Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/41**

Paper 4 Specialist Options: Application and Research Methods **October/November 2024**

1 hour 30 minutes

T8161582

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **five** questions in total:
  - Answer questions from **two** options.
    - Section A: answer **four** questions.
    - Section B: answer **one** question.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.

INFORMATION

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

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Section A

Answer questions from **two** options in this section.

Clinical Psychology

Answer **all** questions if you have studied this option.

1 From the key study by Oruč et al. (1997) on mood (affective) disorders:

(a) **(i)** Outline what is meant by a clinical interview. [2]

(ii) Outline **one** reason why the participants were interviewed. [2]

(b) The interviews were reviewed by a second psychiatrist.

Suggest **one** effect there could have been on the results if the interviews had **not** been reviewed by a second psychiatrist. [2]

(c) Explain **one** strength and **one** weakness of a clinical interview as used in this study. [4]

2 **(a)** Explain what is meant by the term 'pyromania'. [2]

(b) Suggest **one** way in which pyromania could be measured, other than by self-report. [2]

(c) Explain **two** strengths of using self-report to measure pyromania. [4]

Consumer Psychology

Answer **all** questions if you have studied this option.

3 From the key study by Hall et al. (2010) on choice blindness for food items:

(a) **(i)** Outline the sample of participants used in this study. [2]

(ii) Outline the sampling technique that was used to recruit the participants. [2]

(b) Suggest **one** sampling technique that could have been used to recruit participants for this study, other than the technique used by Hall et al. [2]

(c) Explain **one** strength and **one** weakness of the sampling technique you suggested in part **(b)**. [4]

4 **(a)** Explain what is meant by a 'customer-focused' sales technique. [2]

(b) Suggest **one** effect a customer-focused sales technique could have on the buyer–seller relationship when buying a new car. [2]

(c) Explain **one** strength and **one** weakness of a 'competitor-focused' sales technique. [4]

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Health Psychology

Answer **all** questions if you have studied this option.

5 From the key study by Savage and Armstrong (1990) on the effect of practitioner style on patient satisfaction:

(a) **(i)** Outline how participants were recruited for the study. [2]

(ii) Outline how participants were randomly allocated to the conditions of the study. [2]

(b) Suggest **one** problem if participants had **not** been randomly allocated to the conditions of the study. [2]

(c) Explain **two** strengths of the use of random allocation in this study. [4]

6 **(a)** Outline the psychological treatment of 'attention diversion' to manage and control pain. [2]

(b) Suggest **one** alternative treatment that could be used for managing and controlling shoulder pain, other than a biological or psychological treatment. [2]

(c) Explain **one** strength and **one** weakness of using attention diversion to manage pain. [4]

Organisational Psychology

Answer **all** questions if you have studied this option.

7 From the key study by Swat (1997) on monitoring accidents and risk events:

(a) **(i)** Explain what is meant by the term 'accident frequency' as used in this study. [2]

(ii) State which **two** industrial plants had the highest accident frequency (rate). [2]

(b) Suggest **one** way in which accidents in industrial plants can be reduced. [2]

(c) Explain **one** strength and **one** weakness of measuring accident frequency. [4]

8 **(a)** Outline what Maslow meant by 'physiological needs' and 'social needs'. [2]

(b) Suggest **one** way in which achievement of social needs could be measured, other than by interview. [2]

(c) Explain **one** strength and **one** weakness of using a telephone interview to gather data on need theories of motivation. [4]

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Section B

Answer **one** question from this section.

Clinical Psychology

9 **(a)** Plan an experiment to investigate which anti-depressant drug is more effective for treating depression.

Your plan must include details about:
- experimental design
- type of experiment. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your experiment. [4]

(c) **(i)** Explain **one** reason for your choice of experimental design. [2]

(ii) Explain **one** weakness of your choice of experimental design. [2]

(iii) Explain **one** reason for your choice of type of experiment. [2]

Consumer Psychology

10 **(a)** Plan a study using a questionnaire with closed questions to investigate the effectiveness of multiple unit pricing on purchases from a supermarket.

Your plan must include details about:
- the questionnaire technique
- descriptive statistics. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for your choice of questionnaire technique. [2]

(ii) Explain **one** weakness of using closed questions in your study. [2]

(iii) Explain **one** reason for your choice of descriptive statistics. [2]

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Health Psychology

11 **(a)** Plan a study using a face-to-face interview to investigate patients' preference for the clothing their doctors wear.

Your plan must include details about:
- question scoring/interpretation
- interview format. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for your choice of question scoring/interpretation. [2]

(ii) Explain **one** weakness of using a face-to-face interview in your study. [2]

(iii) Explain **one** reason for your choice of interview format. [2]

Organisational Psychology

12 **(a)** Plan an experiment to investigate the effect of **one** physical work condition, other than temperature, on the productivity of workers.

Your plan must include details about:
- dependent variable
- ethical guidelines. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your experiment. [4]

(c) **(i)** Explain **one** reason for your choice of dependent variable. [2]

(ii) Explain **one** weakness with your choice of type of experiment. [2]

(iii) Explain **one** reason for your choice of an ethical guideline that you followed. [2]

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Surname	StemUp Model Solution
Answer booklet	Write the question number in the left-hand margin at the start of each answer.

Question number

Answers for paper 9990/41

Section A

Clinical Psychology

1(a)(i) A clinical interview is a face-to-face interview between a medical practitioner (such as a psychiatrist) and a patient, in a medical setting, involving verbal and non-verbal exchange. It is designed to diagnose symptoms and to prescribe or assess treatment.

1(a)(ii) The patients had already been assessed for their lifetime psychopathology, so they were interviewed to confirm this diagnosis (bipolar I disorder), using the SADS-L (Schedule for Affective Disorders and Schizophrenia, Lifetime Version).

1(b) The data may have been invalid, because if the first psychiatrist made an error in diagnosing bipolar type I disorder, or in checking the SADS-L results, there would be no second opinion to catch it. A person without bipolar I could then be included, so the genetic results would not be about bipolar I.

1(c) A strength is that the patient can explain and answer any question asked, for example about the history of their bipolar I disorder or which first-degree relatives have had a major affective disorder. The practitioner only has notes of previous history, so the interview confirms the person's individual circumstances and their suitability for the study.

Question number	
	A weakness is that the patient may not understand medical jargon, such as 'bipolar disorder type I' or 'transporter genes', or may describe their condition in vague terms. They may then be unable to explain clearly what the psychiatrist needs to know, so the information gathered may be inaccurate.
2(a)	Pyromania is an impulse control disorder in which there is a recurrent failure to control strong impulses to set fires, resulting in multiple acts of, or attempts at, setting fire to property or other objects. There is no apparent motive (such as money or revenge), and the person feels tension before and pleasure or relief during and after the fire setting.
2(b)	A covert, structured, non-participant observation of the person in their natural environment over a period of time. Behavioural categories (e.g. watching fires, showing fascination with fire-fighting equipment, attempting to set a fire) would be recorded to see how many diagnostic features of pyromania are shown.
2(c)	One strength is that self-report gives a measure of the extent of the problem. For example, a person who scores highly on a pyromania questionnaire, reporting frequent urges to set fires, has a severe problem, so an appropriate treatment for their pyromania can then be decided. A second strength is that self-report can reveal the person's internal experiences, which cannot be observed, such as the tension or arousal felt before setting a fire and the pleasure or relief felt afterwards. This helps us understand more about pyromania, such as its addictive nature.
	Consumer Psychology
3(a)(i)	180 supermarket customers (118 female and 62 male), aged between 16 and 80

Question number	
	years, who lived in or around Lund in Sweden.
3(a)(ii)	An opportunity sample: customers were approached as they passed a tasting stand in a supermarket, by researchers acting as independent consultants, and asked to take part in a taste test.
3(b)	A self-selecting (volunteer) sample. An advertisement could be placed in a local newspaper or on a notice in the supermarket inviting people to volunteer for a study on the quality of jam and tea.
3(c)	A strength is that because the participants have volunteered, they are more likely to be enthusiastic and less likely to withdraw, so they would be willing to complete all the jam and tea tastings and explain their choices. A weakness is that volunteers may be more interested in what the study is about, so they may be more susceptible to demand characteristics. For example, they may pay unusually close attention to the tastes, so they are more likely to detect the switched jam or tea than ordinary shoppers.
4(a)	A customer-focused technique views each customer's problems as unique. The salesperson acts as a consultant rather than a persuader, actively engaging the buyer and seeking information from them about their individual needs rather than telling them what they want.
4(b)	The buyer feels that the seller is attentive and cares about them, for example asking how they will use the new car (family size, budget, driving needs). This builds trust, so the buyer is more likely to be loyal, return for their next car and recommend the dealer to others.

