November 2024**

1 hour 30 minutes

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No additional materials are needed.

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Section A

Answer **all** questions.

1 In the study by Milgram the variable of 'obedience' was measured.

Describe the measure of obedience used.

Obedience was measured by the maximum voltage on the shock generator (from 15 V to 450 V) that each participant went up to when told to shock the learner. A participant who continued all the way to 450 V was classed as fully obedient.

..... [2]

2 **(a)** Explain **one** similarity and **one** difference between a positive correlation and a negative correlation.

Similarity *Both show a relationship between two measured co-variables, and neither can show cause and effect.*

.....

Difference *In a positive correlation both variables increase together, but in a negative correlation one variable increases as the other decreases.*

.....

[2]

(b) Describe **one** example of a correlation from the study by Hassett et al. (monkey toy preferences).

There was a positive correlation between the social rank of the female monkeys and the total frequency of their interactions with the toys (both plush and wheeled). For the males there was no correlation between rank and interaction with the toys.

..... [2]

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3 In the study by Bandura et al. (aggression), details are not given about consent from the parents or the children.

(a) Explain what is meant by 'informed consent'.

Giving participants enough information about the aims and procedure of the study so that they understand what will happen, and then they agree, deciding for themselves, whether or not to take part.

..... [2]

(b) Suggest how informed consent could have been obtained from the children in this study in a way that they would have understood.

Tell each child in simple words: "You are going to watch a grown-up play with some toys, then you can play with lots of toys in another room. Is that okay? You can stop whenever you want." Only children who say yes would take part.

..... [2]

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4 Daniel used a sample of 20 participants in a laboratory experiment using a repeated measures design. He had two conditions:

- listening to loud music
- listening to quiet music.

(a) Outline what is meant by a 'repeated measures design'. Include an example from Daniel's study.

The same participants take part in every condition of the IV. In Daniel's study, all 20 participants do the task both while listening to loud music and while listening to quiet music.

..... [2]

(b) **(i)** Outline what is meant by 'counterbalancing'. Include an example from Daniel's study.

Different participants do the conditions in different orders, to balance out order effects. In Daniel's study, 10 participants do loud music then quiet music, and the other 10 do quiet music then loud music.

..... [2]

(ii) Explain **one** strength of a repeated measures design, other than the use of counterbalancing.

Participant variables are controlled, as each person is compared with themselves. For example, some participants may enjoy loud music more or be better at the task, but this affects both conditions equally, so differences are due to the IV.

..... [2]

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5 Describe the techniques of 'paper and pencil' questionnaires and 'online' questionnaires, using any example(s).

A paper and pencil questionnaire has written questions printed on a physical sheet, and the participant fills in their answers by hand with a pen or pencil, then gives it back to the researcher, e.g. in person or by post. For example, in Hölzel et al. participants completed the Five Facet Mindfulness Questionnaire (FFMQ) as a paper and pencil questionnaire. An online questionnaire is accessed using an internet connection on a computer, tablet or mobile phone, e.g. through a website, an email link or social media, and the participant types or clicks their answers and submits them electronically. For example, Baron-Cohen et al. had participants complete the AQ questionnaire online, and in Perry et al. participants completed the IRI empathy questionnaire online. Both types can use closed questions, giving quantitative data, and open questions, giving qualitative data.

[6]

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6 Mohsin is investigating whether colour affects supermarket shoppers' food choices. He is comparing healthy and unhealthy snacks that are displayed in blue or green packaging. He spends two weeks conducting a field experiment.

In Week 1 he displays the following combination:
- healthy snacks in blue packets
- unhealthy snacks in blue packets.

In Week 2 he displays the following combination:
- healthy snacks in green packets
- unhealthy snacks in green packets.

Mohsin counts the number of each packet sold.

(a) Identify the **two** independent variables (IVs) in Mohsin's study.

1 *The colour of the packaging (blue or green).*

2 *The type of snack (healthy or unhealthy).*

[2]

(b) Mohsin will continue his experiment for two more weeks. This is to be certain that only the independent variables are affecting the dependent variable.

(i) State the **two** other combinations that Mohsin should display in the additional weeks.

In one week he should display the following combination:

- *healthy snacks in green packets*
- *healthy snacks in blue packets*

In the other week he should display the following combination:

- *unhealthy snacks in green packets*
- *unhealthy snacks in blue packets*

[2]

(ii) Explain why the two combinations that you stated in part **(b)(i)** would be useful.

