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Cambridge International AS & A Level

PSYCHOLOGY **9990/31**

Paper 3 Specialist Options: Theory **May/June 2020**

1 hour 30 minutes

0165627904

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
  - Answer questions from **two** options.
  - For each chosen option, answer **all** questions.
- 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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Psychology and abnormality

Answer **all** questions.

1 **(a)** Explain how SSRIs treat obsessive-compulsive disorder (OCD). [2]

(b) Lehmkuhl et al. (2008) treated a boy called Jason who had OCD.

Describe how exposure and response prevention treatment was used to reduce Jason's symptoms. [4]

(c) Discuss the validity of the study by Lehmkuhl et al. [6]

2 **(a)** Describe explanations of depression. [8]

(b) Evaluate explanations of depression, including a discussion of practical applications. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Explain the purpose of background music played in consumer environments. [2]

(b) Describe the study by North et al. (2003) on music in restaurants. [4]

(c) Explain **one** strength and **one** weakness of the study by North et al. [6]

4 **(a)** Describe what psychologists have learned about consumer decision-making (models, strategies, marketing theories). [8]

(b) Evaluate what psychologists have learned about consumer decision-making (models, strategies, marketing theories), including a discussion about reductionism. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Explain what is meant by a 'psychological measure' of stress. [2]

(b) Describe **one** physiological measure of stress. [4]

(c) Explain **one** strength and **one** weakness of the physiological measure described in **(b)**. [6]

6 **(a)** Describe what psychologists have discovered about improving adherence to medical advice. [8]

(b) Evaluate what psychologists have discovered about improving adherence to medical advice, including a discussion about ethics. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Explain what is meant by 'extrinsic motivation' in relation to work. [2]

(b) Describe how employees can be motivated by **two** monetary reward systems. [4]

(c) For **one** of the monetary reward systems you referred to in **(b)**:

Explain **one** strength and **one** weakness of this reward system for an organisation. [6]

8 **(a)** Describe theories of job satisfaction. [8]

(b) Evaluate theories of job satisfaction, including a discussion about determinism. [10]

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

Question number

Answers for paper 9990/31

Psychology and abnormality

1(a) SSRIs (selective serotonin reuptake inhibitors, e.g. fluoxetine) block the reuptake of serotonin into the presynaptic neuron, so more serotonin stays in the synapse and the level of serotonin in the brain increases. This lessens the anxiety caused by the obsessions, so the patient no longer feels the need to carry out compulsions such as repeated hand washing to relieve that anxiety.

1(b) Jason was a 12-year-old boy with autism and OCD. With the therapist he built a hierarchy of feared situations. In exposure, he was gradually made to touch the objects he had difficulty with, such as elevator buttons and door handles, starting with the least feared and moving up the hierarchy.
In response prevention, he was stopped from performing his usual compulsion afterwards and instead used coping statements to manage the anxiety. At first his anxiety was high, but as therapy progressed he learned that it fell quickly, within a few minutes, without the compulsion. His parents helped him practise exposures at home between sessions.

1(c) The study has good validity in some ways. It was a detailed longitudinal case study, following Jason before, during and after treatment, so it gives a lot of in-depth information about his recovery. It collected both quantitative data (symptom scores) and qualitative data, so his symptoms before and after treatment could be compared. This makes it more likely that it was the ERP

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treatment that improved his symptoms and not something else, and it supports ERP as a valid treatment that can be adapted to a child with autism. It also has high ecological validity: Jason was a real patient in real therapy, so he probably saw himself as a patient rather than a participant and responded naturally. However, validity may be lowered by demand characteristics or social desirability. Jason built a close relationship with the therapist and may have reported feeling better than he really did. Communication with a child with autism can also be difficult, although the therapy was adjusted to take this into account. Finally, with only one participant, who had had OCD for a short time, the findings may not generalise to adults or to patients without autism, so the validity of the conclusions beyond Jason is limited.

2(a) Biological explanations say depression has a genetic and neurochemical basis. Oruc et al. (1997) studied patients with bipolar disorder and found that sixteen had at least one first-degree relative with a major affective disorder, suggesting the disorder runs in families. They also found that polymorphisms in serotonin receptor genes could be linked to an increased risk of developing bipolar disorder, but only in the female participants. The neurochemical explanation is that depression is caused by low levels of serotonin (and other monoamines such as noradrenaline) in the brain, which affects mood.

The cognitive explanation (Beck, 1979) says depression is caused by faulty processing of information. Depressed people have negative schemas and cognitive biases, such as overgeneralising and magnifying failures. Beck described the cognitive triad: negative views about oneself, negative views about the world and negative views about the future. These influence each other, so the person spirals into a lower and lower mood.

The learned helplessness explanation (Seligman) says that a person who repeatedly experiences unpleasant events they cannot control learns that they are helpless, so

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they stop trying to improve their situation or mood, even when change becomes possible. This links to attributional style: depressed people explain bad events with internal (it is my fault), stable (it will always be like this) and global (it affects everything) attributions.

2(b) A strength of the explanations is that they have useful practical applications. The neurochemical explanation led to drug therapy such as SSRIs, which raise serotonin levels, and Beck's cognitive explanation led to cognitive restructuring and CBT, which challenge the negative triad. If an explanation is valid, the treatment based on it should be effective. However, SSRIs do not work for everyone: some patients feel much better while others feel no better or worse. This suggests the biochemical explanation is limited, and medication on its own will never be fully effective unless the other causes, such as negative thinking, are also treated.

The biological explanation is reductionist, as it reduces a complex disorder to genes and neurotransmitters. It is also hard to establish cause and effect: low serotonin may be a result of depression rather than its cause. Evidence such as Oruc et al. comes from a small sample of bipolar patients, and the gene link was only found in females, so it may not generalise to unipolar depression or to males.

The explanations also differ on nature versus nurture. The biological explanation stresses nature, whereas learned helplessness stresses nurture, as helplessness is learned from experience. Beck's explanation is less deterministic, because faulty thoughts can be changed, which gives the patient some control. However, it is difficult to know whether negative thinking causes depression or is simply a symptom of it.

Learned helplessness is based largely on research with animals, such as dogs given unavoidable shocks, so it may not generalise well to human depression, which also involves complex thought and emotion.

Overall, no single explanation is complete. A diathesis-stress view, where a genetic

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	vulnerability is triggered by life events and negative thinking, is more holistic, and it explains why combining drugs with CBT is often the most effective practical application.
	Psychology and consumer behaviour
3(a)	Background music is played while the person is doing something else, such as shopping, swimming or eating a meal in a restaurant, so it is not meant to be listened to directly. Its purpose is to create an atmosphere that influences the consumer's mood and behaviour, e.g. how long they stay or how much they spend.
3(b)	North et al. (2003) carried out a field experiment in a British restaurant. Over 18 evenings, classical music, pop music or no music was played in the background. Diners did not know they were in a study. The researchers calculated the mean spend per head on starters, main courses, desserts, coffee and drinks, and total spend, as well as the total time spent in the restaurant. They found that diners spent more, and so were prepared to pay more, when classical music was played than with pop music or no music.
3(c)	One strength is high ecological validity. The study took place in a real restaurant with real diners who ate and paid as they normally would, and they did not know they were being studied. This means demand characteristics were low, so the spending recorded reflects genuine consumer behaviour. The study also had a no-music control condition as a baseline, so the effect of classical music on spending can be measured, and the results are useful to restaurant owners deciding what music to play. One weakness is low generalisability. The study used only one restaurant in one town in the UK, with diners who were likely to be similar in age and income.