Question number	
4(c)	A strength is that the product is very competitively priced, so the customer gets a good deal, e.g. the seller beats a rival's price on the same item. The salesperson also needs little product information and needs to know very little about the customer, so sales can be made quickly. A weakness is that it assumes every customer is the same and that a competitive deal is all that is needed to secure a sale. Unlike a customer-focused technique, the customer's individual needs are ignored, so they may buy something unsuitable and not return.
	Health Psychology
5(a)(i)	A random number generator was used to select four patients from each surgery of one doctor in an inner London general practice, over a four-month period.
5(a)(ii)	After the doctor had confirmed that a patient was suitable for the study, the doctor used cards to randomly allocate the patient to either the directing or the sharing consultation style.
5(b)	The results might not be valid, because the doctor might (consciously or not) choose which patients got the sharing style, e.g. giving it to friendlier patients, to show that a sharing style is better. Differences in satisfaction could then be due to personality rather than the style.
5(c)	One strength is that there is no participant bias. The patient does not choose which condition they are in, so they cannot bias the study; they are randomly put into the directing or sharing condition. A second strength is that there is no doctor bias. The doctor delivering the style cannot bias the study because he does not know whether a directing or sharing

Question number	
	card will appear next, so he cannot choose particular patients for a particular style.
6(a)	Attention diversion is a cognitive strategy in which the person focuses on a non-related stimulus to distract themselves from the discomfort. It can be passive, such as looking at a picture or watching television, or active, such as singing a song or doing mental arithmetic.
6(b)	Acupuncture: between five and twenty fine stainless steel needles are inserted along meridian lines (through which 'qi' is said to flow) around the shoulder and left in place for ten to twenty minutes to reduce the shoulder pain.
6(c)	A strength is that the person can use the technique wherever they are and whenever they are in pain, for example singing to themselves at home, so they are an active participant in managing their own pain without needing drugs or a practitioner. A weakness is that the person may struggle to concentrate on a non-related stimulus, especially when the pain is severe, so the distraction fails and the pain is not eased.
	Organisational Psychology
7(a)(i)	Accident frequency is the number of injury accidents (not minor incidents) that resulted in sick leave days off work, per 100 employees in a year.
7(a)(ii)	The foundry (5.9) and the meat processing plant (2.8).
7(b)	Use a token economy, as in Fox et al. (1987) at two open-cast mines. Employees earn stamps (exchangeable for rewards) for working without time lost to injury

Question number	
	and for behaviour that prevents accidents, and lose stamps for unsafe behaviour.
7(c)	A strength is that accident frequency rates are quantitative, so statistics can be compiled; for example, the number of accidents in different plants or industries can be compared directly, as Swat compared the foundry with the meat processing plant. A weakness is that accident frequency does not take account of severity. An accident where a worker misses one day counts the same as one where a worker misses months, so the true seriousness of the risk in a plant may be hidden.
8(a)	Physiological needs are basic survival needs such as food, drink and warmth. Social needs are the need for love, affection, relationships, friendship and family.
8(b)	A questionnaire with closed questions and tick boxes, e.g. 'Do you have close friends at work? Yes/No' and 'I feel accepted by my team' rated 1 to 5, to show how far the person has achieved social needs.
8(c)	A strength is that using a telephone means a potentially large and representative sample can be contacted cheaply, across different places, so the needs of a diverse sample of workers can be investigated. A weakness is that the participant may not tell the truth, exaggerating or underemphasising details, for example claiming their social needs are met to appear popular. This may lead the researcher to make inaccurate conclusions about which need stage the person is at.
	Section B
	Clinical Psychology

Question number	
9(a)	Aim: to investigate whether an SSRI (fluoxetine) or an MAOI (phenelzine) is more effective for treating depression. Hypothesis: there will be a difference in the reduction in BDI scores between patients given the SSRI and patients given the MAOI after 12 weeks. Null hypothesis: there will be no difference. Type of experiment: a field experiment (a randomised controlled trial) carried out in outpatient clinics, the patients' normal setting for treatment, so they continue their everyday lives. Sample: 60 adults aged 18 to 65 newly diagnosed with moderate depression by a psychiatrist, recruited by volunteer sampling through notices in the clinics. People taking other medication or with other disorders are excluded. Experimental design: independent measures. Participants are randomly allocated (names drawn from a hat) to Group 1 (SSRI) or Group 2 (MAOI), 30 in each. IV: type of anti-depressant. The trial is double-blind: the tablets look identical and are coded, so neither the patients nor the psychiatrist rating them know which drug is taken. Procedure and DV: each patient completes the Beck Depression Inventory (21 items, scored 0 to 3, total 0 to 63) before treatment. Doses are standard for each drug, taken daily for 12 weeks. Controls: no other drugs or therapy, same duration, same clinic visits, MAOI patients given the same dietary advice. The BDI is repeated at 12 weeks; the DV is the reduction in BDI score. Mean and range of reductions are calculated for each group and shown in a bar chart. Ethics: fully informed consent; right to withdraw at any time, with immediate alternative treatment if symptoms worsen; protection from harm through weekly monitoring of side effects; confidentiality by using participant numbers; full debrief at the end.
9(b)(i)	Biological treatments for depression include anti-depressant drugs. MAOIs

Question number	
	(monoamine oxidase inhibitors) inhibit the enzyme monoamine oxidase, which normally breaks down noradrenaline, serotonin and dopamine, so these neurotransmitters stay at higher levels in the synapse, reducing depression. SSRIs (selective serotonin reuptake inhibitors) act only on serotonin, stopping it from being reabsorbed into the presynaptic neuron after crossing the synapse, so more serotonin remains available to stimulate the postsynaptic neuron. Tricyclics also block reuptake of serotonin and noradrenaline.
9(b)(ii)	First, the knowledge says there are different types of anti-depressant that work in different ways (MAOIs act on several neurotransmitters, SSRIs only on serotonin). I used this to create my IV, with one group given an SSRI and the other an MAOI, to see which mechanism works better. Second, anti-depressants work by changing neurotransmitter levels, which takes several weeks to reduce symptoms. So I gave both drugs daily for 12 weeks and measured the DV as the change in BDI score from before to after treatment.
9(c)(i)	An independent measures design allows one treatment group to be compared directly with another. Each patient only takes one drug, so the effect of the SSRI cannot carry over into the MAOI condition, which would happen if the same patients took both.
9(c)(ii)	There is no control over participant variables. For example, patients in the SSRI group might by chance have less severe or more recent depression, so a bigger fall in their BDI scores could be due to these differences rather than the drug.
9(c)(iii)	A field experiment has high ecological validity: patients take the drug in their normal lives while attending their usual clinic, so the results show how well each anti-depressant works in real treatment, while the IV can still be controlled.

Question number

Consumer Psychology

10(a) Aim: to investigate whether multiple unit pricing (e.g. '3 for £2') increases the number of items shoppers buy compared with single unit pricing. Hypothesis: shoppers will report buying more units when items are on multiple unit pricing than on single unit pricing.

Questionnaire technique: paper and pencil, given face-to-face by a researcher at the exit of one large supermarket. There are 10 closed questions, e.g. 'Did you buy any items on a multi-buy offer today? Yes/No'; 'How many tins of soup did you buy today? 1 / 2 / 3 / 4 or more'; 'Did you buy more of an item than you planned because of a multi-buy offer? Yes/No'; 'Multi-buy offers make me buy more than I need' rated on a 5-point scale (1 = strongly disagree, 5 = strongly agree). In week 1 soup is priced 'one for 70p'; in week 2 the same soup is '3 for £2.10' (same unit price).

Sample: an opportunity sample of 100 adult shoppers each week, approached as they leave the supermarket on weekdays between 10am and 6pm, to control time of day.

Procedure: shoppers are given standardised instructions, complete the questionnaire on a clipboard (about 5 minutes) and can check their receipt to give accurate answers.

Descriptive statistics: the mean number of tins bought in week 1 and week 2 is calculated, and the percentage answering 'Yes' to each question. The mode is used for the rating scale. These are displayed in bar charts comparing the two pricing conditions.

Ethics: informed consent is obtained, shoppers are told of their right to withdraw, no names are recorded (confidentiality) and they are debriefed about the aim afterwards.

