Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/42**

Paper 4 Specialist Options: Application and Research Methods **February/March 2025**

1 hour 30 minutes

5447036261

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) Outline the sample of participants used in this study. [4]

(b) Suggest **one** reason why a control group of participants was used in this study. [2]

(c) Explain **two** strengths of the sample used in this study, other than the use of a control group. [4]

2 **(a)** State **two** diagnostic criteria of gambling disorder. [2]

(b) Suggest **one** way in which gambling disorder could be measured, other than by self-report. Your answer **must** be ethical. [2]

(c) Explain **two** weaknesses of using a self-report to measure gambling disorder. [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)** Identify **two** ways in which deception was used in this study. [2]

(ii) Explain why each of these deceptions was necessary. [2]

(b) Suggest **one** effect on the results if deception had **not** been used in this study. [2]

(c) Explain **one** strength and **one** weakness of the use of field experiments to investigate choice blindness. [4]

4 **(a)** Outline **two** ways in which a gift can be wrapped. [2]

(b) Suggest how an unstructured observation can be used to investigate gift-wrapping behaviour. [2]

(c) Explain **two** strengths of using different features of observation to measure gift-wrapping behaviour. [4]

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Health Psychology

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

5 From the key study by Brudvik et al. on pain assessments by doctors, parents and children:

(a) Outline **two** conclusions from the study that add to the understanding of children's pain. [4]

(b) Suggest **one** way pain in children could be measured without using self-report pain rating scales. [2]

(c) Explain **two** weaknesses of conducting research on pain using children as participants. [4]

6 Malingering and Munchausen syndrome are both explanations of the misuse of health services.

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

(b) Suggest **one** way in which malingering could be identified by a doctor. [2]

(c) Explain **two** strengths of using case studies to research Munchausen syndrome. [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) Outline **two** causes of accidents identified by Swat. [4]

(b) Suggest **one** reason why all accidents are **not** reported. [2]

(c) Explain **one** reason why generalisations can be made from this study and **one** reason why generalisations **cannot** be made from this study. [4]

8 **(a)** Outline what is meant by a 'profit-sharing' type of reward system. [2]

(b) Suggest how the effectiveness of a profit-sharing reward system could be measured using a questionnaire with closed questions. [2]

(c) Explain **one** strength and **one** weakness of a 'profit-sharing' type of reward system. [4]

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Section B

Answer **one** question from this section.

Clinical Psychology

9 **(a)** Plan a study using an online questionnaire to investigate whether rational emotive behaviour therapy (REBT) is effective as a treatment for depression.

Your plan must include details about:
- question scoring/interpretation
- 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 study. [4]

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

(ii) Explain **one** weakness of your choice of question scoring/interpretation. [2]

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

Consumer Psychology

10 Point of purchase decisions include multiple unit pricing and suggestive selling.

(a) Plan an experiment to investigate the effectiveness of suggestive selling on purchases from a supermarket.

Your plan must include details about:
- controls
- directional or non-directional hypothesis. [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 controls. [2]

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

(iii) Explain **one** reason for your choice of directional or non-directional hypothesis. [2]

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Health Psychology

11 **(a)** Plan a study using an experiment to investigate whether biochemical treatments are more effective than stimulation therapy/TENS for chronic pain.

Your plan must include details about:
- experimental design
- 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 study. [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 an ethical guideline that you followed. [2]

Organisational Psychology

12 McClelland proposed an achievement motivation theory with different types of need: achievement, affiliation and power.

(a) Plan a study using a questionnaire to investigate which type of McClelland's needs is **most** common in teachers who teach 16–18-year-old students.

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

Question number

Section A: Clinical Psychology

1(a) The test group was 42 unrelated patients diagnosed with bipolar disorder type I (BPI): 25 females and 17 males. They were in-patients or out-patients of the REBRO and Vrapče psychiatric hospitals in Zagreb, Croatia, and 16 of them had a positive family history (at least one first-degree relative with a major affective disorder). The control group was 40 healthy people (25 females and 15 males), age- and sex-matched, recruited from the hospital staff and their friends. Ages ranged from 31 to 70.

1(b) To provide a baseline to compare the patients with. The controls had no bipolar disorder and no first-degree relative with a mental illness, so any difference in the serotonin gene variants found in the BPI patients could be linked to the disorder.