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	People who choose this kind of restaurant may already like classical music, so the finding that classical music raises spending may not apply to fast food restaurants, other countries or cultures where classical music has different associations. In addition, the study only collected quantitative data on spending, so it cannot tell us why diners spent more, e.g. whether the music made them feel more sophisticated.
4(a)	Models of decision-making: utility theory says consumers are rational and make decisions based on expected outcomes; they weigh up the benefits of each product and buy the one with the highest utility. Satisficing says consumers search among products until they find one that is good enough, then stop, e.g. trying on a few dresses and buying the first acceptable one. Prospect theory (Kahneman and Tversky) adds value and endowment: consumers value gains and losses differently, with losses felt more strongly, and a product seems more precious once you own it. Strategies: in a compensatory strategy, the consumer weighs up all the features, so a weakness in one can be made up for by a strength in another, e.g. fuel economy against the appearance of a car. Non-compensatory strategies evaluate features separately: satisficing; elimination by aspects, where products without the most important feature are removed, then the next feature is used, until one remains; and the lexicographic strategy, where the product best on the most important feature is chosen. Partially compensatory strategies include majority of confirming dimensions, where two products are compared on all features and the better one kept, and frequency of good and bad features. Marketing theories (Richarme, 2005): consideration theory says the consumer creates a short-list (consideration set) of brands and decides from it, e.g. a few restaurants rather than all of them. Involvement theory says the effort put into a decision depends on how important the product is to the consumer's quality of life, not just its price, e.g. low involvement for chewing gum but high involvement for a

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new mobile phone.

4(b) Utility theory is reductionist. It reduces decision-making to a simple rational weighing up of the benefits of every available product. It ignores emotions and the fact that many consumers make impulse purchases that are not rational and which they later regret. Satisficing and prospect theory are less reductionist, as they recognise that consumers have limited time and information and add the ideas of value and endowment.

Similarly, the compensatory strategy is the most reductionist, while non-compensatory and partially compensatory strategies are more complex because they accept that consumers do different things when deciding. However, the theories do not tell us whether a consumer uses one strategy for all purchases or changes strategy depending on the product, e.g. a pint of milk versus a new car. Involvement theory is more holistic here, as it explains why effort varies with the importance of the purchase.

The theories ignore individual differences: some consumers simply buy the first product that meets their minimum needs, while others compare every feature. They may also lack generalisability, as most were developed in Western cultures, and consumers in collectivist cultures may be more influenced by family when making decisions.

A strength is their practical application. Marketers can use consideration theory to make sure their brand enters the short-list, and involvement theory to decide how much information to give, e.g. detailed comparisons for high-involvement products. Prospect theory explains why free trials work, as people dislike losing a product once they have it.

Many of these models are also hard to test, because researchers cannot see the decision process directly and must rely on self-reports, which may not reflect what consumers really do.

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	Overall, the models are useful, but the most valid explanation is likely to combine them, since real decisions depend on the product, the situation and the individual.
	Psychology and health
5(a)	A psychological measure of stress is a tool used to measure the person's own experience of stress, rather than their body's response. Usually this is a psychometric test such as a self-report questionnaire (e.g. the SRRS), which gives a stress score that can be compared with a baseline or with other people.
5(b)	An fMRI scan measures brain activity by detecting changes in blood flow (blood oxygen levels) in the brain, as more active areas need more oxygenated blood. The person might do a control task and then a stressful task, e.g. in Wang et al. (2005) participants did a low-stress counting task and then difficult mental arithmetic under time pressure in the scanner, so changes in blood flow can be compared. Alternatively, stressed participants could be compared with a non-stressed control group, and it is inferred that differences in activity, such as in the right prefrontal cortex, are caused by stress.
5(c)	One strength of fMRI is that it gives objective, quantitative data. Blood flow is measured by a machine, so it is not affected by the participant lying or by social desirability, and it is not open to the researcher's interpretation. It is a reliable measure, as it can be repeated, and it is precise about the location of activity in the brain, more so than EEG. It can also be used before and after a treatment to see whether stress responses have reduced. One weakness is that it may lack validity. A change in cerebral blood flow could be caused by other factors, such as concentrating hard on the arithmetic or the anxiety of lying in a noisy, enclosed scanner, rather than stress itself. The fMRI

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also only gives quantitative data, so it tells us nothing about why the person feels stressed or how stressful they find their real life. The task in the scanner is artificial, so it may not reflect everyday stress.

6(a)

Ley (1988) said adherence can be improved by improving practitioner style. Practitioners should increase patient satisfaction by listening to the patient and finding out their worries. They should improve understanding and memory by avoiding jargon, using simple language, stating the most important information first, repeating key points and encouraging feedback to check recall. They should also select content carefully, being aware of the effect of what they say, e.g. whether it will cause fear in a vulnerable patient.

Behavioural techniques use rewards and prompts. Yokley and Glenwick (1984) aimed to motivate parents in a medium-sized US city to have children aged 5 or under immunised. Families were put into conditions: a mailed general prompt, a mailed specific prompt, a specific prompt plus increased access (extra clinic hours), a specific prompt plus a monetary incentive (a lottery with cash prizes), a contact control and a no contact group. Attendance was recorded over 12 weeks. The monetary incentive had the biggest effect, followed by increased access, the specific prompt and the general prompt.

Watt et al. (2003) studied 32 Australian children aged 1.5 to 6 with asthma. Parents used the standard Breath-a-Tech spacer and then the Funhaler, which rewards correct use with a spinning disc and a whistle, each for a week, and completed questionnaires. With the Funhaler, 38% more parents had medicated their child the previous day, and 60% more children took the recommended four or more breath cycles.

6(b)

The research raises ethical issues. Watt et al. obtained informed consent from parents, and the Funhaler improved the children's use of their medication, so the

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children benefited. Yokley and Glenwick did not obtain direct consent, and control groups could have been left at risk without immunisation. However, they treated the control groups as delayed treatment groups, sending them the motivational mailings after the study, and receiving reminders about immunisation is an everyday occurrence. The aim was to increase immunisation, so the benefits outweigh the costs. Using money to persuade parents could still be seen as manipulating their choices.

The research is very useful. Ley's advice is cheap and easy for doctors to use, and both behavioural studies show practical ways to raise adherence that health services can apply, such as reward-based devices for children or lotteries for immunisation.