Question number	
10(b)(i)	Multiple unit pricing is a point of purchase decision. Supermarket consumers are exposed to a quantity anchor when multiple-unit prices are shown instead of single-unit prices (e.g. '6 cans for $3' versus '$0.50 each'). The higher number becomes salient, so shoppers buy more than normal. Wansink et al. (1998) tested this in 86 stores over one week: 43 used single unit pricing and 43 used multiple unit pricing on 13 categories of items. Multiple unit pricing led to more sales than single unit pricing.
10(b)(ii)	First, Wansink compared single unit pricing with multiple unit pricing for the same items. I used this by pricing the same soup as 'one for 70p' in week 1 and '3 for £2.10' in week 2, so the unit price was identical and only the type of pricing changed. Second, the knowledge says the multiple acts as an anchor that increases quantity bought. So my questions measured quantity ('How many tins did you buy?') and whether shoppers bought more than planned, and I compared the mean number bought in each week.
10(c)(i)	Paper and pencil given face-to-face means the researcher is there at the exit, so shoppers are more likely to complete it, and to do so straight after shopping while their purchases (and receipt) are fresh, giving more accurate answers.
10(c)(ii)	Closed questions give shoppers no opportunity to explain their behaviour. Answering 'Yes' to buying more soup than planned does not tell us why, e.g. whether it was the offer or simply that they needed it.
10(c)(iii)	The mean summarises the number of tins bought in each week as one figure, so the two pricing conditions can be easily compared to see whether multiple unit

Question number	
	pricing increased purchases.
	Health Psychology
11(a)	Aim: to investigate patients' preferences for the clothing their doctors wear.
	Hypothesis: patients will prefer doctors wearing a white coat to doctors wearing casual clothes.
	Sample: 60 adult patients (30 male, 30 female, aged 18 to 80) from a large general practice, selected by an opportunity sample as they wait in the waiting room.
	Interview format: a structured face-to-face interview, carried out in a private room by the same trained interviewer, so every patient gets the same questions in the same order. Patients are shown six photographs of the same male doctor and six of the same female doctor in different clothing: white coat, formal suit, smart casual, casual (jeans), surgical scrubs and a uniform with a name badge.
	Questions: closed questions, e.g. 'How happy would you be to see this doctor?' for each photograph, and 'Which photograph would you most like your doctor to look like?', plus two open questions, e.g. 'Why do you prefer this clothing?'
	Question scoring/interpretation: each photograph is rated on a 5-point scale (1 = very unhappy, 5 = very happy), giving quantitative data. Mean ratings for each style are calculated and compared by age and gender in a bar chart. Open answers are recorded and coded into themes (e.g. professionalism, hygiene, approachability) by two researchers, with inter-rater reliability checked.
	Ethics: informed consent, right to withdraw, confidentiality (no names recorded) and a debrief. The interview lasts about 10 minutes so the patient does not miss their appointment.
11(b)(i)	Non-verbal communication includes the clothing practitioners wear. McKinstry and

Question number	
	Wang (1991) studied patients' preferences for doctors' dress. Patients were shown photographs of the same male and the same female doctor dressed in five different styles, including a white coat, a formal suit and casual clothes, and indicated how happy they would be to see each doctor. The most acceptable was the male and female doctor wearing a white coat, and older patients were more likely to prefer formal dress.
11(b)(ii)	First, McKinstry and Wang showed photographs of the same doctor in different clothing. I used this by showing patients photographs of the same male and female doctor in six styles, so only the clothing changed. Second, patients rated how happy they would be with each doctor. I modified this into a structured interview in which each photograph is rated on a 5-point scale, with open questions added to find out why patients prefer a style such as the white coat.
11(c)(i)	A 5-point rating scale was used because each patient's score for each clothing style can be compared with other patients' scores, so mean ratings for e.g. the white coat and casual clothes can be compared.
11(c)(ii)	Patients may not give truthful answers because the interviewer can see them. A patient might rate the white coat highly because they think that is the answer the interviewer, who works at the practice, expects (social desirability).
11(c)(iii)	A structured interview was used so all patients received the same questions in the same order about the same photographs, so their ratings of each clothing style could be compared fairly.
	Organisational Psychology

Question number	
12(a)	Aim: to investigate the effect of noise level on the productivity of office workers. Hypothesis: workers will complete more tasks in a quiet condition than in a noisy condition. Type of experiment: a field experiment in the workers' own open-plan office. IV: noise level, with three conditions: low (below 40 dB), moderate (55 dB, normal conversation) and high (75 dB, recorded office noise played through speakers). Nothing over 80 dB is used, to avoid harm. Design: repeated measures, each worker doing one week in each condition, with counterbalancing (a third of workers in each order) to reduce order effects. Sample: 30 administrative workers from one company who volunteer after a notice from the researcher. Dependent variable: productivity, measured as the number of standard data-entry forms completed correctly per hour, recorded automatically by the computer system. The mean per hour for each worker in each condition is calculated and compared with their normal weekly average. Controls: same tasks of equal difficulty, same hours (9am to 5pm), same lighting and temperature, same weekdays, and supervisors give no feedback during the study. Ethical guidelines: informed consent is obtained in writing, explaining the noise levels. Workers are told they have the right to withdraw at any time without any effect on their job or pay, and the manager signs a statement confirming this. Protection from harm: noise is kept below 80 dB and anyone reporting headaches can stop. Confidentiality: results are anonymised so managers cannot see an individual's productivity. All workers are debriefed.
12(b)(i)	Physical work conditions such as illumination, temperature and noise can affect productivity. For most conditions there is an optimal level: not too much and not

Question number	
	too little. The Hawthorne studies at the Western Electric company varied illumination for a test group and found productivity rose whether lighting was increased or decreased, and the control group improved too. This was explained as the Hawthorne effect: workers worked harder because they were being observed and given attention, not because of the physical change itself (reviewed by Kompier, 2006).
12(b)(ii)	First, the knowledge says physical conditions such as noise affect productivity and that there may be an optimal level. I used this by making noise my IV with three levels (low, moderate, high) to find the level at which productivity is best. Second, the Hawthorne effect shows productivity can rise just because workers are observed. So my DV is recorded automatically by the computer, supervisors give no feedback, and each worker's output is compared with their own normal average, so attention is equal across all conditions.
12(c)(i)	The number of forms completed correctly per hour was chosen because it is an objective, quantitative measure of productivity, and counting only correct forms means a worker who works fast but makes mistakes in high noise is not shown as more productive.
12(c)(ii)	A field experiment is harder to control, so extraneous variables such as colleagues talking or phones ringing in the open-plan office could add extra noise, meaning changes in forms completed may not be due to the noise level set.
12(c)(iii)	The right to withdraw was chosen because workers may feel they cannot leave a study run at work for fear of losing their job; a signed statement from the manager reassures them they can stop if the noise becomes too unpleasant.

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PSYCHOLOGY **9990/42**

Paper 4 Specialist Options: Application and Research Methods **October/November 2024**

1 hour 30 minutes

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You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

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Section A

Answer questions from **two** options in this section.

Clinical Psychology

Answer **all** questions if you have studied this option.

1 The key study by Chapman and DeLapp (2013) treated an individual with a blood/injection/injury phobia using an exposure hierarchy with applied tension:

(a) **(i)** Explain what is meant by the term 'exposure hierarchy'. [2]

(ii) Give **two** examples of situations included in the exposure hierarchy in this study. [2]

(b) Suggest how blood/injection/injury phobia could be diagnosed without using rating scales. Your suggestion **must** be ethical. [2]

(c) Explain **one** strength and **one** weakness of the case study research method as used in this study. [4]

2 Depression can be measured using the Beck depression inventory (BDI).

(a) Outline how a person's level of depression is interpreted using the BDI. [2]

(b) Suggest **one** way that depression could be measured, other than by the BDI. [2]

(c) Explain **two** weaknesses of the BDI. [4]

Consumer Psychology

Answer **all** questions if you have studied this option.

3 From the key study by Robson et al. (2011) on consumers' responses to table spacing:

(a) Describe the **two** parts of the online questionnaire used in this study. [4]

(b) Suggest how an observation could be used to gather data on consumers' responses to table spacing. [2]

(c) Explain **two** weaknesses of using online questionnaires to assess personal space in restaurants. [4]

4 EEG (electroencephalogram) as a technique has been used to investigate how people respond to advertising media, e.g. Ciceri et al. (2020).

(a) Outline how an EEG can be used to investigate how people respond to advertising media. [2]

(b) Suggest **one** way to investigate how people respond to advertising media, other than by using an EEG. [2]

(c) Explain **one** strength and **one** weakness of studying how people respond to advertising media using an EEG. [4]

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Health Psychology

Answer **all** questions if you have studied this option.

5 The key study by Shoshani and Steinmetz (2014) on using positive psychology in schools used questionnaires to gather data. These included the Rosenberg Self-Esteem Scale (RSE) and the General Self-Efficacy Scale, both of which used four-point scales.

(a) **(i)** Outline the Rosenberg Self-Esteem Scale (RSE). [2]

(ii) Outline the General Self-Efficacy Scale. [2]

(b) Suggest **one** health promotion strategy that could be used to promote mental health in schools, other than the strategy referred to in this study. [2]

(c) Explain **one** strength and **one** weakness of using four-point scales in this study. [4]

6 **(a)** Explain what is meant by a clinical interview.
Do **not** refer to observing patients' behaviour in your answer. [2]

(b) Suggest how observing the pain behaviour of a patient can help assess their level of pain during a clinical interview. [2]

(c) Explain **two** weaknesses of using a clinical interview to measure pain. [4]

Organisational Psychology

Answer **all** questions if you have studied this option.