1(c) One strength is that the patients were recruited as in-patients and out-patients of the hospitals, so they were already known to the researchers. Their diagnosis of BPI had been confirmed by psychiatrists, so the patients were more likely to genuinely meet the inclusion criteria for the study, which makes the comparison with the healthy controls more valid.

A second strength is that the sample included both males and females with a wide age range, from 31 to 70. This means the findings about the genetics of bipolar disorder are not limited to one gender or one age group, so they can be generalised more widely to adults with BPI.

2(a) Impaired control over gambling behaviour, e.g. over how often or how long the

Question number	
	person gambles. Continuation or escalation of gambling despite negative consequences, such as debts or losing a job.
2(b)	A covert, naturalistic observation of the person in a betting shop or casino, with their later consent, recording over several weeks how often they gamble and whether they keep betting after losing, to see how many diagnostic features of gambling disorder are shown.
2(c)	One weakness is that the gambler may not give honest answers. They may want to hide the extent of their gambling addiction, for example saying they have not gambled in the past month when they have, or giving socially desirable answers, so the measure underestimates the severity of the disorder. A second weakness is that if closed questions are used, they may not account for individual differences. A fixed checklist of gambling behaviours may miss unique features of one person's gambling, such as why they gamble online at night, so the measure is less valid and has implications for planning their treatment.
	Section A: Consumer Psychology
3(a)(i)	Participants were recruited by being asked to take part in a "quality control" test of the jam and tea assortment at the store. Jars were "magical" jars, lidded at both ends with a divider inside, so they could be flipped to switch the sample secretly.
3(a)(ii)	The "quality control" cover story was necessary so participants did not realise they were taking part in a study. The magical jars were necessary because if participants saw the switch, the study

Question number	
	would simply not work.
3(b)	The results would be confounded. Participants would realise the study was about choice blindness and that the jars could be switched, so they would check the second taste much more carefully, responding to demand characteristics, and detection of the manipulation would be far higher than in the real study.
3(c)	A strength is that a field experiment is the best location for consumer research, because most consumer behaviour, such as choosing jam and tea, takes place in real shops. Hall et al. tested shoppers in a real supermarket, so participants behaved more naturally and the findings about choice blindness have high ecological validity. A weakness is that variables are more difficult to control than in a laboratory experiment. In a supermarket, retail atmospheric variables such as background music, noise and crowding may vary between participants and could affect whether they notice the switch, so it is harder to be sure the IV alone caused the results.
4(a)	Traditional wrapping: the gift meets expectations of looking like a gift, e.g. coloured paper with ribbons and bows. Non-traditional wrapping: it is hard to tell the item is a gift, e.g. it is wrapped in plain brown paper.
4(b)	An unstructured observation has no pre-determined behaviour categories. The observer watches people wrapping gifts, e.g. at a gift-wrapping counter in a shop, and writes down every gift-wrapping behaviour as it happens, such as choosing paper, folding, taping and adding a bow.
4(c)	One strength is that a covert observation means the person is unaware they are

Question number	
	being observed, so they behave naturally. They would wrap the gift as they usually would, not taking extra care to make it look neat because they know they are being watched, so the data is more valid. A second strength is that having more than one observer means inter-rater reliability can be checked. Two observers could independently record each wrapped gift and compare whether they both agree that it is traditional or non-traditional, so the measure is more reliable.
	Section A: Health Psychology
5(a)	Emergency department physicians significantly underestimate pain in children aged 3 and over, from all medical conditions, especially wounds, infections and soft tissue injuries, but less so for fractures. Physicians' pain assessments improve as the level of pain increases, but even so, hardly half of the children with severe pain receive pain relief. So children's self-reports on age-appropriate pain scales and parents' assessments are important to improve pain management in the emergency department.
5(b)	Observation of non-verbal cues by a trained observer, e.g. counting how often the child grimaces, rubs the injured area, limps or cries during a set time in the emergency department.
5(c)	One weakness is that children may not be able to explain what they are thinking or how they feel, because they lack language skills. A young child may not have the words to describe their pain, so they may not describe its intensity or type accurately, which lowers the validity of the data. A second weakness is that children may not fully understand complex instructions or their ethical rights. A child may not realise they have the right to withdraw