In Weeks 1 and 2 the colours were only compared between weeks, so differences could be due to the week. Showing both colours of the same type of food together controls for food type, so it shows whether it is really the colour that affects shoppers' choices. [2]

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(c) Define the term 'population'.

The whole group of people who share a characteristic, from which a sample is chosen.

..... [1]

(d) Outline the population being studied by Mohsin.

Shoppers who visit this supermarket (mostly people who live near it) and who buy snacks there, and who are not colour-blind, so they can see the difference between blue and green.

..... [2]

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7 Jenny has noticed that some of her school friends doodle and some do not doodle. This may be because some of her friends are more creative than others. She plans to explore this difference using a questionnaire.

(a) **(i)** Write **one** closed question that Jenny could use to investigate the creativity of her friends.

How creative are you, on a scale from 0 (not at all creative) to 10 (very creative)? [1]

(ii) Write **one** open question that Jenny could use to investigate the creativity of her friends.

Describe the creative things you do in your free time and why you enjoy them. [1]

(b) Jenny's friends study different subjects at school.

Suggest why differences between the subjects they study could also explain the differences in doodling.

Some subjects may be more boring, e.g. lessons where students listen to the teacher for a long time, and boredom may lead them to doodle more to stay focused. Also, friends who study art or design are used to drawing in lessons and are good at it, so they may doodle more out of habit, while science students may doodle less. So the doodling may be due to the subject, not creativity. [3]

(c) Jenny wants to conduct an overt observation of her friends doodling. She wants to do this the day after they complete the questionnaire.

Suggest why this may **not** produce valid results.

Demand characteristics: having just done a questionnaire about creativity and knowing they are being watched, the friends may guess Jenny's aim and change their behaviour, e.g. doodle more to seem creative, so it would not measure their normal doodling. [2]

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8 Parul has conducted a study about happiness. She has counted the number of her colleagues who are smiling when they arrive at work on Monday and on Friday. Fig. 8.1 shows a graph of her results.

(a) Write axis headings for the *x*-axis and the *y*-axis on Fig. 8.1.

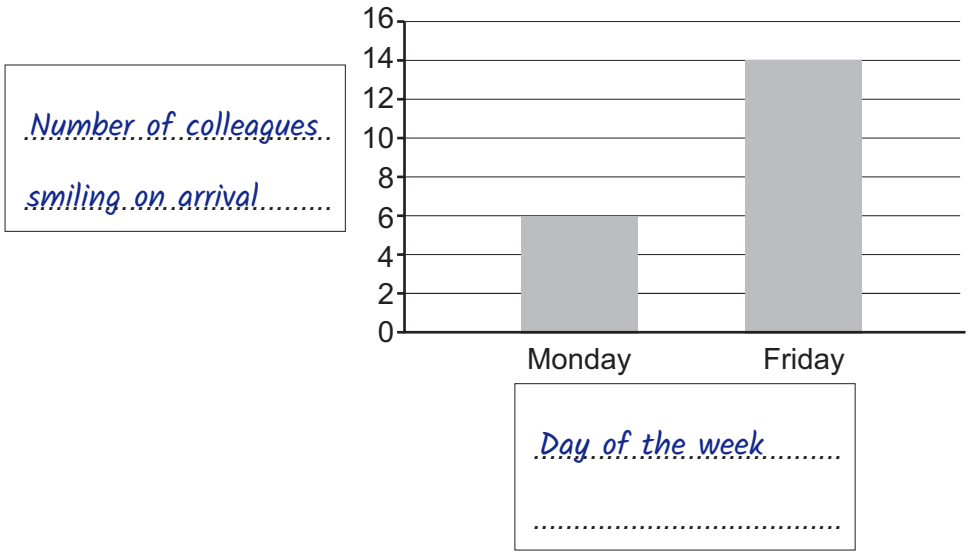


Fig. 8.1

[2]

(b) Parul's friend says that she should have conducted the study for more than one week.

Explain **one** reason why it would have been better to have conducted the study for more than one week.

It would reduce the effect of confounding variables, so the results are more valid. In one week, people's mood may be affected by something other than the day of the week, e.g. being unwell or a stressful event at work, which would not happen every week. [2]

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(c) Parul counted the number of colleagues smiling but now thinks this may not have been the best way to measure happiness.

(i) Suggest **one** other way that Parul could have measured happiness.

A questionnaire with a closed question: "How happy do you feel right now, on a scale of 0 (not at all happy) to 5 (very happy)?", given to colleagues when they arrive at work on Monday and on Friday.