7 The key study by Giacalone and Rosenfeld (1987) on sabotage in the workplace divided workers into two groups:

(a) **(i)** Explain how the sample of participants were divided into these two groups. [2]

(ii) State **one** difference between the results of the Sabotage Methods Questionnaire for these two groups of participants. [2]

(b) Suggest **one** way that the reliability of the Sabotage Methods Questionnaire could be tested. [2]

(c) Explain **two** weaknesses of using a volunteer sample of workers to answer questionnaires about sabotage. [4]

8 Studies have been conducted on open plan offices, e.g. Oldham and Brass (1979).

(a) Explain what is meant by an 'open plan office'. [2]

(b) Suggest why workers' levels of concentration may be affected by an open plan office design. [2]

(c) Explain **two** reasons why generalisations **cannot** be made about the effect on workers of open plan office design from a single study. [4]

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Section B

Answer **one** question from this section.

Clinical Psychology

9 **(a)** Plan a study using a questionnaire with open questions to investigate generalised anxiety disorder in university students.

Your plan must include details about:
- question interpretation/scoring
- the questionnaire technique. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for the way you chose to interpret/score responses to your questions. [2]

(ii) Explain **one** weakness of the way you chose to interpret/score responses to your questions. [2]

(iii) Explain **one** reason for your choice of questionnaire technique. [2]

Consumer Psychology

10 **(a)** Plan a study using a postal questionnaire to investigate the 'explorer' type of spatial behaviour pattern of shoppers.

Your plan must include details about:
- sampling technique
- type(s) of data. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for your choice of sampling technique. [2]

(ii) Explain **one** weakness of your choice of sampling technique. [2]

(iii) Explain **one** reason for your choice of type(s) of data. [2]

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Health Psychology

11 Some children participated in a healthy eating programme when at school to encourage them to eat more vegetables.

(a) Plan a study using a telephone interview of these children, once they are adults, to investigate whether their participation in this healthy eating programme resulted in eating more vegetables as adults.

Your plan must include details about:
- question format
- interview format. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for your choice of question format. [2]

(ii) Explain **one** weakness of your choice of question format. [2]

(iii) Explain **one** reason for your choice of interview format. [2]

Organisational Psychology

12 Shiftwork can be divided into two types: slow rotation and rapid rotation.

(a) Plan an experiment to investigate which type of rotation has the **most** negative effect on the health of workers.

Your plan must include details about:
- controls
- dependent variable. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your experiment. [4]

(c) **(i)** Explain **one** reason for your choice of controls. [2]

(ii) Explain **one** weakness of your choice of controls. [2]

(iii) Explain **one** reason for your choice of dependent variable. [2]

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Surname	StemUp Model Solution
Answer booklet	Write the question number in the left-hand margin at the start of each answer.

Question number

Answers for paper 9990/42

Section A

Clinical Psychology

1(a)(i) An exposure hierarchy is a list of situations that a person fears or avoids, ordered by how much anxiety they cause, with the least anxiety-provoking at the bottom and the most at the top. It typically has about 10 situations.

1(a)(ii) 1. Getting blood pressure taken by a nurse.
2. Seeing someone get a phlebotomy (blood taken) in person.

1(b) Use a clinical interview, in which the clinician asks the person about blood, injection and injury situations, e.g. 'What happens when you see blood or have an injection? Have you ever fainted?', and whether they avoid such situations, then compares the answers with diagnostic criteria.

1(c) A strength is that 'T' was studied as part of his everyday life. He was not a volunteer taking part in an artificial study but a person with a real-life problem of fainting during medical procedures, so the findings about the treatment have high ecological validity.

A weakness is that 'T' is only one person, so generalisations are difficult. His specific experiences of fainting and medical procedures may be unique, so the treatment may not work for other people with blood/injection/injury phobia.

Question number	
2(a)	The person answers all 21 questions, each scored 0, 1, 2 or 3, and the scores are added up to give a total between 0 and 63. The total is matched to levels of depression, e.g. 0 to 10 is normal and over 40 is extreme depression.
2(b)	A clinical interview, face-to-face, by a psychiatrist qualified to assess depression, asking e.g. 'How has your sleep and appetite been over the last two weeks?' and 'Do you still enjoy things you used to?'
2(c)	One weakness is that the BDI assumes everyone with depression is the same, so every person is measured on the same 21 symptoms. A person whose depression shows itself in other ways may get a low score even though they are depressed. A second weakness is that the BDI gathers only quantitative data (scores of 0 to 3). It ignores the uniqueness that qualitative data would reveal, such as why the person feels hopeless, so the unique characteristics of each person's depression are never recorded.
	Consumer Psychology
3(a)	Part 1 collected general participant characteristics: age, gender, ethnicity, place of residence, how often they used restaurants and whether they had restaurant work experience. Part 2 measured participants' emotional, intentional and anticipated behavioural reactions to one of three images of tables for two placed 6, 12 or 24 inches apart.
3(b)	A covert, non-participant, structured observation in a restaurant, with two observers using behavioural categories (e.g. leaning away, glancing at neighbours, asking to move) to record whether diners at tables 6, 12 or 24 inches apart

Question number	
	behave comfortably or uncomfortably.
3(c)	One weakness is that the sample only includes people with internet access, so it is not representative of all restaurant customers, e.g. older diners, so the findings about preferred table spacing may not apply to them. A second weakness is that participants are not face-to-face with a researcher, so they may lose concentration or get bored, paying little attention to the images of tables 6, 12 or 24 inches apart and giving careless answers about how comfortable they would feel.
4(a)	The participant wears an EEG headset (e.g. Emotiv EPOC+) that records the electrical activity of the brain while different types of advertisement are presented on a screen; differences in brain activity show how they respond to each type of advert.
4(b)	Eye-tracking: the advert is shown on a screen and an eye-tracker records exactly where the participant looks and for how long (fixations), e.g. whether they look at the brand logo or the model's face.
4(c)	A strength is that EEG 'brain wave' data is objective. The activity recorded in response to an advertisement is a physiological fact, not affected by what the participant says they feel, so social desirability cannot bias it. A weakness is that the EEG headset may be uncomfortable to wear, so it may distract participants from watching the advertisement, which confounds the results because brain activity may reflect discomfort rather than the response to the advert.
	Health Psychology

Question number	
5(a)(i)	The RSE measures a person's feelings of worth as a human being. It has ten items, some positively and some negatively worded, each rated on a 4-point scale from 1 (strongly disagree) to 4 (strongly agree).
5(a)(ii)	It measures perceived self-efficacy, predicting coping with daily hassles and stressful events. It has ten items, e.g. 'I can always manage to solve difficult problems if I try hard enough', rated from 1 (not at all true) to 4 (exactly true).
5(b)	Fear arousal: students watch a short video showing the negative effects of stress and social media overuse on mental health, followed by advice on where to get help, to motivate them to look after their mental health.
5(c)	A strength is that a four-point scale has no neutral middle option, so each student must either agree or disagree, e.g. with 'I feel I have a number of good qualities'. This means a clear direction of self-esteem can be determined for everyone. A weakness is that a student who genuinely cannot decide, or does not understand an item, cannot opt out with a neutral answer, so they have to commit to a false response about their self-esteem or self-efficacy, reducing validity.
6(a)	A clinical interview is a face-to-face interview between a medical practitioner and a patient in a medical setting, in which the practitioner asks questions to diagnose symptoms and to prescribe or assess treatment.
6(b)	The doctor can observe non-verbal pain behaviours while the patient talks, such as facial grimaces, rubbing or holding the painful area, or limping, and rate them (none / occasional / frequent) to judge how much pain the patient is in.

Question number	
6(c)	One weakness is that a clinical interview gives no precise indicator of the level of pain, unlike a psychometric measure such as the McGill Pain Questionnaire, so it is hard to compare a patient's pain before and after treatment. A second weakness is that the patient may not know the terminology to describe symptoms or where body parts are, e.g. describing pain from indigestion as chest pain, so the doctor may misjudge the type or seriousness of the pain.
	Organisational Psychology
7(a)(i)	Participants rated reasons for sabotage on 7-point scales and their ratings were summed. A median split was used (median 25.5): high reason accepters scored above 25.5 and low reason accepters below 25.5.
7(a)(ii)	High reason accepters were more likely to justify sabotage than low reason accepters, e.g. for 'setting up a foreman to get him into trouble' high reason accepters scored 2.74 but low reason accepters only 1.32.
7(b)	Test-retest: give the Sabotage Methods Questionnaire to the same workers again a few weeks later and correlate the two sets of scores; a strong positive correlation shows it is reliable.
7(c)	One weakness is that workers may volunteer because they have never sabotaged anything and have nothing to hide, while saboteurs avoid the study, so the true extent and forms of sabotage are not known. A second weakness is that volunteers may not be honest. Even though they chose to take part, admitting that they justify or have done sabotage could cost them their job, so they may under-report it.