Both behavioural studies were field studies, so they have high ecological validity, as they took place in real homes and clinics. Yokley and Glenwick also used a large sample and objective records of clinic attendance. However, Watt et al. used only 32 children from Australia, and adherence was measured by parents' self-reports, which may be affected by social desirability, so the results could be exaggerated. Also, the Funhaler was only tested for one week, so the novelty may wear off.

There are generalisability issues: both studies involved young children and their parents, so the findings may not apply to adults with long-term conditions. The behavioural approach is also reductionist, as it reduces adherence to rewards, ignoring beliefs about illness, cost of treatment and side effects.

Overall, the research gives clear, ethical and practical ways to improve adherence, but long-term, larger studies with objective measures are needed.

Psychology and organisations

7(a) Extrinsic motivation is when an employee is motivated to do work tasks by factors outside themselves rather than by enjoyment of the work. For example, they may

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	be motivated by pay, bonuses, working conditions or how well they get on with their manager.
7(b)	Bonuses: the employee receives an extra payment, often a percentage of the company's overall profits or of the profits from a particular project they worked on. This motivates employees to work hard on special projects and meet sales goals so they receive a higher bonus. Performance-related pay: pay is awarded to an employee after a thorough review of their work against agreed targets. This motivates employees to work hard to make sure their review is good and they reach their targets, so they receive the higher rate of pay.
7(c)	Performance-related pay. A strength for the organisation is that it has control over the reward. Targets can be explained when the employee starts and set so they match the company's goals, and pay is only given when the targets are met. This means the company should find employees are highly motivated to work hard to receive the reward, and it only pays more for better performance, so it need not be very expensive. If the company finds productivity rises, it can continue with the system. A weakness is that it ignores other factors that motivate employees, such as good relationships with managers, varied tasks or intrinsic enjoyment of the work. Employees who are not motivated much by money may not work harder, and focusing on targets may make staff ignore tasks that are not measured or compete rather than cooperate. It is also hard for the organisation to tell whether higher productivity is caused by the pay system or by other factors, and if most employees meet their targets it can become expensive.
8(a)	Herzberg's two factor theory (1959) says job satisfaction and dissatisfaction are

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independent of each other and are caused by different factors. Herzberg interviewed about 200 engineers and accountants in Pittsburgh, USA, collecting qualitative data on times they felt good or bad about their job. Hygiene factors, such as salary, job security, level of supervision and working conditions, must be met to remove dissatisfaction, e.g. paying a good wage, but they do not create satisfaction. Motivators, the content of the job such as recognition, responsibility, achievement and advancement, create satisfaction, e.g. offering promotion and more responsibility.

Hackman and Oldham's job characteristics theory (1976) identifies five core job characteristics: skill variety, task identity, task significance, autonomy and feedback. These lead to three critical psychological states: experienced meaningfulness of the work, experienced responsibility for outcomes and knowledge of the results. These in turn lead to high satisfaction, motivation and performance, allowing the worker to grow in the job.

Techniques of job design can increase satisfaction. Job enrichment redesigns the job to make it more challenging and interesting, with more skills and responsibility, so the employee feels more in control. Job rotation moves workers between different tasks regularly, within the same area or between departments, which gives variety and builds skills the company can use. Job enlargement increases the number of tasks in a job, widening the scope of the employee's duties so they do a wider variety of tasks each day.

8(b) The theories are deterministic. They suggest that a worker's satisfaction is directly caused by the practices of the organisation, such as pay or job design, so workers have little free will over whether they are satisfied. This ignores individual differences: some people find most jobs satisfying, while others dislike work, and an organisation would find it very hard to satisfy them. Hackman and Oldham are less deterministic, as they accept that growth need strength affects how much a

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person responds to an enriched job.

Herzberg's evidence has weaknesses. The critical incident interviews were self-reports, open to a self-serving bias: people credit themselves for good events (motivators) and blame the company for bad ones (hygiene factors). The sample of engineers and accountants in one American city also lacks generalisability to manual workers, women or other cultures, and the study is now dated.

The theories are also reductionist, reducing satisfaction to a list of factors or five characteristics and ignoring the person's home life, personality and relationships with colleagues. The situational emphasis means dispositional factors are overlooked.

On the other hand, the theories have strong practical applications. Managers can use them to redesign jobs, for example by giving autonomy and feedback, and job rotation can reduce boredom in repetitive work. However, the techniques are not always appropriate: enlargement may just be seen as more work for the same pay, and rotation may mean workers never become expert in one task.

In conclusion, the theories are useful guides for organisations, but they are deterministic and reductionist, so they should be used alongside an understanding of each employee's individual needs.

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PSYCHOLOGY **9990/32**

Paper 3 Specialist Options: Theory **May/June 2020**

1 hour 30 minutes

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Psychology and abnormality

Answer **all** questions.

1 **(a)** Outline **one** biomedical/genetic explanation of a phobia. [2]

(b) Describe **one** study about classical conditioning of a phobia, e.g. the study of little Albert. [4]

(c) Explain **one** strength and **one** weakness of the study you described in **(b)**. [6]

2 **(a)** Describe the treatment and management of depression. [8]

(b) Evaluate the treatment and management of depression, including a discussion of nature versus nurture. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Explain what is meant by 'persuasive techniques' used in advertising. [2]

(b) Describe the AIDA model of advertising. [4]

(c) Explain **one** similarity and **one** difference between the AIDA model and **one** other model of advertising. [6]

4 **(a)** Describe what psychologists have discovered about retail/leisure environment design. [8]

(b) Evaluate what psychologists have discovered about retail/leisure environment design, including a discussion about demand characteristics. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Explain what is meant by 'psychogenic pain'. [2]

(b) Describe the gate control theory of pain (Melzack, 1965). [4]

(c) Explain **two** strengths of the gate control theory. [6]

6 **(a)** Describe what psychologists have discovered about measuring stress. [8]

(b) Evaluate what psychologists have discovered about measuring stress, including a discussion about self-reports. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Explain what is meant by the 'norming' stage of group development by Tuckman (1965). [2]

(b) Describe the theory of team roles in organisations proposed by Belbin (1981). [4]

(c) Discuss the validity of Belbin's theory of team roles. [6]

8 **(a)** Describe what psychologists have discovered about motivators at work (intrinsic and extrinsic motivation, types of rewards systems, non-monetary rewards). [8]

(b) Evaluate what psychologists have discovered about motivators at work (intrinsic and extrinsic motivation, types of rewards systems, non-monetary rewards), including a discussion about determinism. [10]

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Question number

Answers for paper 9990/32

Psychology and abnormality

1(a) Preparedness (Seligman, 1971) says we are biologically prepared to fear objects and situations that threatened the survival of our ancestors, such as snakes, spiders and heights. Individuals who quickly learned to fear these survived and passed this tendency on to the next generation through their genes (DNA).