Question number	
	from a painful procedure or understand a debriefing, so it is harder to conduct the research ethically.
6(a)	Malingering is when a person deliberately pretends to be ill (fakes an illness) or exaggerates symptoms, for an obvious personal gain, e.g. to get time off work or avoid a court appearance.
6(b)	The doctor could use biological tests, such as a blood test or an X-ray, to investigate whether the illness the person claims to have is confirmed. If the results are normal but the symptoms are claimed to be severe, malingering is suspected.
6(c)	One strength is that a case study can offer in-depth insight into a rare disorder such as Munchausen syndrome. For example, Aleem and Ajarim (1995) studied one woman in detail who had made herself ill many times, and this gave rich information that could not be gained from a large sample. A second strength is that a case study may be the only way Munchausen syndrome can be studied. An experiment would be impossible and unethical, as no one could be made to fake illness, so studying a real patient's history, medical records and interviews gives practitioners information about the disorder and the reasons for it.
	Section A: Organisational Psychology
7(a)	Insufficient supervision: inadequate control of whether the worker followed the correct code of practice. Swat found this in 89% of the accidents studied. Poor workplace organisation: faults in how work is organised, e.g. inadequate personal protection, too high a pace of work or incorrect work procedures. This was

Question number	
	involved in 40% of the accidents.
7(b)	Reported accidents may have to meet certain criteria, so minor accidents are not reported. For example, an accident may only be counted if the worker has to go to hospital or take time off work, so small cuts are ignored.
7(c)	Generalisations can be made because the study included four very different trades: a foundry, a machinery plant, meat processing and furniture making. As the same causes, such as insufficient supervision, were found across all of these, they are likely to apply to many other trades. Generalisations cannot be made because the study was conducted only in Poland. There may be something specific about Polish work organisations, such as their safety laws or supervision practices, that is not present in work organisations in other countries, so the causes of accidents may differ elsewhere.
8(a)	Profit-sharing is an extrinsic reward where a percentage of the company's profit is shared among all workers, usually based on profits over a year.
8(b)	Give workers a paper questionnaire with Likert-type closed questions, such as "Profit-sharing makes me work harder: strongly agree / agree / disagree / strongly disagree", and compare mean scores to see if it motivates them.
8(c)	A strength is that it can increase motivation: the harder workers work and the more goods they produce, the more profit the company makes, so the more profit is shared with them. It also gives workers a sense of belonging, increasing commitment and reducing absences. A weakness is that profit-sharing cannot apply in all organisations, only where a profit is made. There is no profit in a public health service, the police or the fire

Question number	
	service, so these workers cannot be motivated in this way.
	Section B: Clinical Psychology
9(a)	Aim: to investigate whether REBT is effective as a treatment for depression.
	Hypothesis: patients will report significantly lower depression scores after a course of REBT than before it.
	Sample: a volunteer sample of 60 adults diagnosed with depression who are about to start 12 weekly sessions of REBT, recruited through an advert placed in five outpatient clinics.
	Technique and procedure: an online questionnaire, completed at home, sent by email link before therapy starts and again one week after the final session. Each participant uses a code number so the two questionnaires can be matched.
	Format: 20 questions. 18 are closed questions, e.g. "I feel sad most of the day", "I tell myself I am a total failure when something goes wrong", "When I have an irrational belief I dispute it". Two are open, e.g. "Describe how you now react when something bad happens".
	Question scoring/interpretation: closed questions use a 4-point scale: never (0), sometimes (1), often (2), always (3). Items such as disputing beliefs are reverse scored, so each person gets a total from 0 to 54, where higher means more depressed. Mean and median scores before and after REBT are compared in a bar chart. Open answers are coded into categories (e.g. rational, irrational) by two independent raters, checking agreement.
	Ethics: informed consent is gained on the first screen, participants can withdraw at any time by closing the page, data is confidential (code numbers only), and a debrief with helpline details is given at the end.
9(b)(i)	Ellis's rational emotive behaviour therapy (REBT) is based on the idea that