Question number	
8(a)	An open plan office is a large, open working space with no interior walls or full-height partitions and no small enclosed private offices; desks may be separated only by low partitions.
8(b)	Noise levels are higher in an open plan office because many people talk and use phones in the same space, so the background noise makes it hard for workers to concentrate on their tasks.
8(c)	One reason is that a single study usually uses only one type of worker. Oldham and Brass only studied workers in a newspaper organisation, and other types of workers, such as software developers, might react differently to open plan offices. A second reason is that a study is carried out in one country with its own culture. In some countries workers may find open plan offices disrupt their concentration, but in more collectivist cultures the contact with colleagues may be welcomed, so the results may not apply elsewhere.
	Section B
	Clinical Psychology
9(a)	Aim: to investigate the symptoms and causes of generalised anxiety disorder (GAD) in university students. Questionnaire technique: an online questionnaire sent by email link to students, completed privately in their own time, taking about 20 minutes. Sample: a volunteer sample of 200 undergraduate students from one university who respond to an advertisement on the student union website. Questions: 10 open questions based on GAD-7 symptoms, e.g. 'Describe how often you feel nervous, anxious or on edge, and what situations cause this'; 'Describe any

Question number	
	physical symptoms you experience when you worry'; 'Explain how worrying affects your ability to relax and study'; 'Describe how controllable your worries feel.' Interpretation/scoring: answers give qualitative data. Content analysis is used: two trained raters, working independently, code each answer into categories taken from the GAD-7 (e.g. uncontrollable worry, trouble relaxing, restlessness, irritability, physical symptoms) and score how often each is described: 0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day. Each student gets a total out of 21 (0 to 5 mild, 6 to 10 moderate, 11 to 15 moderately severe, 16 to 21 severe). Inter-rater reliability is checked by correlating the raters' scores; a correlation above +0.8 is acceptable. Frequencies of each theme are shown in a bar chart, and quotes illustrate themes. Ethics: informed consent on the first screen; right to withdraw by closing the browser; anonymity as no names or email addresses are stored; protection from harm, as every page gives contact details for the university counselling service; a debrief at the end.
9(b)(i)	Generalised anxiety disorder (ICD-11) involves excessive, uncontrollable and often irrational worry about many different things, on most days, that interferes with daily functioning; as one worry is resolved, another appears. Physical symptoms include muscle tension, headaches, trembling, sweating and restlessness. GAD is measured by the GAD-7, which has seven questions about the last two weeks, each scored 0 (not at all), 1 (several days), 2 (more than half the days) or 3 (nearly every day), giving a total of 0 to 21 that indicates the severity of the anxiety.
9(b)(ii)	First, the GAD-7 asks about specific symptoms such as feeling nervous and trouble relaxing. I turned these into open questions, e.g. 'Explain how worrying affects your ability to relax and study', so students can describe the symptoms in their own

Question number	
	words.
	Second, the GAD-7 scores each symptom 0 to 3 by frequency, giving a total of 0 to 21. I used this scoring for my raters to code the open answers, so each student gets a severity score.
9(c)(i)	The open answers give qualitative data, so coding them into GAD-7 categories and scoring 0 to 3 converts them into quantitative data, so the severity of anxiety can be compared between students.
9(c)(ii)	The raters interpreting the answers may not agree, e.g. one may code 'I worry about exams' as uncontrollable worry and the other not, so students' severity scores may be inaccurate.
9(c)(iii)	An online questionnaire means there is no researcher present, so students are more likely to be honest about sensitive symptoms such as constant worry, and a large, diverse sample can be reached by email.
	Consumer Psychology
10(a)	Aim: to investigate the characteristics of the 'explorer' spatial behaviour pattern of supermarket shoppers.
	Sampling technique: a random sample of 500 adults from the loyalty card database of one large supermarket chain. Every holder is given a number and a computer random number generator selects 500. A postal questionnaire is sent to each home with a prepaid return envelope.
	Questions: 15 questions. Closed questions, e.g. 'When you shop, do you visit all the aisles? Always / Often / Sometimes / Never'; 'Do you use a trolley? Yes/No'; 'How long is your main shopping trip? Under 15 minutes / 15 to 30 / 30 to 60 / over

Question number	
	60'; 'Do you go back to aisles you have already visited? Yes/No'; 'I spend a long time looking at products' rated 1 to 5. Open questions, e.g. 'Describe the route you usually take around the store and why.'
	Types of data: both quantitative and qualitative. Closed answers give quantitative data: shoppers who report long trips, visiting all aisles, revisiting aisles and using a trolley are classed as explorers. Percentages and modes are calculated and shown in bar charts, e.g. percentage of explorers by gender. Open answers give qualitative data, analysed into themes to explain why explorers shop as they do.
	Ethics: a cover letter explains the aim; returning the questionnaire gives consent; it is anonymous (no names); participants can leave out any question or not return it (right to withdraw); a debrief sheet is included.
10(b)(i)	Gil et al. (2009) studied shopper behaviour using CCTV to track 480 shoppers' movement around a supermarket. They identified five types of spatial behaviour pattern: specialist, native, tourist, explorer and raider. The explorer makes the longest trips, goes everywhere, often more than once, slowly, with long interactions with products, and buys a lot. Explorers cover all the aisles; 82% were on a main mission, 62% were women alone and 87% took a trolley.
10(b)(ii)	First, Gil et al. found explorers make long trips and cover all aisles. I used this in closed questions about trip length and whether shoppers visit all aisles, to classify explorers.
	Second, Gil et al. found 87% of explorers took a trolley and 62% were women shopping alone. I used this by asking about trolley use and gender, so I can compare my explorers with Gil's, using a questionnaire rather than CCTV.
10(c)(i)	A random sample gives every loyalty card holder an equal chance of selection, so there is no researcher bias and the sample is more likely to represent all types of

Question number	
	shopper, explorers included.
10(c)(ii)	Selected people may not agree to take part: many may not return the postal questionnaire, so the final sample may be small and biased, e.g. only shoppers with lots of free time, who may be more likely to be explorers.
10(c)(iii)	Quantitative data from closed questions can be statistically analysed, e.g. the percentage of explorers who use a trolley, while qualitative data allows shoppers to give reasons for their route, giving the best of both.
	Health Psychology
11(a)	Aim: to investigate whether adults who took part in a school healthy eating programme as children eat more vegetables than adults who did not. Sample: 100 adults aged 20 to 25: 50 who attended the school that ran the programme and 50 who attended a similar school nearby that did not. They are contacted using former pupil records with the schools' permission. Interview format: a semi-structured telephone interview by the same trained interviewer, lasting about 15 minutes. All participants are asked the same core questions in the same order, but the interviewer can ask follow-up questions, e.g. 'Can you tell me more about that?' Question format: both closed and open questions. Closed, e.g. 'How many portions of vegetables did you eat yesterday? 0 / 1 / 2 / 3 / 4 / 5 or more'; 'How often do you eat vegetables with your main meal? Every day / most days / rarely / never'; 'Compared with others, is your vegetable consumption above average / average / below average?' Open, e.g. 'Describe what you remember about the healthy eating programme at school' and 'Explain why you eat the amount of vegetables you do.' Data: closed answers give quantitative data; the mean portions of vegetables per

Question number	
	day are compared for the two groups in a bar chart. Open answers give qualitative data analysed into themes, e.g. 'habits formed at school'. Ethics: verbal informed consent recorded at the start, right to withdraw and to end the call at any time, confidentiality (data stored by participant number), and a debrief at the end of the call.
11(b)(i)	Tapper et al. (2003) devised the 'Food Dudes' programme to promote eating fruit and vegetables in schools. It used peer modelling (videos of heroic 'Food Dudes' who eat fruit and vegetables) and rewards (small prizes for eating them). In a longitudinal field experiment, children in an experimental school and a control school were presented with fruit and vegetables at lunchtime. Consumption at lunchtime and at home in the experimental school was substantially higher than in the control school, so the programme was effective.
11(b)(ii)	First, Tapper et al. compared an experimental school with a control school. I used this by interviewing adults from a school that ran the programme and from a similar school that did not, so the two groups can be compared. Second, Tapper measured how much fruit and vegetables children ate. I extended this into adulthood with a closed question on portions of vegetables eaten yesterday, plus an open question asking what they remember about the programme.
11(c)(i)	Closed questions give answers in the same format for all participants, so the number of portions of vegetables eaten can be easily scored and the means of the two groups compared.
11(c)(ii)	Closed questions give no opportunity to explain behaviour: answering '2 portions' does not say why, e.g. whether it is due to the school programme or to their