..... [2]

(ii) For the measure of happiness you suggested in part **(c)(i)**:

Explain **one** advantage of this measure of happiness compared with counting the number of colleagues smiling.

Each person gives a rating of how happy they are, rather than just smiling or not, so there is more detail about how happy they actually feel. Also they judge their own feelings, so Parul does not have to assume that smiling means happiness.

..... [2]

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Section B

Answer **all** questions.

9 Lixin is investigating the social behaviour of adults. He plans to observe adults in a town centre during their lunch break.

(a) Describe how Lixin could conduct an observational study using a structured observation to investigate the social behaviour of adults in a town centre during their lunch break.

Do **not** describe sample/sampling technique or ethical issues/guidelines in your answer.

Lixin would conduct a naturalistic observation in a busy town-centre square with benches and cafés, between 12:00 and 14:00 on weekdays, so adults are observed in their normal lunch-break setting and nothing is manipulated.

He would be a non-participant observer: he would sit on a bench at the edge of the square with a clear view and would not interact with the people he watches, so he can concentrate on recording. The observation would be covert: he would look like an ordinary person eating lunch, with his checklist hidden inside a magazine, so the adults do not know they are being watched and behave naturally.

It would be a structured observation using a checklist of behavioural categories with operational definitions:

- talking: two or more adults speaking face to face for at least 5 seconds

- eating together: eating at the same table or bench as at least one other adult

- physical contact: greeting with a handshake, hug or pat on the back

- smiling or laughing with another adult

- phone use alone: looking at or typing on a phone without talking to anyone.

Lixin would use time sampling: he would focus on one adult or group at a time and tick which categories occur in each 30-second interval for 5 minutes. A second observer, trained in the same categories, would watch the same people at the same time, and their tallies would be correlated to check inter-observer reliability. The observation would be repeated on 10 weekdays. The frequency of each social behaviour would be totalled and shown in a bar chart, and the mode would show the most common social behaviour in the lunch break.

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..... [10]

(b) (i) Explain how **one** feature of the procedure you described in part **(a)** helps to make the study valid.

Do **not** refer to sampling or ethics in your answer.

Being covert means the adults do not know they are being watched, so they will not show demand characteristics and will behave naturally, which makes the record of their social behaviour more valid.

..... [2]

(ii) Explain how **one** feature of the procedure you described in part **(a)** could be a problem for the validity of the study.

Do **not** refer to sampling or ethics in your answer.

In a busy town centre Lixin may miss behaviours, e.g. a quick handshake while he is ticking another category, or may not hear whether people are talking, so the tallies may not accurately represent their social behaviour.

..... [2]

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Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

CENTRE NUMBER | CANDIDATE NUMBER

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PSYCHOLOGY **9990/23**

Paper 2 Research Methods **October/November 2024**

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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[Turn over

Section A

Answer **all** questions.

1 Outline what is meant by the term 'random sampling'.

Every member of the target population has an equal chance of being selected, e.g. by drawing names from a hat. [1]

2 In a laboratory experiment, the happiness of participants is being compared in two situations:
- with other people
- without other people.

Identify the dependent variable (DV) in this study. Justify your answer.

The DV is happiness, because it is the variable being measured, to see whether it changes when participants are with other people or without other people (the IV).

[2]

3 In the study by Fagen et al. (elephant learning), most of the data collected was quantitative. Some qualitative data was collected, including an initial observation that one elephant preferred to drink saline rather than water.

(a) Define what is meant by 'qualitative data'.

Descriptive, in-depth data that gives detail about what participants think, feel or do.

[1]

(b) Define what is meant by 'quantitative data'. Include an example from the study by Fagen et al.

Numerical data, such as a count, a time or a score. For example, Fagen et al. recorded the percentage of trials on which each elephant correctly performed the trunk wash behaviour when given the cue.

[2]

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4 Studies in social psychology can use stooges or imagined people to cause participants to respond.

(a) In the study by Piliavin et al. (subway Samaritans), stooges were used as 'victims'.

Suggest **one** way to improve the ecological validity of this study in relation to the victims.

In Piliavin et al. all the victims were men aged 26 to 35, so the study could also use female victims and older victims, so that helping is measured towards the range of people who really collapse on trains in everyday life.

..... [2]

(b) In the study by Perry et al. (personal space) Experiment 1, responses to imagined people were measured.

(i) Suggest **one** reason why measuring responses to imagined people is more ethical than measuring responses to stooges.