Question number	
	depression is maintained by irrational beliefs. In the ABC model, A is an activating event (e.g. failing an exam), B is the belief the person holds about A (e.g. "I am a complete failure"), and C is the consequence, the thoughts, feelings or behaviours that result, such as depression. In therapy, D is disputing: the therapist challenges the irrational beliefs logically and empirically. E is the effect of successfully disputing them, so the person develops rational beliefs and healthier emotional responses.
9(b)(ii)	First, I used B, the irrational beliefs. I turned this into a closed question, "I tell myself I am a total failure when something goes wrong", scored 0 to 3, to measure how many irrational beliefs patients hold before and after. Second, I used D, disputing. I asked "When I have an irrational belief I dispute it", reverse scored, so if REBT is effective patients should report disputing their beliefs more often after therapy.
9(c)(i)	A 4-point scale was used because each participant could express how often they felt each symptom, producing a total depression score, so the before and after REBT scores could be compared statistically.
9(c)(ii)	The scale has only 4 points, which may be too narrow. Two patients scoring "often" may differ greatly in how depressed they feel, so small improvements after REBT may not show up in the total score.
9(c)(iii)	The right to withdraw was given because depressed people may find questions about failure and sadness upsetting, so they must be able to stop the online questionnaire at any time without having to explain why.

Question number	
	Section B: Consumer Psychology
10(a)	Aim: to investigate whether suggestive selling increases the number of items bought in a supermarket.
	Directional hypothesis: customers will buy significantly more cans of a soft drink when a suggestive selling sign ("Buy 12 for your fridge") is displayed than when there is no sign.
	Type of experiment: a field experiment in a supermarket with the manager's permission.
	IV: whether the suggestive selling sign is displayed above the shelf (condition A) or not (condition B).
	DV: the number of cans of the drink bought by each customer, recorded from the till receipts at the checkout.
	Design and sample: independent measures. All customers who buy the drink during the study are an opportunity sample; conditions alternate day by day over four weeks (two weeks of each).
	Controls: the price (£0.80 per can) and shelf position stay the same in both conditions; the conditions run on the same days of the week and at the same times (9 am to 6 pm); no other promotions are run on drinks; the same supermarket is used so lighting, music and layout are the same.
	Data: quantitative; mean number of cans per customer for each condition, shown in a bar chart.
	Ethics: receipt data is anonymous, no individual is identified, and a notice explains research is taking place.
10(b)(i)	Suggestive selling is a point of purchase technique where a salesperson or a sign suggests an additional purchase or recommends a product that might suit the customer's needs. It is also called add-on selling, up-selling or cross-selling. It

Question number	
	works as an anchor: the number in the suggestion is used as a starting point when deciding how much to buy. Wansink et al. (1998) used suggestive selling slogans such as "Snickers bars: buy them for your freezer" and "Snickers bars: buy 18 for your freezer". Sales of Snickers bars increased, and the slogan with the anchor of 18 led to more being bought.
10(b)(ii)	First, I used Wansink's "buy 18 for your freezer" slogan. I modified it to "Buy 12 for your fridge" for a soft drink, as the suggestive selling sign in condition A. Second, I used the finding that sales increased with the suggestive slogan. This gave me a directional hypothesis that customers would buy more cans when the sign is displayed than in the no sign condition.
10(c)(i)	The price and shelf position were kept the same so the study is valid. If the price changed, customers might buy more cans because they were cheaper, so it is more likely the sign (IV) caused any change in the number bought.
10(c)(ii)	Keeping the same price and the same shelf with no other promotions is not how supermarkets really work, as drinks are often on offer, so the experiment loses some ecological validity.
10(c)(iii)	A directional hypothesis was chosen because there was psychological evidence suggesting the direction of the difference: Wansink et al. (1998) found that sales of Snickers increased with the "buy 18" slogan.
	Section B: Health Psychology
11(a)	Aim: to investigate whether biochemical treatment is more effective than TENS for chronic pain. Hypothesis: patients given a biochemical treatment will report