1(b) Watson and Rayner (1920) studied Little Albert. At 9 months, he showed no fear of a white rat (the neutral stimulus), a rabbit, a dog or masks. At 11 months, whenever he reached for the rat, a steel bar was struck with a hammer behind his head. The loud noise (unconditioned stimulus) made him cry (unconditioned response). After several pairings, Albert cried and crawled away when shown the rat alone, so it had become a conditioned stimulus producing a conditioned fear response. His fear also generalised to similar objects such as a rabbit and a fur coat, showing a phobia can be learned through classical conditioning.

1(c) A strength is that the study had high control. It was carried out in a laboratory, and Albert had been tested beforehand and shown no fear of the rat. Because the researchers controlled exactly when the rat and the noise were paired, they could be confident that the fear response was caused by the conditioning and not by other factors. This gives strong evidence that phobias can be learned through classical conditioning.

A weakness is that the study was unethical. Albert was a baby who could not

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	consent and was deliberately frightened and caused distress, so he was not protected from harm. The researchers also did not remove the phobia before Albert left the study, so he may have been left with a lasting fear. In addition, with only one participant, the findings cannot easily be generalised to how phobias develop in other people.
2(a)	Biological treatments use drugs. MAOIs (monoamine oxidase inhibitors) are older antidepressants, not often used today. They inhibit monoamine oxidase, the enzyme that breaks down noradrenaline, serotonin and dopamine, so levels of these neurotransmitters rise. SSRIs (selective serotonin reuptake inhibitors), e.g. fluoxetine, are more common. They prevent serotonin being reabsorbed into the presynaptic neuron after crossing the synapse, so more serotonin is available, which improves mood. Electro-convulsive therapy (ECT) involves passing an electric current through the brain, either bilaterally or unilaterally, to induce a seizure. It is done after the patient has been given an anaesthetic and muscle relaxant. The seizure is monitored by the doctor and lasts up to about a minute. Patients usually receive 6 to 12 sessions over a number of weeks. Cognitive restructuring (Beck, 1979) assumes depression is caused by faulty thinking. Over weeks or months of sessions, the therapist helps the patient identify their negative thoughts about themselves, the world and the future, and challenge them by testing them against reality. The patient practises more helpful alternative thoughts between sessions, which should lead to more helpful behaviours. Rational emotive behaviour therapy (Ellis, 1962) uses the ABC model: an Activating event leads to a Belief about it, which leads to emotional and behavioural Consequences. Ellis believed constant irrational beliefs, such as "I must be liked by everyone", lead to depression. The therapist disputes these beliefs so

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they are replaced by rational, constructive ones, and the patient practises this between sessions.

2(b) The treatments reflect the nature versus nurture debate. Drug therapy assumes the cause is nature: an imbalance of serotonin, which could be inherited. However, the imbalance could be caused by nurture, such as stressful life experiences, and it is difficult to tell because serotonin is not measured at birth. Cognitive therapies focus on nurture, as faulty thinking is learned. As depression probably involves both, combining drugs with therapy may be the most appropriate approach.

Drugs are effective for many patients, are cheap and easy to take, and need little effort from the patient. However, SSRIs can take weeks to work, have side effects such as nausea, and do not work for everyone. They only treat the symptoms, so depression may return when the drugs stop.

ECT can work quickly for severe depression when drugs have failed, which can save lives. However, it can cause memory loss, and it is not fully understood how it works. It raises ethical issues, especially if the patient is too ill to give informed consent.

Cognitive restructuring and REBT treat the cause rather than the symptoms, give the patient skills to prevent relapse and have no physical side effects. They are less deterministic, as they assume the patient can change their thinking. However, they are costly and time-consuming, and they need a motivated patient, so they may not suit someone with severe depression who lacks energy. They may also blame the patient's thinking while ignoring real problems in their life.

The biological treatments are reductionist, reducing depression to brain chemistry, while cognitive therapies ignore biology. Overall, each has practical value, and the best treatment depends on the severity of the depression and the individual.

Psychology and consumer behaviour

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3(a)	Persuasive techniques are methods used in advertising to convince a potential customer to buy a product that they might be uncertain (or even very uncertain) that they want, e.g. using celebrity endorsement, emotional appeals or one-sided messages.
3(b)	AIDA describes four stages an advert must take the customer through. Attention: the advert must first grab the customer's attention, e.g. with bright colours or a striking headline. Interest: once attention is gained, the advert must maintain interest so the customer wants to know more about the product. Desire: the advert shows the customer how the product can solve their problem, so they want it. Action: the advert gets the customer to take action as quickly as possible and buy the product, e.g. with a limited-time offer.
3(c)	The other model is the hierarchy of effects model (Lavidge and Steiner, 1961), with the stages awareness, knowledge, liking, preference, conviction and purchase. Similarity: both models have practical applications. Both are useful to companies at the planning stage of advertising, as they show that the advert must first get the consumer's attention: this is the awareness stage in the hierarchy of effects model and the attention and interest stages in AIDA. Both also see the consumer moving through stages in a fixed order towards purchase, so both are deterministic and assume the same process for every consumer. Difference: AIDA has one stage, desire, for convincing the customer to buy, where the advert increases the desire for the product. The hierarchy of effects model is more holistic, as it recognises that increasing desire is complex, so it has two stages, preference (preferring the brand over others) and conviction (being sure the purchase is right). It therefore explains in more detail how the advert should persuade the customer.

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4(a) Turley and Milliman (2000) reviewed 60 studies of the effects of atmosphere on shopper behaviour. They found it is possible to create atmospheres that influence consumer spending. They grouped the variables into external variables (e.g. the shop front and entrance), general interior variables (e.g. music, lighting, scent), layout and design variables, point of purchase and decoration variables (e.g. displays), and human variables (e.g. crowding and staff).

Finlay et al. (2006) investigated two casino designs: the Kranes playground model, with high ceilings, natural light and features such as plants and water, and the Friedman model, with low ceilings, a maze-like layout and gaming machines filling the space. Measures of emotional reactions were collected for six casinos, three of each design. The Kranes playground casinos were rated significantly higher on pleasure and restoration than the Friedman casinos.

Vrechopoulos et al. (2004) investigated three layouts in an online virtual grocery store: freeform, grid and racetrack. Participants in a laboratory experiment were given a planned shopping list and money to spend and shopped in the virtual store, with layout as the manipulated variable. Layout significantly affected online consumer behaviour: freeform was easiest for finding items on the list and most entertaining, grid was the easiest to use, and racetrack and freeform engaged consumers for longest.

4(b) Demand characteristics reduce the validity of some of this research. They are hard to avoid in laboratory studies, and gaining informed consent to meet ethical guidelines can increase them. In Finlay et al., participants knew they were in a study about emotional reactions to casinos, so they may have given ratings that suited the aim rather than how they really felt. Vrechopoulos et al. may be less affected, as with an independent measures design participants only saw one layout and were unlikely to guess the aim. Turley and Milliman may also suffer less, as

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many participants in the 60 studies probably did not know the aims, though this is not clear from the review.