It is less distressing; participants who only imagine someone approaching can stop imagining if they feel uncomfortable, whereas a real stooge invading their personal space is harder to escape. Less deception is also needed, as they are told what to imagine. ..... [2]

(ii) Suggest **one** reason why measuring responses to stooges is more practical than measuring responses to imagined people.

The stooge's behaviour can be controlled, e.g. how close they come and how fast, so all participants experience the same situation, whereas imagined people may differ from person to person, so stooges give more standardised data.

..... [2]

5 Pozzulo et al. (line-ups) calculated the mean number of correct identifications of human faces per child.

Explain how the researchers calculated this mean in this study.

They added up all the correct identifications of human faces made in the human target line-ups, then divided this total by the number of possible identifications (the number of human target line-ups shown), to give the mean number correct.

..... [2]

6 Describe laboratory experiments and field experiments, using any example(s).

A laboratory experiment has an IV that the researcher manipulates and a DV that is measured, and it takes place in an artificial environment, so many extraneous variables can be controlled. For example, in Perry et al, the IV was the type of antagonist and the DV was the participants' personal space preference. Dement and Kleitman controlled factors that affect sleep by asking participants not to drink alcohol or caffeine on the day of the study. A field experiment also has a manipulated IV and a measured DV, but it takes place in the normal environment for the behaviour being studied, so fewer variables can be controlled, although behaviour is more natural. For example, Piliavin et al. manipulated whether the victim appeared drunk or ill (with a cane) and measured helping on a real New York subway train, and controlled the stooge's clothing and actions.

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7 Daiyu is conducting a case study about a seven-year-old child with autism. She is interested in the child's interactions with their family and other children.

(a) Suggest **two** techniques, other than interviews, that Daiyu could use in her case study to collect data about the child. Justify your answers.

1 *Observation of the child at home and at school, because it gives data about the child's actual interactions with family and other children, rather than relying on memory or on what others report.*

2 *A questionnaire for the child with simple questions and pictures, because children with autism may find face-to-face communication difficult and may be better at answering in writing.*

[4]

(b) Suggest **two** pieces of information about the child's interactions that would be useful for Daiyu to collect in her case study. Justify your answers.

1 *Whether the child makes eye contact during interactions, because avoiding eye contact is a characteristic of autism, so it shows how autism affects their social interactions.*

2 *How often the child interacts with family members compared with other children, because a child with autism may interact more with their family as they are more familiar.*

[4]

(c) Outline **one** practical reason why obtaining information from the child could be difficult.

Autism affects social communication, so the child may not communicate well and it may be hard to ask them questions. [1]

8 Hazel is conducting a study in a park to compare the behaviours of adults who have children with them and adults who do not have children with them. She plans to record three behaviours of the adults: whistling, singing and shouting, rather than all actions that people perform.

(a) Explain the type of observation that Hazel plans to use because she is only recording whistling, singing and shouting.

A structured observation, because Hazel is only recording a fixed set of behavioural categories (whistling, singing and shouting) rather than everything that people do.

..... [2]

(b) Outline how Hazel could operationalise **one** of the three behaviours she plans to record.

Singing: producing words to a tune with the voice for at least 3 seconds.

..... [1]

(c) Hazel had planned to be an overt observer, but a colleague has said she should be a covert observer.

(i) Suggest **one** reason why it would be more ethical to be an overt observer than a covert observer in this study.

As an overt observer, Hazel can ask for consent and adults can refuse or withdraw. If covert, adults may object to being secretly watched while out walking, and may worry that their children are being watched, invading their privacy. ..... [2]

(ii) Suggest **one** reason why it would be more practical to be a covert observer than an overt observer in this study.

If covert, the adults would not know they are being watched, so there would be fewer demand characteristics; they would not whistle, sing or shout more or less than usual, and Hazel could get close enough to hear them clearly.

..... [2]

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9 Hudson is planning to correlate how much a person wants to sleep (sleepiness) and the amount of time since their last meal. He will ask people to estimate the amount of time since their last meal, but he needs to find a way to measure sleepiness.

(a) (i) Suggest **one** way that Hudson could measure sleepiness. Do **not** use an interview in your answer.

A questionnaire: participants rate how sleepy they feel right now on a scale from 0 (not at all sleepy) to 5 (very sleepy), and the number they choose is their sleepiness score.

..... [2]

(ii) Explain **one** strength of the measure of sleepiness you suggested in part **(a)(i)**.

Participants can show how much they feel sleepy, not just sleepy or not sleepy, so the scale measures the extent of sleepiness and gives a number that can be correlated with the time since their last meal.