Question number	
	partner's cooking.
11(c)(iii)	A semi-structured interview has fixed core questions so answers can be compared, but the interviewer can also ask follow-up questions, e.g. if an adult mentions the programme changed their eating habits.
	Organisational Psychology
12(a)	Aim: to investigate whether slow rotation or rapid rotation shiftwork has the more negative effect on workers' health. Hypothesis: rapid rotation workers will have more health problems than slow rotation workers.
	Type of experiment: a natural experiment in two hospitals, as the shift system is already set by the employer. IV: type of rotation: slow rotation (shifts change every 3 to 4 weeks) or rapid rotation (shifts change every 2 to 3 days). Design: independent measures.
	Sample: 100 nurses, 50 from each hospital, who volunteer after a notice in the staff rooms.
	Controls: all participants are nurses of the same grade, aged 25 to 45, who have worked their shift system for at least one year; both hospitals rotate between the same three 8-hour shifts (morning, afternoon, night) and the same hours per week; neither has other jobs or a previous diagnosis of sleep disorder or ulcer.
	Dependent variable: health over 12 months, measured in two ways: the number of days of sick leave taken for health reasons (from hospital records), and a monthly checklist of health problems (sleep disturbance, fatigue, stomach problems, colds) rated 0 (never) to 3 (very often), totalled out of 12. Means are compared between the two groups in a bar chart.
	Ethics: informed consent, right to withdraw, confidentiality of medical records (only participant numbers used), and a debrief; results are not shared with

Question number	
	managers.
12(b)(i)	Shiftwork affects health and accidents because it disrupts circadian rhythms. Slow rotation (shift changes every 3 to 4 weeks) is best and rapid rotation (changes every few days) is worst for health, because the body never adjusts. Effects include sleep disturbance and physical and mental fatigue. Knutsson (2003) reviewed research and found shiftwork is associated with peptic ulcer disease, coronary heart disease and compromised pregnancy outcome. Gold et al. (1992) found rotating-shift nurses were more likely to nod off at work and have accidents or near misses.
12(b)(ii)	First, the knowledge contrasts slow rotation (every 3 to 4 weeks) with rapid rotation (every few days). I used these exact definitions for my two IV conditions. Second, the knowledge links shiftwork to sleep disturbance, fatigue and stomach (ulcer) problems. I used these health effects in my DV checklist, rated monthly, alongside sick leave days.
12(c)(i)	The controls (same job, grade, age range and shift hours) mean it is more likely that any difference in sick leave and health scores has been caused by the type of rotation, not by different workloads.
12(c)(ii)	Controlling job, grade and age (only nurses aged 25 to 45) makes the sample narrow, so the results lack generalisability to other shiftworkers, such as older factory workers, whose health may differ.
12(c)(iii)	Days of sick leave for health reasons were chosen because they show a real, serious health effect and give an objective, quantitative measure from records that is easy to compare between the two groups.

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PSYCHOLOGY **9990/43**

Paper 4 Specialist Options: Application and Research Methods **October/November 2024**

1 hour 30 minutes

4319553427

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **five** questions in total:
  - Answer questions from **two** options.
    - Section A: answer **four** questions.
    - Section B: answer **one** question.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.

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 **8** pages. Any blank pages are indicated.

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Section A

Answer questions from **two** options in this section.

Clinical Psychology

Answer **all** questions if you have studied this option.

1 From the key study by Oruč et al. (1997) on mood (affective) disorders:

(a) **(i)** Outline what is meant by a clinical interview. [2]

(ii) Outline **one** reason why the participants were interviewed. [2]

(b) The interviews were reviewed by a second psychiatrist.

Suggest **one** effect there could have been on the results if the interviews had **not** been reviewed by a second psychiatrist. [2]

(c) Explain **one** strength and **one** weakness of a clinical interview as used in this study. [4]

2 **(a)** Explain what is meant by the term 'pyromania'. [2]

(b) Suggest **one** way in which pyromania could be measured, other than by self-report. [2]

(c) Explain **two** strengths of using self-report to measure pyromania. [4]

Consumer Psychology

Answer **all** questions if you have studied this option.

3 From the key study by Hall et al. (2010) on choice blindness for food items:

(a) **(i)** Outline the sample of participants used in this study. [2]

(ii) Outline the sampling technique that was used to recruit the participants. [2]

(b) Suggest **one** sampling technique that could have been used to recruit participants for this study, other than the technique used by Hall et al. [2]

(c) Explain **one** strength and **one** weakness of the sampling technique you suggested in part **(b)**. [4]

4 **(a)** Explain what is meant by a 'customer-focused' sales technique. [2]

(b) Suggest **one** effect a customer-focused sales technique could have on the buyer–seller relationship when buying a new car. [2]

(c) Explain **one** strength and **one** weakness of a 'competitor-focused' sales technique. [4]

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Health Psychology

Answer **all** questions if you have studied this option.

5 From the key study by Savage and Armstrong (1990) on the effect of practitioner style on patient satisfaction:

(a) **(i)** Outline how participants were recruited for the study. [2]

(ii) Outline how participants were randomly allocated to the conditions of the study. [2]

(b) Suggest **one** problem if participants had **not** been randomly allocated to the conditions of the study. [2]

(c) Explain **two** strengths of the use of random allocation in this study. [4]

6 **(a)** Outline the psychological treatment of 'attention diversion' to manage and control pain. [2]

(b) Suggest **one** alternative treatment that could be used for managing and controlling shoulder pain, other than a biological or psychological treatment. [2]

(c) Explain **one** strength and **one** weakness of using attention diversion to manage pain. [4]

Organisational Psychology

Answer **all** questions if you have studied this option.

7 From the key study by Swat (1997) on monitoring accidents and risk events:

(a) **(i)** Explain what is meant by the term 'accident frequency' as used in this study. [2]

(ii) State which **two** industrial plants had the highest accident frequency (rate). [2]

(b) Suggest **one** way in which accidents in industrial plants can be reduced. [2]

(c) Explain **one** strength and **one** weakness of measuring accident frequency. [4]

8 **(a)** Outline what Maslow meant by 'physiological needs' and 'social needs'. [2]

(b) Suggest **one** way in which achievement of social needs could be measured, other than by interview. [2]

(c) Explain **one** strength and **one** weakness of using a telephone interview to gather data on need theories of motivation. [4]

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Section B

Answer **one** question from this section.

Clinical Psychology

9 **(a)** Plan an experiment to investigate which anti-depressant drug is more effective for treating depression.

Your plan must include details about:
- experimental design
- type of experiment. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your experiment. [4]

(c) **(i)** Explain **one** reason for your choice of experimental design. [2]

(ii) Explain **one** weakness of your choice of experimental design. [2]

(iii) Explain **one** reason for your choice of type of experiment. [2]

Consumer Psychology

10 **(a)** Plan a study using a questionnaire with closed questions to investigate the effectiveness of multiple unit pricing on purchases from a supermarket.

Your plan must include details about:
- the questionnaire technique
- descriptive statistics. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for your choice of questionnaire technique. [2]

(ii) Explain **one** weakness of using closed questions in your study. [2]

(iii) Explain **one** reason for your choice of descriptive statistics. [2]

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Health Psychology

11 **(a)** Plan a study using a face-to-face interview to investigate patients' preference for the clothing their doctors wear.

Your plan must include details about:
- question scoring/interpretation
- interview format. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your study. [4]

(c) **(i)** Explain **one** reason for your choice of question scoring/interpretation. [2]

(ii) Explain **one** weakness of using a face-to-face interview in your study. [2]

(iii) Explain **one** reason for your choice of interview format. [2]

Organisational Psychology

12 **(a)** Plan an experiment to investigate the effect of **one** physical work condition, other than temperature, on the productivity of workers.

Your plan must include details about:
- dependent variable
- ethical guidelines. [10]

(b) For **one** piece of psychological knowledge on which your plan is based:

(i) Describe this psychological knowledge. [4]

(ii) Explain how you used **two** features of this psychological knowledge to plan your experiment. [4]

(c) **(i)** Explain **one** reason for your choice of dependent variable. [2]

(ii) Explain **one** weakness with your choice of type of experiment. [2]

(iii) Explain **one** reason for your choice of an ethical guideline that you followed. [2]

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Surname	StemUp Model Solution
Answer booklet	Write the question number in the left-hand margin at the start of each answer.

Question number

Answers for paper 9990/43

Section A

Clinical Psychology

1(a)(i) A clinical interview is a face-to-face interview between a medical practitioner (such as a psychiatrist) and a patient, in a medical setting, involving verbal and non-verbal exchange. It is designed to diagnose symptoms and to prescribe or assess treatment.

1(a)(ii) The patients had already been assessed for their lifetime psychopathology, so they were interviewed to confirm this diagnosis (bipolar I disorder), using the SADS-L (Schedule for Affective Disorders and Schizophrenia, Lifetime Version).

1(b) The data may have been invalid, because if the first psychiatrist made an error in diagnosing bipolar type I disorder, or in checking the SADS-L results, there would be no second opinion to catch it. A person without bipolar I could then be included, so the genetic results would not be about bipolar I.