Finlay et al. relied on self-reports of emotion, which give useful insight into feelings but are subjective and may not predict what gamblers actually do, such as how long they play or how much they spend.

Generalisability is an issue. Vrechopoulos et al. used an online grocery store, so findings may not apply to real supermarkets or to other types of product, and the casinos studied were in one region. In contrast, Turley and Milliman reviewed 60 studies, so their conclusions are based on a wide range of settings.

The research has practical applications: retailers can choose a layout to suit their aims, e.g. a grid for quick convenience shopping and a freeform layout to keep customers browsing. Casino designers can use the playground model to make customers feel good. However, this raises ethical issues if design is used to keep vulnerable gamblers playing longer.

The research takes a situational view, assuming the environment shapes behaviour, and ignores individual differences such as shoppers who just want to buy one item quickly.

Overall, the research shows environment design matters, but more field studies with behavioural measures are needed to reduce demand characteristics.

Psychology and health

5(a) Psychogenic pain is physical pain that is caused, increased or prolonged by mental, emotional or behavioural factors, rather than by tissue damage alone. Common types include headaches, back pain and stomach pain.

5(b) Melzack and Wall's gate control theory says pain depends on the peripheral and central nervous systems working together. A message from a stimulus is received

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	by the PNS but must be intense enough to travel to the CNS and be registered by the brain. Before reaching the brain, messages meet a "nerve gate" in the spinal cord (the dorsal horn). The gate may open or close depending on factors such as activity in large and small nerve fibres and instructions coming down from the brain, e.g. emotion or attention. If the gate opens, the signal reaches the brain and pain is experienced; if it closes, less pain is felt.
5(c)	One strength is its useful practical applications. Practitioners can use the theory to help control a patient's pain by closing the gate. Rubbing a painful area or using TENS stimulates large fibres that close the gate, and medication can be developed to target the gate and stop pain signals reaching the brain. Since thoughts and emotions can also close the gate, techniques such as distraction and relaxation can reduce pain. This leads to a better quality of life for patients. A second strength is that it is a holistic explanation with high explanatory power. Earlier specificity theory saw pain as a direct signal from the injury, but gate control theory includes physical and psychological factors. It can therefore explain why the same injury causes different amounts of pain in different people, why soldiers in battle sometimes feel no pain from serious wounds, and why anxiety makes pain worse.
6(a)	Physiological measures include recording devices and sample tests. Wang et al. (2005) used fMRI, which measures brain activity through changes in blood flow. Participants did a low-stress counting task, then a high-stress mental arithmetic task in the scanner, being prompted to work faster and to restart after mistakes. Self-reports of anxiety, heart rate and saliva samples were also taken. The stress condition produced more negative emotion, and the right ventral prefrontal cortex was found to play a key role in the stress response. Evans and Wener (2007) measured salivary cortisol in 139 adult train commuters,

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once during the morning commute and once at home at the weekend. Mood was rated during the commute, and motivation was measured by persistence on a proof-reading task afterwards. They found that the density of the train carriage did not affect stress, but seat density near the passenger raised both self-reported stress and cortisol, so personal space intrusions cause stress.

Psychological measures use self-report questionnaires. Holmes and Rahe's (1967) SRRS lists 43 life events, e.g. death of a spouse or loss of a job, each with a score. The person ticks events from the past 12 months and adds up the scores; the higher the total, the higher the stress.

Friedman and Rosenman (1974) assessed personality type. Type A people are competitive, impatient and controlling, while Type B are relaxed and non-competitive. In an 8 and a half year longitudinal study of about 3,000 healthy men aged 39 to 59, more than twice as many Type As developed coronary heart disease, about 70% of the cases, suggesting Type As experience more stress.

6(b) Self-reports such as the SRRS and the Type A questionnaire are quick and cheap, give quantitative data and allow comparisons between people. However, they are open to social desirability and demand characteristics: people may not admit events such as trouble with the law or sexual difficulties because of embarrassment, and they may not recall all the events of the past year. Because both are done as questionnaires rather than interviews, they are more confidential, which may increase honesty. The SRRS also ignores individual differences, as the same event, e.g. divorce, may be a relief for one person but very stressful for another.

Physiological measures are objective and not affected by lying, so they are more reliable. However, they may lack validity, as cortisol and blood flow can change for other reasons, such as caffeine, time of day or concentration. The fMRI task in Wang et al. was artificial, so it lacks ecological validity, while Evans and Wener

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measured cortisol during a real commute, which has high ecological validity. Combining both types of measure, as Wang et al. and Evans and Wener did, increases validity.

Friedman and Rosenman's study was longitudinal, so it could show that Type A preceded heart disease, which supports cause and effect better than a snapshot study. However, the sample was all male and mostly American, so it lacks generalisability to women and other cultures. Wang et al. used a small sample, which also limits generalisability.

The research is useful: measures can identify stressed people, e.g. high SRRS scores, so they can be helped, and employers could reduce crowding on transport. Overall, each measure has strengths and weaknesses, so a combination of self-report and physiological measures gives the most valid picture of stress.

Psychology and organisations

7(a) Norming is the third stage of Tuckman's model, after forming and storming. The members now feel part of the team, agree on rules and roles, and realise they can work together to achieve goals, so the team begins to work well on the tasks it is given.

7(b) Belbin said an effective team needs a balance of nine team roles, which fall into three categories. Action-oriented roles: the shaper (thrives on pressure and drives the team), the implementer (turns ideas into practical action) and the completer finisher (finds errors and finishes on time). People-oriented roles: the coordinator (a good chairperson who delegates), the teamworker (helps the team work together and avoids friction) and the resource investigator (explores outside opportunities). Thought-oriented roles: the plant (creative problem solver), the monitor evaluator (strategic thinker who judges options) and the specialist

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	(provides expert knowledge and skills).
7(c)	The theory has good validity in that it is holistic. It recognises that a team needs a range of different behaviours, e.g. creative, practical and social, and that one person can take more than one role, so it fits how real teams work. It also has some ecological validity, because Belbin took into account that many companies have teams with fewer than nine workers by allowing people to hold more than one role. The theory is measured by the Belbin Team Inventory, which has good criterion validity, as it combines the employee's self-report with observations by co-workers. This reduces the effects of social desirability, which would otherwise lower validity if people described the role they wished they had. However, the theory may lack temporal validity, as it is from 1981 and business has changed greatly since then: it is more specialised, more competitive and transformed by the internet. Businesses may no longer need all these roles inside the team, as some tasks can be done by other companies. It may also lack generalisability, as it was developed with UK management teams.
8(a)	Intrinsic motivation is when an employee's work is driven by an internal desire to succeed and meet personal goals, e.g. working hard to feel good about reaching a personal target. Extrinsic motivation is when work is driven by the desire to gain external rewards such as pay, promotion and bonuses. Types of reward system: pay is money given for work, either hourly or as an annual salary, and some jobs add tips or benefits such as use of a gym. Bonuses are paid at certain times, usually for hard work or reaching sales goals, often as a percentage of company profits. Profit-sharing shares out company profits among all employees, sometimes on a sliding scale by seniority; unlike bonuses, no goal must be met first. Performance-related pay sets targets for an individual or a team that

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must be met within an agreed time to receive a higher rate of pay. All of these are linked to extrinsic motivation.