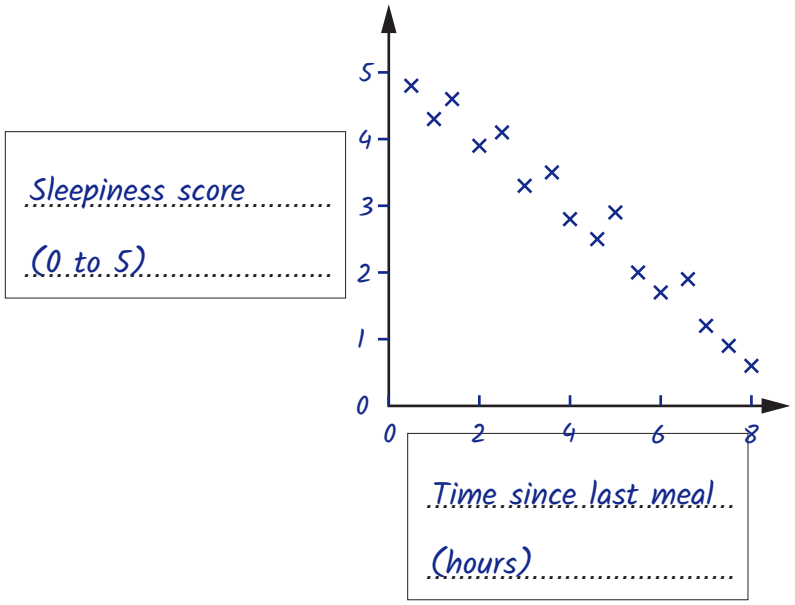
..... [2]

(iii) Explain **one** weakness of the measure of sleepiness you suggested in part **(a)(i)**.

People may not want to admit how sleepy they feel, or may not be aware of it, so their answers may be affected by social desirability and the score may not be a valid measure of their sleepiness.

..... [2]

(b) Sketch a scatter graph, using the axes below, to show what the pattern of results would look like if Hudson found a negative correlation. You **must** label the axes.



[4]

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Section B

Answer **all** questions.

10 Zeta notices that people respond in different ways to advertisements for products. People may find the advertisements funny, annoying and/or informative. She is interested in advertisements for foods, vehicles and mobile phones.

(a) Describe how Zeta could conduct a study using an interview to investigate the different ways that people respond to advertisements for different products.

Do **not** describe sample/sampling technique or ethical issues/guidelines in your answer.

Zeta would conduct semi-structured face-to-face interviews in a quiet room. Each participant would first watch the same six short TV advertisements: two for foods (e.g. a chocolate bar and a pizza), two for vehicles (e.g. a family car and a motorbike) and two for mobile phones, in a different random order for each person. After each advert Zeta would ask the same prepared questions in the same order, but as the interview is semi-structured she could add follow-up questions, e.g. "Why did you find it annoying?", to explore answers in more depth.

Closed questions would use rating scales to give quantitative data, e.g. "How funny did you find the car advert, from 1 (not at all funny) to 5 (very funny)?", "How annoying did you find the mobile phone advert, from 1 to 5?" and "How informative was the pizza advert about the product, from 1 to 5?", plus a yes/no question, "Would this advert make you want to buy the product?". Open questions would give qualitative data, e.g. "What did you like or dislike about the motorbike advert?" and "Describe how the chocolate advert made you feel." Filler questions, e.g. about the music used, would stop participants guessing the aim. The interviews would be audio-recorded and transcribed so answers are recorded accurately.

Analysis: for each product type the funny, annoying and informative ratings would be added up and the mean and median calculated, e.g. to see whether vehicle adverts are rated as more informative than food adverts, with the standard deviation showing how much responses vary, and shown in a bar chart. The open answers would be analysed for themes, e.g. "too repetitive" or "useful price information", by two researchers independently, counting how often each theme occurs for each product

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type.

[10]

(b) **(i)** Explain how **one** part of the procedure you described in part **(a)** helps to make the study reliable.

Do **not** refer to sampling or ethics in your answer.

Every participant is asked the same standardised closed rating-scale questions in the same order after watching the same adverts, so the procedure can be replicated exactly and the ratings compared on a test-retest to check reliability.

[2]

(ii) Explain how **one** part of the procedure you described in part **(a)** could be a problem for reliability of the study.

Do **not** refer to sampling or ethics in your answer.

The follow-up questions differ between participants, so each person has a slightly different interview, and coding the open answers into themes may be inconsistent between the researchers, so the study is hard to replicate and reliability is lower. [2]

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