Question number	
	significantly lower pain than patients using TENS. Type of experiment: a field experiment run in a hospital pain clinic, as a randomised controlled trial. Sample: a volunteer sample of 60 adults with chronic lower back pain lasting more than 6 months, recruited through the pain clinic. Experimental design: independent measures. Participants are randomly allocated (names drawn from a hat) to group 1, biochemical: a peripherally acting analgesic (ibuprofen 400 mg, three times a day), or group 2, a TENS machine used for 30 minutes three times a day, with electrodes on the lower back. IV: type of treatment (biochemical or TENS). DV: pain on a 0 to 10 visual analogue scale, rated each evening for 4 weeks, plus a UAB pain behaviour rating by a nurse at weekly visits. Controls: same type of pain, same length of treatment and dosage times, same instructions read from a script; the nurse rating behaviour does not know which group the patient is in (single blind). Data: quantitative; mean pain ratings for each group are compared using a line graph over the 4 weeks. Ethics: informed consent is gained, a doctor checks each patient can safely take ibuprofen, patients can withdraw at any time, and data is confidential. All are debriefed and offered the better treatment afterwards.
11(b)(i)	Biochemical treatments for pain include peripherally acting analgesics, such as aspirin, ibuprofen and paracetamol, which act on the peripheral nervous system at the site of the pain. Centrally acting analgesics, such as morphine, work directly on the central nervous system. Local anaesthetics can work when rubbed in but are more effective when injected, e.g. an epidural. Stimulation therapy uses counter-irritation, directing attention away from the stronger pain. TENS (transcutaneous electrical nerve stimulation) is self-administered: electrodes are

Question number	
	placed on the skin near the pain and very mild electric shocks are given, causing distraction.
11(b)(ii)	First, I used peripherally acting analgesics. I chose ibuprofen for group 1 because it works at the site of the pain and is safe for long-term chronic pain, unlike morphine, which could cause dependence. Second, I used the feature that TENS is self-administered with electrodes near the pain. Group 2 placed the electrodes on their own lower back for 30 minutes three times a day, matching the times of the drug doses.
11(c)(i)	An independent measures design was chosen because it allows one treatment group, ibuprofen, to be compared directly with the other, TENS, without patients having tried both treatments one after the other.
11(c)(ii)	With an independent design there is no control over participant variables. Patients in the TENS group may by chance have more severe chronic back pain, so higher pain ratings may not be due to the treatment.
11(c)(iii)	Informed consent was gained because patients are given a drug and electric stimulation, so they must know about possible side effects of ibuprofen and the TENS shocks before agreeing to take part.
	Section B: Organisational Psychology
12(a)	Aim: to investigate which of McClelland's needs (achievement, affiliation or power) is most common in teachers of 16 to 18-year-old students. Sampling technique: a random sample. Ten sixth-form colleges are chosen and a list of all teachers of 16 to 18-year-olds at each is obtained. From each college 10

Question number	
	names are drawn at random from a hat, giving 100 teachers.
	Technique: a paper questionnaire handed out in the staff room and returned in a sealed envelope to a box.
	Format and number of questions: 18 closed questions, 6 for each need, plus 2 open questions. Examples: "It is important to me that my students get top grades" (achievement); "I want to be liked by my colleagues" (affiliation); "I like to be in charge of decisions in my department" (power). Each is answered on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). Open: "What motivates you most as a teacher?"
	Types of data: quantitative data from the closed questions: each teacher gets a score from 6 to 30 for each need, and their highest score is their dominant need. Mean scores for each need and the percentage of teachers with each dominant need are shown in a bar chart. Qualitative data from the open questions is coded into the three needs by two independent raters.
	Ethics: informed consent, right to withdraw, no names on the questionnaire so it is confidential, and a debrief.
12(b)(i)	McClelland's achievement motivation theory (1961) suggests we have three work-related needs. The need for achievement is the need to get a job done, master a task and be successful; people want to achieve through their own hard work and effort rather than luck. The need for affiliation is the need to be liked and accepted by other people, so effort goes into creating and maintaining social relationships and friendships. The need for power concerns being influential in the lives of others and in control of others; discipline is important.
12(b)(ii)	First, I used the need for achievement, the need to get a job done and be successful. I turned it into the question "It is important to me that my students get top grades", applied to teaching.

Question number	
	Second, I used the idea that there are three separate needs. I wrote 6 questions for each need, giving a separate score for each, so I could find which need is most common in teachers.
12(c)(i)	A random sample was chosen so that every teacher of 16 to 18-year-olds at the ten colleges had an equal chance of being selected, so the sample is less biased and more representative.
12(c)(ii)	The teachers drawn from the hat may not agree to take part, e.g. because they are too busy marking, so the final sample is no longer truly random and may be biased towards teachers who have more free time.
12(c)(iii)	Quantitative data was gathered because the scores for each need can be statistically analysed, so the mean scores for achievement, affiliation and power can be compared to find which is most common.