Non-monetary rewards are not tangible but make employees feel better about their job and more motivated. Praise can be public or private, e.g. thanking an employee in front of other staff. Respect means treating employees with dignity and care, e.g. supporting them in a dispute with a customer. Recognition is similar to praise but may include a reward, e.g. employee of the month. Empowerment means trusting employees to do the job without constant monitoring, e.g. working from home, or giving on-the-job training. A sense of belonging is feeling valued by the employer and co-workers, e.g. through social events and team building.

8(b)

The theories of motivators are deterministic. They suggest that the employer provides the motivation, through pay or non-monetary rewards, and that this causes the employee's motivation. This ignores individual differences and free will, as some employees are motivated to work hard whether or not they receive external rewards, because they are intrinsically motivated. The idea of intrinsic motivation itself is less deterministic, as it places the cause inside the person.

The theories are also reductionist when they focus on money. Pay, bonuses and performance-related pay reduce motivation to a financial exchange, whereas non-monetary rewards such as empowerment and a sense of belonging take a more holistic view of what employees need, including social and esteem needs.

The reward systems vary in effectiveness and appropriateness. Performance-related pay can raise effort, but it may make staff focus only on measured targets, and individual targets may reduce teamwork. Extrinsic rewards can also undermine intrinsic motivation if the work comes to feel like something done only for money.

Monetary rewards are costly, especially if all employees qualify for a bonus, whereas praise and recognition cost little.

There may be cultural bias: individual bonuses and public praise may suit

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individualist cultures, while in collectivist cultures team-based rewards or a sense of belonging may motivate more, and some people may find public praise embarrassing.

The research has practical applications, as it helps managers design a mix of rewards. Overall, the most effective approach is probably a combination of fair pay and non-monetary rewards matched to each employee.

Cambridge Assessment International Education

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PSYCHOLOGY **9990/33**

Paper 3 Specialist Options: Theory **May/June 2020**

1 hour 30 minutes

0233701342

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
  - Answer questions from **two** options.
  - For each chosen option, answer **all** questions.
- 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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Psychology and abnormality

Answer **all** questions.

1 **(a)** Explain how SSRIs treat obsessive-compulsive disorder (OCD). [2]

(b) Lehmkuhl et al. (2008) treated a boy called Jason who had OCD.

Describe how exposure and response prevention treatment was used to reduce Jason's symptoms. [4]

(c) Discuss the validity of the study by Lehmkuhl et al. [6]

2 **(a)** Describe explanations of depression. [8]

(b) Evaluate explanations of depression, including a discussion of practical applications. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Explain the purpose of background music played in consumer environments. [2]

(b) Describe the study by North et al. (2003) on music in restaurants. [4]

(c) Explain **one** strength and **one** weakness of the study by North et al. [6]

4 **(a)** Describe what psychologists have learned about consumer decision-making (models, strategies, marketing theories). [8]

(b) Evaluate what psychologists have learned about consumer decision-making (models, strategies, marketing theories), including a discussion about reductionism. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Explain what is meant by a 'psychological measure' of stress. [2]

(b) Describe **one** physiological measure of stress. [4]

(c) Explain **one** strength and **one** weakness of the physiological measure described in **(b)**. [6]

6 **(a)** Describe what psychologists have discovered about improving adherence to medical advice. [8]

(b) Evaluate what psychologists have discovered about improving adherence to medical advice, including a discussion about ethics. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Explain what is meant by 'extrinsic motivation' in relation to work. [2]

(b) Describe how employees can be motivated by **two** monetary reward systems. [4]

(c) For **one** of the monetary reward systems you referred to in **(b)**:

Explain **one** strength and **one** weakness of this reward system for an organisation. [6]

8 **(a)** Describe theories of job satisfaction. [8]

(b) Evaluate theories of job satisfaction, including a discussion about determinism. [10]

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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.

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Answers for paper 9990/33

Psychology and abnormality

1(a) SSRIs (selective serotonin reuptake inhibitors, e.g. fluoxetine) block the reuptake of serotonin into the presynaptic neuron, so more serotonin stays in the synapse and the level of serotonin in the brain increases. This lessens the anxiety caused by the obsessions, so the patient no longer feels the need to carry out compulsions such as repeated hand washing to relieve that anxiety.

1(b) Jason was a 12-year-old boy with autism and OCD. With the therapist he built a hierarchy of feared situations. In exposure, he was gradually made to touch the objects he had difficulty with, such as elevator buttons and door handles, starting with the least feared and moving up the hierarchy.

In response prevention, he was stopped from performing his usual compulsion afterwards and instead used coping statements to manage the anxiety. At first his anxiety was high, but as therapy progressed he learned that it fell quickly, within a few minutes, without the compulsion. His parents helped him practise exposures at home between sessions.

1(c) The study has good validity in some ways. It was a detailed longitudinal case study, following Jason before, during and after treatment, so it gives a lot of in-depth information about his recovery. It collected both quantitative data (symptom scores) and qualitative data, so his symptoms before and after treatment could be compared. This makes it more likely that it was the ERP

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treatment that improved his symptoms and not something else, and it supports ERP as a valid treatment that can be adapted to a child with autism. It also has high ecological validity: Jason was a real patient in real therapy, so he probably saw himself as a patient rather than a participant and responded naturally. However, validity may be lowered by demand characteristics or social desirability. Jason built a close relationship with the therapist and may have reported feeling better than he really did. Communication with a child with autism can also be difficult, although the therapy was adjusted to take this into account. Finally, with only one participant, who had had OCD for a short time, the findings may not generalise to adults or to patients without autism, so the validity of the conclusions beyond Jason is limited.

2(a) Biological explanations say depression has a genetic and neurochemical basis. Oruc et al. (1997) studied patients with bipolar disorder and found that sixteen had at least one first-degree relative with a major affective disorder, suggesting the disorder runs in families. They also found that polymorphisms in serotonin receptor genes could be linked to an increased risk of developing bipolar disorder, but only in the female participants. The neurochemical explanation is that depression is caused by low levels of serotonin (and other monoamines such as noradrenaline) in the brain, which affects mood.

The cognitive explanation (Beck, 1979) says depression is caused by faulty processing of information. Depressed people have negative schemas and cognitive biases, such as overgeneralising and magnifying failures. Beck described the cognitive triad: negative views about oneself, negative views about the world and negative views about the future. These influence each other, so the person spirals into a lower and lower mood.