1(c) A strength is that the patient can explain and answer any question asked, for example about the history of their bipolar I disorder or which first-degree relatives have had a major affective disorder. The practitioner only has notes of previous history, so the interview confirms the person's individual circumstances and their suitability for the study.

Question number	
	A weakness is that the patient may not understand medical jargon, such as 'bipolar disorder type I' or 'transporter genes', or may describe their condition in vague terms. They may then be unable to explain clearly what the psychiatrist needs to know, so the information gathered may be inaccurate.
2(a)	Pyromania is an impulse control disorder in which there is a recurrent failure to control strong impulses to set fires, resulting in multiple acts of, or attempts at, setting fire to property or other objects. There is no apparent motive (such as money or revenge), and the person feels tension before and pleasure or relief during and after the fire setting.
2(b)	A covert, structured, non-participant observation of the person in their natural environment over a period of time. Behavioural categories (e.g. watching fires, showing fascination with fire-fighting equipment, attempting to set a fire) would be recorded to see how many diagnostic features of pyromania are shown.
2(c)	One strength is that self-report gives a measure of the extent of the problem. For example, a person who scores highly on a pyromania questionnaire, reporting frequent urges to set fires, has a severe problem, so an appropriate treatment for their pyromania can then be decided. A second strength is that self-report can reveal the person's internal experiences, which cannot be observed, such as the tension or arousal felt before setting a fire and the pleasure or relief felt afterwards. This helps us understand more about pyromania, such as its addictive nature.
	Consumer Psychology
3(a)(i)	180 supermarket customers (118 female and 62 male), aged between 16 and 80

Question number	
	years, who lived in or around Lund in Sweden.
3(a)(ii)	An opportunity sample: customers were approached as they passed a tasting stand in a supermarket, by researchers acting as independent consultants, and asked to take part in a taste test.
3(b)	A self-selecting (volunteer) sample. An advertisement could be placed in a local newspaper or on a notice in the supermarket inviting people to volunteer for a study on the quality of jam and tea.
3(c)	A strength is that because the participants have volunteered, they are more likely to be enthusiastic and less likely to withdraw, so they would be willing to complete all the jam and tea tastings and explain their choices. A weakness is that volunteers may be more interested in what the study is about, so they may be more susceptible to demand characteristics. For example, they may pay unusually close attention to the tastes, so they are more likely to detect the switched jam or tea than ordinary shoppers.
4(a)	A customer-focused technique views each customer's problems as unique. The salesperson acts as a consultant rather than a persuader, actively engaging the buyer and seeking information from them about their individual needs rather than telling them what they want.
4(b)	The buyer feels that the seller is attentive and cares about them, for example asking how they will use the new car (family size, budget, driving needs). This builds trust, so the buyer is more likely to be loyal, return for their next car and recommend the dealer to others.

Question number	
4(c)	A strength is that the product is very competitively priced, so the customer gets a good deal, e.g. the seller beats a rival's price on the same item. The salesperson also needs little product information and needs to know very little about the customer, so sales can be made quickly. A weakness is that it assumes every customer is the same and that a competitive deal is all that is needed to secure a sale. Unlike a customer-focused technique, the customer's individual needs are ignored, so they may buy something unsuitable and not return.
	Health Psychology
5(a)(i)	A random number generator was used to select four patients from each surgery of one doctor in an inner London general practice, over a four-month period.
5(a)(ii)	After the doctor had confirmed that a patient was suitable for the study, the doctor used cards to randomly allocate the patient to either the directing or the sharing consultation style.
5(b)	The results might not be valid, because the doctor might (consciously or not) choose which patients got the sharing style, e.g. giving it to friendlier patients, to show that a sharing style is better. Differences in satisfaction could then be due to personality rather than the style.
5(c)	One strength is that there is no participant bias. The patient does not choose which condition they are in, so they cannot bias the study; they are randomly put into the directing or sharing condition. A second strength is that there is no doctor bias. The doctor delivering the style cannot bias the study because he does not know whether a directing or sharing

Question number	
	card will appear next, so he cannot choose particular patients for a particular style.
6(a)	Attention diversion is a cognitive strategy in which the person focuses on a non-related stimulus to distract themselves from the discomfort. It can be passive, such as looking at a picture or watching television, or active, such as singing a song or doing mental arithmetic.
6(b)	Acupuncture: between five and twenty fine stainless steel needles are inserted along meridian lines (through which 'qi' is said to flow) around the shoulder and left in place for ten to twenty minutes to reduce the shoulder pain.
6(c)	A strength is that the person can use the technique wherever they are and whenever they are in pain, for example singing to themselves at home, so they are an active participant in managing their own pain without needing drugs or a practitioner. A weakness is that the person may struggle to concentrate on a non-related stimulus, especially when the pain is severe, so the distraction fails and the pain is not eased.
	Organisational Psychology
7(a)(i)	Accident frequency is the number of injury accidents (not minor incidents) that resulted in sick leave days off work, per 100 employees in a year.
7(a)(ii)	The foundry (5.9) and the meat processing plant (2.8).
7(b)	Use a token economy, as in Fox et al. (1987) at two open-cast mines. Employees earn stamps (exchangeable for rewards) for working without time lost to injury

Question number	
	and for behaviour that prevents accidents, and lose stamps for unsafe behaviour.
7(c)	A strength is that accident frequency rates are quantitative, so statistics can be compiled; for example, the number of accidents in different plants or industries can be compared directly, as Swat compared the foundry with the meat processing plant. A weakness is that accident frequency does not take account of severity. An accident where a worker misses one day counts the same as one where a worker misses months, so the true seriousness of the risk in a plant may be hidden.
8(a)	Physiological needs are basic survival needs such as food, drink and warmth. Social needs are the need for love, affection, relationships, friendship and family.
8(b)	A questionnaire with closed questions and tick boxes, e.g. 'Do you have close friends at work? Yes/No' and 'I feel accepted by my team' rated 1 to 5, to show how far the person has achieved social needs.
8(c)	A strength is that using a telephone means a potentially large and representative sample can be contacted cheaply, across different places, so the needs of a diverse sample of workers can be investigated. A weakness is that the participant may not tell the truth, exaggerating or underemphasising details, for example claiming their social needs are met to appear popular. This may lead the researcher to make inaccurate conclusions about which need stage the person is at.
	Section B
	Clinical Psychology

Question number	
9(a)	Aim: to investigate whether an SSRI (fluoxetine) or an MAOI (phenelzine) is more effective for treating depression. Hypothesis: there will be a difference in the reduction in BDI scores between patients given the SSRI and patients given the MAOI after 12 weeks. Null hypothesis: there will be no difference. Type of experiment: a field experiment (a randomised controlled trial) carried out in outpatient clinics, the patients' normal setting for treatment, so they continue their everyday lives. Sample: 60 adults aged 18 to 65 newly diagnosed with moderate depression by a psychiatrist, recruited by volunteer sampling through notices in the clinics. People taking other medication or with other disorders are excluded. Experimental design: independent measures. Participants are randomly allocated (names drawn from a hat) to Group 1 (SSRI) or Group 2 (MAOI), 30 in each. IV: type of anti-depressant. The trial is double-blind: the tablets look identical and are coded, so neither the patients nor the psychiatrist rating them know which drug is taken. Procedure and DV: each patient completes the Beck Depression Inventory (21 items, scored 0 to 3, total 0 to 63) before treatment. Doses are standard for each drug, taken daily for 12 weeks. Controls: no other drugs or therapy, same duration, same clinic visits, MAOI patients given the same dietary advice. The BDI is repeated at 12 weeks; the DV is the reduction in BDI score. Mean and range of reductions are calculated for each group and shown in a bar chart. Ethics: fully informed consent; right to withdraw at any time, with immediate alternative treatment if symptoms worsen; protection from harm through weekly monitoring of side effects; confidentiality by using participant numbers; full debrief at the end.
9(b)(i)	Biological treatments for depression include anti-depressant drugs. MAOIs

Question number	
	(monoamine oxidase inhibitors) inhibit the enzyme monoamine oxidase, which normally breaks down noradrenaline, serotonin and dopamine, so these neurotransmitters stay at higher levels in the synapse, reducing depression. SSRIs (selective serotonin reuptake inhibitors) act only on serotonin, stopping it from being reabsorbed into the presynaptic neuron after crossing the synapse, so more serotonin remains available to stimulate the postsynaptic neuron. Tricyclics also block reuptake of serotonin and noradrenaline.
9(b)(ii)	First, the knowledge says there are different types of anti-depressant that work in different ways (MAOIs act on several neurotransmitters, SSRIs only on serotonin). I used this to create my IV, with one group given an SSRI and the other an MAOI, to see which mechanism works better. Second, anti-depressants work by changing neurotransmitter levels, which takes several weeks to reduce symptoms. So I gave both drugs daily for 12 weeks and measured the DV as the change in BDI score from before to after treatment.
9(c)(i)	An independent measures design allows one treatment group to be compared directly with another. Each patient only takes one drug, so the effect of the SSRI cannot carry over into the MAOI condition, which would happen if the same patients took both.
9(c)(ii)	There is no control over participant variables. For example, patients in the SSRI group might by chance have less severe or more recent depression, so a bigger fall in their BDI scores could be due to these differences rather than the drug.
9(c)(iii)	A field experiment has high ecological validity: patients take the drug in their normal lives while attending their usual clinic, so the results show how well each anti-depressant works in real treatment, while the IV can still be controlled.