The learned helplessness explanation (Seligman) says that a person who repeatedly experiences unpleasant events they cannot control learns that they are helpless, so

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they stop trying to improve their situation or mood, even when change becomes possible. This links to attributional style: depressed people explain bad events with internal (it is my fault), stable (it will always be like this) and global (it affects everything) attributions.

2(b) A strength of the explanations is that they have useful practical applications. The neurochemical explanation led to drug therapy such as SSRIs, which raise serotonin levels, and Beck's cognitive explanation led to cognitive restructuring and CBT, which challenge the negative triad. If an explanation is valid, the treatment based on it should be effective. However, SSRIs do not work for everyone: some patients feel much better while others feel no better or worse. This suggests the biochemical explanation is limited, and medication on its own will never be fully effective unless the other causes, such as negative thinking, are also treated.

The biological explanation is reductionist, as it reduces a complex disorder to genes and neurotransmitters. It is also hard to establish cause and effect: low serotonin may be a result of depression rather than its cause. Evidence such as Oruc et al. comes from a small sample of bipolar patients, and the gene link was only found in females, so it may not generalise to unipolar depression or to males.

The explanations also differ on nature versus nurture. The biological explanation stresses nature, whereas learned helplessness stresses nurture, as helplessness is learned from experience. Beck's explanation is less deterministic, because faulty thoughts can be changed, which gives the patient some control. However, it is difficult to know whether negative thinking causes depression or is simply a symptom of it.

Learned helplessness is based largely on research with animals, such as dogs given unavoidable shocks, so it may not generalise well to human depression, which also involves complex thought and emotion.

Overall, no single explanation is complete. A diathesis-stress view, where a genetic

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vulnerability is triggered by life events and negative thinking, is more holistic, and it explains why combining drugs with CBT is often the most effective practical application.

Psychology and consumer behaviour

3(a) Background music is played while the person is doing something else, such as shopping, swimming or eating a meal in a restaurant, so it is not meant to be listened to directly. Its purpose is to create an atmosphere that influences the consumer's mood and behaviour, e.g. how long they stay or how much they spend.

3(b) North et al. (2003) carried out a field experiment in a British restaurant. Over 18 evenings, classical music, pop music or no music was played in the background. Diners did not know they were in a study. The researchers calculated the mean spend per head on starters, main courses, desserts, coffee and drinks, and total spend, as well as the total time spent in the restaurant. They found that diners spent more, and so were prepared to pay more, when classical music was played than with pop music or no music.

3(c) One strength is high ecological validity. The study took place in a real restaurant with real diners who ate and paid as they normally would, and they did not know they were being studied. This means demand characteristics were low, so the spending recorded reflects genuine consumer behaviour. The study also had a no-music control condition as a baseline, so the effect of classical music on spending can be measured, and the results are useful to restaurant owners deciding what music to play.

One weakness is low generalisability. The study used only one restaurant in one town in the UK, with diners who were likely to be similar in age and income.

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People who choose this kind of restaurant may already like classical music, so the finding that classical music raises spending may not apply to fast food restaurants, other countries or cultures where classical music has different associations. In addition, the study only collected quantitative data on spending, so it cannot tell us why diners spent more, e.g. whether the music made them feel more sophisticated.

4(a) Models of decision-making: utility theory says consumers are rational and make decisions based on expected outcomes; they weigh up the benefits of each product and buy the one with the highest utility. Satisficing says consumers search among products until they find one that is good enough, then stop, e.g. trying on a few dresses and buying the first acceptable one. Prospect theory (Kahneman and Tversky) adds value and endowment: consumers value gains and losses differently, with losses felt more strongly, and a product seems more precious once you own it. Strategies: in a compensatory strategy, the consumer weighs up all the features, so a weakness in one can be made up for by a strength in another, e.g. fuel economy against the appearance of a car. Non-compensatory strategies evaluate features separately: satisficing; elimination by aspects, where products without the most important feature are removed, then the next feature is used, until one remains; and the lexicographic strategy, where the product best on the most important feature is chosen. Partially compensatory strategies include majority of confirming dimensions, where two products are compared on all features and the better one kept, and frequency of good and bad features.

Marketing theories (Richarme, 2005): consideration theory says the consumer creates a short-list (consideration set) of brands and decides from it, e.g. a few restaurants rather than all of them. Involvement theory says the effort put into a decision depends on how important the product is to the consumer's quality of life, not just its price, e.g. low involvement for chewing gum but high involvement for a

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new mobile phone.

4(b) Utility theory is reductionist. It reduces decision-making to a simple rational weighing up of the benefits of every available product. It ignores emotions and the fact that many consumers make impulse purchases that are not rational and which they later regret. Satisficing and prospect theory are less reductionist, as they recognise that consumers have limited time and information and add the ideas of value and endowment.

Similarly, the compensatory strategy is the most reductionist, while non-compensatory and partially compensatory strategies are more complex because they accept that consumers do different things when deciding. However, the theories do not tell us whether a consumer uses one strategy for all purchases or changes strategy depending on the product, e.g. a pint of milk versus a new car. Involvement theory is more holistic here, as it explains why effort varies with the importance of the purchase.

The theories ignore individual differences: some consumers simply buy the first product that meets their minimum needs, while others compare every feature. They may also lack generalisability, as most were developed in Western cultures, and consumers in collectivist cultures may be more influenced by family when making decisions.

A strength is their practical application. Marketers can use consideration theory to make sure their brand enters the short-list, and involvement theory to decide how much information to give, e.g. detailed comparisons for high-involvement products. Prospect theory explains why free trials work, as people dislike losing a product once they have it.

Many of these models are also hard to test, because researchers cannot see the decision process directly and must rely on self-reports, which may not reflect what consumers really do.

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	Overall, the models are useful, but the most valid explanation is likely to combine them, since real decisions depend on the product, the situation and the individual.
	Psychology and health
5(a)	A psychological measure of stress is a tool used to measure the person's own experience of stress, rather than their body's response. Usually this is a psychometric test such as a self-report questionnaire (e.g. the SRRS), which gives a stress score that can be compared with a baseline or with other people.
5(b)	An fMRI scan measures brain activity by detecting changes in blood flow (blood oxygen levels) in the brain, as more active areas need more oxygenated blood. The person might do a control task and then a stressful task, e.g. in Wang et al. (2005) participants did a low-stress counting task and then difficult mental arithmetic under time pressure in the scanner, so changes in blood flow can be compared. Alternatively, stressed participants could be compared with a non-stressed control group, and it is inferred that differences in activity, such as in the right prefrontal cortex, are caused by stress.
5(c)	One strength of fMRI is that it gives objective, quantitative data. Blood flow is measured by a machine, so it is not affected by the participant lying or by social desirability, and it is not open to the researcher's interpretation. It is a reliable measure, as it can be repeated, and it is precise about the location of activity in the brain, more so than EEG. It can also be used before and after a treatment to see whether stress responses have reduced. One weakness is that it may lack validity. A change in cerebral blood flow could be caused by other factors, such as concentrating hard on the arithmetic or the anxiety of lying in a noisy, enclosed scanner, rather than stress itself. The fMRI

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also only gives quantitative data, so it tells us nothing about why the person feels stressed or how stressful they find their real life. The task in the scanner is artificial, so it may not reflect everyday stress.