Question number

Consumer Psychology

10(a) Aim: to investigate whether multiple unit pricing (e.g. '3 for £2') increases the number of items shoppers buy compared with single unit pricing. Hypothesis: shoppers will report buying more units when items are on multiple unit pricing than on single unit pricing.

Questionnaire technique: paper and pencil, given face-to-face by a researcher at the exit of one large supermarket. There are 10 closed questions, e.g. 'Did you buy any items on a multi-buy offer today? Yes/No'; 'How many tins of soup did you buy today? 1 / 2 / 3 / 4 or more'; 'Did you buy more of an item than you planned because of a multi-buy offer? Yes/No'; 'Multi-buy offers make me buy more than I need' rated on a 5-point scale (1 = strongly disagree, 5 = strongly agree). In week 1 soup is priced 'one for 70p'; in week 2 the same soup is '3 for £2.10' (same unit price).

Sample: an opportunity sample of 100 adult shoppers each week, approached as they leave the supermarket on weekdays between 10am and 6pm, to control time of day.

Procedure: shoppers are given standardised instructions, complete the questionnaire on a clipboard (about 5 minutes) and can check their receipt to give accurate answers.

Descriptive statistics: the mean number of tins bought in week 1 and week 2 is calculated, and the percentage answering 'Yes' to each question. The mode is used for the rating scale. These are displayed in bar charts comparing the two pricing conditions.

Ethics: informed consent is obtained, shoppers are told of their right to withdraw, no names are recorded (confidentiality) and they are debriefed about the aim afterwards.

Question number	
10(b)(i)	Multiple unit pricing is a point of purchase decision. Supermarket consumers are exposed to a quantity anchor when multiple-unit prices are shown instead of single-unit prices (e.g. '6 cans for $3' versus '$0.50 each'). The higher number becomes salient, so shoppers buy more than normal. Wansink et al. (1998) tested this in 86 stores over one week: 43 used single unit pricing and 43 used multiple unit pricing on 13 categories of items. Multiple unit pricing led to more sales than single unit pricing.
10(b)(ii)	First, Wansink compared single unit pricing with multiple unit pricing for the same items. I used this by pricing the same soup as 'one for 70p' in week 1 and '3 for £2.10' in week 2, so the unit price was identical and only the type of pricing changed. Second, the knowledge says the multiple acts as an anchor that increases quantity bought. So my questions measured quantity ('How many tins did you buy?') and whether shoppers bought more than planned, and I compared the mean number bought in each week.
10(c)(i)	Paper and pencil given face-to-face means the researcher is there at the exit, so shoppers are more likely to complete it, and to do so straight after shopping while their purchases (and receipt) are fresh, giving more accurate answers.
10(c)(ii)	Closed questions give shoppers no opportunity to explain their behaviour. Answering 'Yes' to buying more soup than planned does not tell us why, e.g. whether it was the offer or simply that they needed it.
10(c)(iii)	The mean summarises the number of tins bought in each week as one figure, so the two pricing conditions can be easily compared to see whether multiple unit

Question number	
	pricing increased purchases.
	Health Psychology
11(a)	Aim: to investigate patients' preferences for the clothing their doctors wear.
	Hypothesis: patients will prefer doctors wearing a white coat to doctors wearing casual clothes.
	Sample: 60 adult patients (30 male, 30 female, aged 18 to 80) from a large general practice, selected by an opportunity sample as they wait in the waiting room.
	Interview format: a structured face-to-face interview, carried out in a private room by the same trained interviewer, so every patient gets the same questions in the same order. Patients are shown six photographs of the same male doctor and six of the same female doctor in different clothing: white coat, formal suit, smart casual, casual (jeans), surgical scrubs and a uniform with a name badge.
	Questions: closed questions, e.g. 'How happy would you be to see this doctor?' for each photograph, and 'Which photograph would you most like your doctor to look like?', plus two open questions, e.g. 'Why do you prefer this clothing?'
	Question scoring/interpretation: each photograph is rated on a 5-point scale (1 = very unhappy, 5 = very happy), giving quantitative data. Mean ratings for each style are calculated and compared by age and gender in a bar chart. Open answers are recorded and coded into themes (e.g. professionalism, hygiene, approachability) by two researchers, with inter-rater reliability checked.
	Ethics: informed consent, right to withdraw, confidentiality (no names recorded) and a debrief. The interview lasts about 10 minutes so the patient does not miss their appointment.
11(b)(i)	Non-verbal communication includes the clothing practitioners wear. McKinstry and

Question number	
	Wang (1991) studied patients' preferences for doctors' dress. Patients were shown photographs of the same male and the same female doctor dressed in five different styles, including a white coat, a formal suit and casual clothes, and indicated how happy they would be to see each doctor. The most acceptable was the male and female doctor wearing a white coat, and older patients were more likely to prefer formal dress.
11(b)(ii)	First, McKinstry and Wang showed photographs of the same doctor in different clothing. I used this by showing patients photographs of the same male and female doctor in six styles, so only the clothing changed. Second, patients rated how happy they would be with each doctor. I modified this into a structured interview in which each photograph is rated on a 5-point scale, with open questions added to find out why patients prefer a style such as the white coat.
11(c)(i)	A 5-point rating scale was used because each patient's score for each clothing style can be compared with other patients' scores, so mean ratings for e.g. the white coat and casual clothes can be compared.
11(c)(ii)	Patients may not give truthful answers because the interviewer can see them. A patient might rate the white coat highly because they think that is the answer the interviewer, who works at the practice, expects (social desirability).
11(c)(iii)	A structured interview was used so all patients received the same questions in the same order about the same photographs, so their ratings of each clothing style could be compared fairly.
	Organisational Psychology

Question number	
12(a)	Aim: to investigate the effect of noise level on the productivity of office workers. Hypothesis: workers will complete more tasks in a quiet condition than in a noisy condition. Type of experiment: a field experiment in the workers' own open-plan office. IV: noise level, with three conditions: low (below 40 dB), moderate (55 dB, normal conversation) and high (75 dB, recorded office noise played through speakers). Nothing over 80 dB is used, to avoid harm. Design: repeated measures, each worker doing one week in each condition, with counterbalancing (a third of workers in each order) to reduce order effects. Sample: 30 administrative workers from one company who volunteer after a notice from the researcher. Dependent variable: productivity, measured as the number of standard data-entry forms completed correctly per hour, recorded automatically by the computer system. The mean per hour for each worker in each condition is calculated and compared with their normal weekly average. Controls: same tasks of equal difficulty, same hours (9am to 5pm), same lighting and temperature, same weekdays, and supervisors give no feedback during the study. Ethical guidelines: informed consent is obtained in writing, explaining the noise levels. Workers are told they have the right to withdraw at any time without any effect on their job or pay, and the manager signs a statement confirming this. Protection from harm: noise is kept below 80 dB and anyone reporting headaches can stop. Confidentiality: results are anonymised so managers cannot see an individual's productivity. All workers are debriefed.
12(b)(i)	Physical work conditions such as illumination, temperature and noise can affect productivity. For most conditions there is an optimal level: not too much and not

Question number	
	too little. The Hawthorne studies at the Western Electric company varied illumination for a test group and found productivity rose whether lighting was increased or decreased, and the control group improved too. This was explained as the Hawthorne effect: workers worked harder because they were being observed and given attention, not because of the physical change itself (reviewed by Kompier, 2006).
12(b)(ii)	First, the knowledge says physical conditions such as noise affect productivity and that there may be an optimal level. I used this by making noise my IV with three levels (low, moderate, high) to find the level at which productivity is best. Second, the Hawthorne effect shows productivity can rise just because workers are observed. So my DV is recorded automatically by the computer, supervisors give no feedback, and each worker's output is compared with their own normal average, so attention is equal across all conditions.
12(c)(i)	The number of forms completed correctly per hour was chosen because it is an objective, quantitative measure of productivity, and counting only correct forms means a worker who works fast but makes mistakes in high noise is not shown as more productive.
12(c)(ii)	A field experiment is harder to control, so extraneous variables such as colleagues talking or phones ringing in the open-plan office could add extra noise, meaning changes in forms completed may not be due to the noise level set.
12(c)(iii)	The right to withdraw was chosen because workers may feel they cannot leave a study run at work for fear of losing their job; a signed statement from the manager reassures them they can stop if the noise becomes too unpleasant.