6(a) Ley (1988) said adherence can be improved by improving practitioner style. Practitioners should increase patient satisfaction by listening to the patient and finding out their worries. They should improve understanding and memory by avoiding jargon, using simple language, stating the most important information first, repeating key points and encouraging feedback to check recall. They should also select content carefully, being aware of the effect of what they say, e.g. whether it will cause fear in a vulnerable patient.

Behavioural techniques use rewards and prompts. Yokley and Glenwick (1984) aimed to motivate parents in a medium-sized US city to have children aged 5 or under immunised. Families were put into conditions: a mailed general prompt, a mailed specific prompt, a specific prompt plus increased access (extra clinic hours), a specific prompt plus a monetary incentive (a lottery with cash prizes), a contact control and a no contact group. Attendance was recorded over 12 weeks. The monetary incentive had the biggest effect, followed by increased access, the specific prompt and the general prompt.

Watt et al. (2003) studied 32 Australian children aged 1.5 to 6 with asthma. Parents used the standard Breath-a-Tech spacer and then the Funhaler, which rewards correct use with a spinning disc and a whistle, each for a week, and completed questionnaires. With the Funhaler, 38% more parents had medicated their child the previous day, and 60% more children took the recommended four or more breath cycles.

6(b) The research raises ethical issues. Watt et al. obtained informed consent from parents, and the Funhaler improved the children's use of their medication, so the

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children benefited. Yokley and Glenwick did not obtain direct consent, and control groups could have been left at risk without immunisation. However, they treated the control groups as delayed treatment groups, sending them the motivational mailings after the study, and receiving reminders about immunisation is an everyday occurrence. The aim was to increase immunisation, so the benefits outweigh the costs. Using money to persuade parents could still be seen as manipulating their choices.

The research is very useful. Ley's advice is cheap and easy for doctors to use, and both behavioural studies show practical ways to raise adherence that health services can apply, such as reward-based devices for children or lotteries for immunisation.

Both behavioural studies were field studies, so they have high ecological validity, as they took place in real homes and clinics. Yokley and Glenwick also used a large sample and objective records of clinic attendance. However, Watt et al. used only 32 children from Australia, and adherence was measured by parents' self-reports, which may be affected by social desirability, so the results could be exaggerated. Also, the Funhaler was only tested for one week, so the novelty may wear off.

There are generalisability issues: both studies involved young children and their parents, so the findings may not apply to adults with long-term conditions. The behavioural approach is also reductionist, as it reduces adherence to rewards, ignoring beliefs about illness, cost of treatment and side effects.

Overall, the research gives clear, ethical and practical ways to improve adherence, but long-term, larger studies with objective measures are needed.

Psychology and organisations

7(a) Extrinsic motivation is when an employee is motivated to do work tasks by factors outside themselves rather than by enjoyment of the work. For example, they may

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	be motivated by pay, bonuses, working conditions or how well they get on with their manager.
7(b)	Bonuses: the employee receives an extra payment, often a percentage of the company's overall profits or of the profits from a particular project they worked on. This motivates employees to work hard on special projects and meet sales goals so they receive a higher bonus. Performance-related pay: pay is awarded to an employee after a thorough review of their work against agreed targets. This motivates employees to work hard to make sure their review is good and they reach their targets, so they receive the higher rate of pay.
7(c)	Performance-related pay. A strength for the organisation is that it has control over the reward. Targets can be explained when the employee starts and set so they match the company's goals, and pay is only given when the targets are met. This means the company should find employees are highly motivated to work hard to receive the reward, and it only pays more for better performance, so it need not be very expensive. If the company finds productivity rises, it can continue with the system. A weakness is that it ignores other factors that motivate employees, such as good relationships with managers, varied tasks or intrinsic enjoyment of the work. Employees who are not motivated much by money may not work harder, and focusing on targets may make staff ignore tasks that are not measured or compete rather than cooperate. It is also hard for the organisation to tell whether higher productivity is caused by the pay system or by other factors, and if most employees meet their targets it can become expensive.
8(a)	Herzberg's two factor theory (1959) says job satisfaction and dissatisfaction are

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independent of each other and are caused by different factors. Herzberg interviewed about 200 engineers and accountants in Pittsburgh, USA, collecting qualitative data on times they felt good or bad about their job. Hygiene factors, such as salary, job security, level of supervision and working conditions, must be met to remove dissatisfaction, e.g. paying a good wage, but they do not create satisfaction. Motivators, the content of the job such as recognition, responsibility, achievement and advancement, create satisfaction, e.g. offering promotion and more responsibility.

Hackman and Oldham's job characteristics theory (1976) identifies five core job characteristics: skill variety, task identity, task significance, autonomy and feedback. These lead to three critical psychological states: experienced meaningfulness of the work, experienced responsibility for outcomes and knowledge of the results. These in turn lead to high satisfaction, motivation and performance, allowing the worker to grow in the job.

Techniques of job design can increase satisfaction. Job enrichment redesigns the job to make it more challenging and interesting, with more skills and responsibility, so the employee feels more in control. Job rotation moves workers between different tasks regularly, within the same area or between departments, which gives variety and builds skills the company can use. Job enlargement increases the number of tasks in a job, widening the scope of the employee's duties so they do a wider variety of tasks each day.

8(b) The theories are deterministic. They suggest that a worker's satisfaction is directly caused by the practices of the organisation, such as pay or job design, so workers have little free will over whether they are satisfied. This ignores individual differences: some people find most jobs satisfying, while others dislike work, and an organisation would find it very hard to satisfy them. Hackman and Oldham are less deterministic, as they accept that growth need strength affects how much a

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person responds to an enriched job.

Herzberg's evidence has weaknesses. The critical incident interviews were self-reports, open to a self-serving bias: people credit themselves for good events (motivators) and blame the company for bad ones (hygiene factors). The sample of engineers and accountants in one American city also lacks generalisability to manual workers, women or other cultures, and the study is now dated.

The theories are also reductionist, reducing satisfaction to a list of factors or five characteristics and ignoring the person's home life, personality and relationships with colleagues. The situational emphasis means dispositional factors are overlooked.

On the other hand, the theories have strong practical applications. Managers can use them to redesign jobs, for example by giving autonomy and feedback, and job rotation can reduce boredom in repetitive work. However, the techniques are not always appropriate: enlargement may just be seen as more work for the same pay, and rotation may mean workers never become expert in one task.

In conclusion, the theories are useful guides for organisations, but they are deterministic and reductionist, so they should be used alongside an understanding of each employee's individual needs.